

# RELATIONS BETWEEN JOB SATISFACTION AND SCIENTIFIC FIELDS

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## Abstract

*The aim of the research was to establish a relationship between job satisfaction of scientific workers and scientific fields at the University of Novi Sad.*

*A method of variance analysis was used in order to obtain the difference in the attitudes of scientific workers concerning the job satisfaction in relation to the scientific field (social, natural sciences and mathematics, technical and technological, medical, and humanities).*

*The starting point of the research was a hypothesis that there were significant correlations between job satisfaction of scientific workers and scientific fields.*

*The sample consisted of 400 respondents, i.e. scientific workers from the University of Novi Sad, who filled in the on-line questionnaire based on the theoretical concepts of Herzberg's Two-Factor Theory of Motivation, in order to carry out the research related to the examination of the scientific workers' attitudes toward job satisfaction. When observing the scientific fields and job satisfaction of the scientific workers in the relation thereto, the obtained results indicate that there were differences in the expression of job satisfaction of the scientific workers in relation to the scientific field.*

*The differences found among the groups suggested that there were differences in salaries and benefits. Scientific workers in the field of humanities, social sciences and medicine, expressed a high level of dissatisfaction in terms of remuneration, in relation to two components: a financial rewarding (a salary), and rewarding with the social status (progress, advancement, recognition). Also, these groups of scientific workers were not satisfied with the established communication with their colleagues at other universities and state institutions in the field of education and science. Scientific workers in the field of sciences and mathematics, and technical and technological fields, expressed a higher level of job satisfaction on these aspects of work.*

**Key words:** *job satisfaction, scientific fields, scientific workers, Herzberg's Theory of Motivation.*

*JEL classification: J5, J2, J4*

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# RELACIJE ZADOVOLJSTVA POSLOM I NAUČNIH OBLASTI

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## Sažetak

*Cilj istraživanja predstavlja utvrđivanje veze između zadovoljstva poslom naučnih radnika i oblasti naučnog rada na Univerzitetu u Novom Sadu.*

*Za dobijanje razlika u stavovima naučnih radnika prema zadovoljstvu poslom u odnosu na naučne oblasti (društvene, prirodno matematičke, tehničko-tehnološke, medicinske u humanističke nauke) korišćena je metoda analize varijanse.*

*U istraživanju se polazi od očekivanja da postoje značajne veze između zadovoljstva poslom naučnih radnika i oblasti naučnog rada.*

*Na uzorku od 400 ispitanika, koji čine naučni radnici sa Univerziteta u Novom Sadu on lajn Upitnikom koji je baziran na teoretskim konceptima Herzbergove dvofaktorske teorije motivacije, sprovedeno je istraživanje koje se odnosi na ispitivanje stavova naučnih radnika prema zadovoljstvu poslom.*

*Kada se posmatraju naučne oblasti, i u odnosu na njih zadovoljstvo poslom naučnih radnika, dobijeni rezultati ukazuju da postoje razlike u izražavanju zadovoljstva poslom naučnih radnika u odnosu na oblast naučnog rada.*

*Pronađene razlike među pojedinim grupama ukazuju da postoje razlike u pogledu plata i beneficija. Naučni radnici iz oblasti društvenih, humanističkih i medicinskih nauka izrazili su visok stepen nezadovoljstva u pogledu nagrađivanja i to u odnosu na dve komponente: nagrađivanje kroz materijalni deo (plata) i nagrađivanje kroz socijalni status (napredak, usavršavanje, priznanje). Takođe, ove grupe naučnih radnika, nisu zadovoljne ostvarenom komunikacijom sa kolegama sa drugih fakulteta i državnim institucijama u okviru obrazovanja i nauke. Naučni radnici iz oblasti prirodno-matematičkih i tehničko-tehnoloških oblasti izrazili su viši stepen zadovoljstva poslom na ovim aspektima posla.*

**Ključne reči:** *zadovoljstvo poslom, naučne oblasti, naučni radnici, Herzbergova teorija motivacije*

*JEL klasifikacija: J5, J2, J4*

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## **INTRODUCTION**

A number of scientific papers have confirmed that job satisfaction is one of the most precise indicators of the work motivation. Job motivation is conditioned by a range of correlated factors of variable relevance, depending on a series of objective and subjective conditions. Job satisfaction is generally considered from two standpoints. There are attempts to determine the factors conditioning the satisfaction on the one, along with the consequences the job satisfaction/dissatisfaction has on other attitudes, productivity and various other forms of the work, on the other hand. In the beginning, the studies of factors that lead to job satisfaction implied that there is only one general factor. However, an indisputable fact was verified later on, stating that there are numerous factors influencing the job satisfaction. The factors are interactive and change depending on personal traits of employees, socio-demographic characteristics, jobs performed, work situations, characteristics of the organisation and the level of life satisfaction in general.

## **MOTIVATION TO WORK**

If motivation is defined as the process that initiates, guides and maintains goal-oriented human behaviour, a person's motivation is one of the most significant factors, able to a great extent, to organise, guide and influence the quality and intensity of employees in the work process. Work motivation is analysed on the basis of employees' satisfaction with particular job aspects, by studying the employees' attitudes towards individually analysed job segments.

In early 20<sup>th</sup> century, a dominant perception of an economic man referred to the idea that an employee was only motivated to work by earnings. An employee commences employment at a work organisation in order to earn the money he needs to satisfy his other needs, primarily basic, existential needs, such as the need for food, housing, clothing and so on. Satisfaction of other needs is accomplished outside the work organisation, i.e. in the employee's private sphere. Outside the work organisation the employee satisfies various social needs and needs of his ego, experiences love and friendship, demonstrates creativity in sports, arts and his social life. An employee modelled upon the economic man, satisfies, within the work organisation, his existential needs by ensuring earnings, but all his other needs are not satisfied there, as their satisfaction is postponed until the period other than working hours. In this manner the role of work is separated from a work-free life and is placed in the world of necessity, because "he works in one place to live in another one". The rational economic motivation of employees, if not combined with other motivational approaches, cannot be suffi-

## UVOD

Veliki broj istraživačkih radova je potvrdio da je zadovoljstvo poslom jedan od najpreciznijih indikatora motivacije za rad. Zadovoljstvo poslom zavisi od niza povezanih faktora čiji je značaj promenljiv, a zavisi od niza objektivnih i subjektivnih uslova. Zadovoljstvo poslom se uglavnom posmatra sa dva aspekta. S jedne strane, nastoji se utvrditi koji faktori uslovljavaju zadovoljstvo, a s druge strane su posledice koje zadovoljstvo-nezadovoljstvo poslom ima na ostale stavove, produktivnost i razne druge oblike radnog ponašanja. U početku su istraživanja uzročnih faktora zadovoljstva poslom podrazumevala postojanje samo jednog opšteg faktora, ali kasnije se potvrdila nesporna činjenica da postoje mnogobrojni faktori koji utiču na zadovoljstvo poslom. Faktori deluju interaktivno i menjaju se zavisno od osobina ličnosti zaposlenih, socio - demografskih karakteristika, posla koji obavljaju, radne situacije, karakteristika organizacije i nivoa zadovoljstva životom uopšte.

## MOTIVACIJA ZA RAD

Ako motivaciju definišemo kao proces pokretanja, usmeravanja i održavanja ljudskog ponašanja ka određenom cilju, onda je čovekova motivacija jedan od najznačajnijih faktora koji u velikoj meri može da organizuje, usmerava, utiče na kvalitet i intenzitet zaposlenih u radnom procesu. Motivacija za rad se posmatra kroz zadovoljstvo radnika pojedinim aspektima posla i to kroz stavove zaposlenih prema pojedinačno ispitivanim segmentima posla.

Početak prošlog veka, dominantno shvatanje o ekonomskom čoveku, odnosilo se na to da je radnik za obavljanje posla bio motivisan isključivo zaradom. Zaposleni čovek dolazi u radnu organizaciju da bi zaradio novac koji mu je potreban za zadovoljenje njegovih drugih potreba, najpre osnovnih, egzistencijalnih potreba. Potreba za hranom, stanovanjem, odevanje i slično. Zadovoljenje ostalih potreba ostvaruje se u van organizacijskom prostoru, dakle u radnikovoj privatnoj sferi. Van radne organizacije zaposleni čovek zadovoljava razne svoje socijalne i ego potrebe, doživljava ljubav i prijateljstvo, ispoljava kreativnost u sportu, umetnosti ili u svom društvenom životu. Radnik po modelu ekonomskog čoveka, u radnoj organizaciji zadovoljava svoje egzistencijalne potrebe obezbeđivanjem prihoda, ali tamo ne zadovoljava svoje ostale potrebe, odlaže njihovo zadovoljenje za period van radnog vremena. Na taj način se uloga rada odvaja od slobodnog života i smešta u svet nužnosti, jer on "radi na jednom mestu da bi živio na drugom

cient<sup>2</sup> because, if it only stimulates the employees to come to work and carry out the tasks assigned by their superior, it may lead to working without enthusiasm and interest, resulting in the employees that are neither satisfied, nor efficient<sup>3</sup>

Previous studies have indicated that motivation and job satisfaction depend on the two sets of factors: general (pertaining to the socio-economic conditions, type of job, working conditions) and individual socio-psychological factors (such as position, social background, employee's qualification, personal traits and value systems determining the employees' behaviour).

In order to obtain answers to issues regarding motivation, a great number of theories may be classified into two groups: content theories and process theories.

### **Content theories of motivation**

Content theories discuss the content and types of motives, i.e. all the things that motivate people. These theories are attempting to answer the question: Why do people work? If we had the answer to this question and if we knew what needs and motives drive people to work, we would be able to motivate the employees adequately and therefore stimulate the additional commitment to work. These theories are aimed to define the needs that drive people to behave in a particular way. A typical example of an approach to the problem in the content models of motivational theories may be found in the following quotation by Howell<sup>4</sup>: *"Find out a man's motives and you have made a great step in resolving the issue of different attitudes towards one's job and differences in behaviour. Think of the ways how to satisfy the relevant motives and get a recipe for organisational success"* [6]. Content theories of motivation include: Maslow's hierarchy of needs, Alderfer's ERG model and Herzberg's two-factor theory.

### **Process theories of motivation**

Process theories contemplate the motivation process, i.e. how people get motivated. Process theories provide the answer to the question: How do people decide to work? They discover the process in which people get motivated to undertake certain activities. Process theories include the following: the Adams' equity theory or equality in social exchange, Vroom's expectancy theory and Porter-Lowler model of motivation.

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2 (Steers, R.M. & Porter, L.W.: *Motivation and workbehavior*; Mc Graw-Hill, New York)

3 (Katz, D. & Kahn, R.L., 1966: *The social psychology of organizations*, Wiley, New York).

4 Howell's quotation has been translated from the Serbian language for the purposes of this paper.

mestu". Racionalno-ekonomsko motivisanje radnika, ako nije kombinovano sa drugim motivacionim pristupima, ne može biti dovoljno<sup>2</sup> (Steers, R.M. & Porter, L.W.), jer ako samo pokreće zaposlene da dolaze na posao i obavljaju zadatke koje dobijaju od svojih šefova, može se desiti da rade bez volje i zainteresovanosti, pa nisu ni zadovoljni, a nisu ni efikasni<sup>3</sup> (Katz, D. & Kahn, R.L., 1966).

Dosadašnja istraživanja su ukazala da motivacija i zadovoljstvo poslom zavise od dve grupe faktora: opštih (koji se odnose na društveno ekonomsku klimu, vrstu posla, uslove rada) i pojedinačne socio-psihološke činioce (kao što su položaj, socijalno poreklo, obrazovanje radnika, osobine ličnosti i sistemi vrednosti koji određuju ponašanje zaposlenih).

U cilju dobijanja odgovora na pitanja motivacije, mnogobrojne teorije se svrstavaju u dve grupe: teorije sadržaja i teorije procesa.

### **Teorije sadržaja motivacije**

Sadržajne teorije govore o sadržajima i vrstama motiva, tj. o tome šta sve motiviše čoveka. Ove teorije pokušavaju da daju odgovor na pitanje: zašto ljudi rade? Kada bismo znali odgovor na ovo pitanje i kada bismo znali koje su to potrebe i motivi koji pokreću ljude na rad, mogli bismo na adekvatan način motivisati zaposlene i na taj način ih podstaći na dodatno zalaganje na poslu. Ove teorije imaju za cilj da otkriju potrebe koje pokreću ljude da se ponašaju na određeni način. Kao tipičan primer pristupa problemu kod sadržajnih modela teorija motivacije može da posluži citat Hovela: "Otkrij koji su čovekovi motivi, i učinio si veliki korak prema rešavanju pitanja razlika u stavu prema poslu i razlika u ponašanju. Izmisli načine da zadovoljiš relevantne motive, i evo ti recepta za organizacijski uspeh"<sup>4</sup>. Teorije sadržaja motivacije su: Maslovljeva teorija hijerarhije potreba, Alderferov ERG-model i Hertzbergova dvofaktorska teorija.

### **Teorije procesa motivacije**

Procesne teorije se bave procesom motivacije, tj. time kako se čovek motiviše. Procesne teorije daju odgovor na pitanje: kako ljudi donose odluke da rade? Otkrivaju proces putem kojeg se ljudi motivišu na preduzimanje određene aktivnosti. Procesne teorije su: Adamsova teorija pravednosti ili jednakosti u socijalnoj razmeni, Vrumova teorija očekivanja, i Porter-Lawler-ov model motivacije.

2 (Steers, R.M. & Porter, L.W.: *Motivation and workbehavior*, Mc Graw-Hill, New York)

3 (Katz, D. & Kahn, R.L., 1966: *The social psychology of organizations*, Wiley, New York).

4 (Howell, W.C., 1976: *Essentials of Industrial and Organizational Psychology*)

## **MOTIVATION – HYGIENE APPROACH TO MOTIVATION (THEORY BY F. HERZBERG)**

In the list of books studying the job satisfaction, the most common starting point is the theory by F. Herzberg. Regardless of the fact that Herzberg established his theory in the late 50's of the previous century, when the positions on organisation management were much more different from the present day positions, a number of subsequent studies has been based on the fundamental principles of Herzberg's theory.

Until the emergence of Herzberg's theory, it was assumed that identical factors influence both job satisfaction and dissatisfaction. The novelty introduced by Herzberg in the theory of work motivation includes the perception that job satisfaction is a continuum influenced by one set of factors, while job dissatisfaction is another continuum influenced by another set of factors. The Herzberg's<sup>5</sup> two-factor theory is based on the separation of factors of the intrinsic (inner) from factors of the extrinsic (outer) motivation. The survey which formulated this theory was carried out by studying 200 engineers and economists from nine companies, in an industrial environment, i.e. it involved the respondents from among experts. In the survey, the respondents "were required to specify the situations in which, in the course of their employment, they felt very well or very bad. The analysis of the content of 500 answers to that question indicated that the factors listed in these answers could be divided into a number of categories, but those listed for pleasant feelings differed from the factors associated with unpleasant feeling".

According to this theory, the intrinsic factors causing satisfaction are associated with the job content (job, recognition, advancement) and they satisfy the individuals' need to prove themselves (need for accomplishments, recognition, responsibilities, personal fulfillment through the job nature itself and need for personal development and advancement, for self-actualisation). They are able to motivate people to work, have motivating needs and are referred to as motivators or job content factors. These needs get satisfied only if a person holds a stimulating and challenging job position, engaging the person in an adequate manner. The absence of motivators still does not lead to dissatisfaction, only to the absence of satisfaction. Dissatisfaction is caused by another set of factors that do not arise from the very nature of work, but from characteristics of the environment in which the work is carried out, mainly referring to the physical conditions of the working environment, social conditions of the working environment (the management and administration system, interpersonal relations), safety at work, salary

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<sup>5</sup> Herzberg, F., 1968: *Work and Nature of Man*, New York, Crowel)

## HERZBERGOVA DVOFAKTORSKA TEORIJA MOTIVACIJE

U literaturi u kojoj se izučava zadovoljstvo poslom, najčešće se polazi od teorije F. Herzberg-a. Bez obzira što je Herzberg svoju teoriju uspostavio kasnih 50-tih godina prošlog veka, kada su stavovi o upravljanju organizacijom bili značajno drugačiji od današnjih stavova, mnoga kasnija istraživanja počivaju na osnovim postulatima Herzbergove teorije.

Do pojave Herzbergove teorije smatralo se da isti faktori utiču i na zadovoljstvo i na nezadovoljstvo poslom. Novina koju je Herzberg uneo u teoriju motivacije za rad sastoji se u shvatanju da je zadovoljstvo poslom jedan kontinuum i na njega utiče jedna grupa faktora, dok je nezadovoljstvo drugi kontinuum i na njega utiče druga grupa faktora. Herzbergova <sup>5</sup> dvofaktorska teorija zasniva se na odvajanju faktora intrinzične (unutrašnje) i faktora ekstrinzične (spoljašnje) motivacije. Istraživanje kojim je uobličena ova teorija, sprovedeno je ispitivanjem 200 inženjera i ekonomista iz 9 preduzeća, u industrijskom ambijentu, na ispitanicima iz kategorije stručnjaka. U istraživanju od ispitanika su "tražili da navedu one situacije u kojima su se u toku svog radnog staža u vezi sa poslom osećali vrlo dobro, ili vrlo loše. Analiza sadržaja 5000 odgovora na to pitanje pokazala je da se u odgovorima navedeni faktori mogu podeliti u mnogo kategorija, ali da su oni različiti za prijatno osećanje od onih za neprijatno osećanje".

Prema ovoj teoriji, intrinzični faktori koji izazivaju zadovoljstvo odnose se na sadržaj posla (posao, priznanje, napredovanje) i oni zadovoljavaju potrebe pojedinca za sopstvenim dokazivanjem (potreba za dostignućima, priznanjima, odgovornostima, ispunjenjem ličnosti kroz prirodu samog rada i za ličnim razvojem i napredovanjem, za samoaktualizacijom). Oni mogu da motivišu na rad, imaju motivatorske potrebe i nazivaju se motivatori ili faktori sadržaja posla. Ove potrebe bivaju zadovoljene tek ako čovek radi na podsticajnom i izazovnom poslu koji ga na pravi način angažuje. Odsustvo motivatora još uvek ne izaziva nezadovoljstvo, već samo odsustvo zadovoljstva. Nezadovoljstvo zavisi od druge grupe faktora koje ne izvire iz prirode samog rada, već iz karakteristika sredine u kojoj se rad odvija, koji se uglavnom odnosi na fizičke uslove radne sredine, društvene uslove radne sredine (sistem upravljanja i rukovođenja, međuljudski odnosi), bezbednost na poslu, distribucija plata, poslovna politika i status u poslu. Ovi faktori se nazivaju kontekstualni faktori (faktori okruženja) ili higijenski jer deluju kao preventiva, sprečavaju nezadovoljstvo, ali nisu dovoljni da izazovu zadovoljstvo.

<sup>5</sup> Herzberg, F., 1968: *Work and Nature of Man*, New York, Crowell



distribution, business policy and workplace status. These factors are called contextual factors (environmental factors) or hygiene factors, since they have preventive effect; they prevent dissatisfaction, but are not sufficient to cause satisfaction.

*Table 1: Factors influencing motivation (F. Herzberg):*

<b>External factors (hygiene)</b>	<b>Internal factors (motivators)</b>
Working conditions	Job purpose and content
Company's business policy	Achievement and success
Salary	Possibility of improvement and self-actualisation
Benefits	Advancement possibility
Management	Responsibility towards work
Interpersonal relations	Recognition

When studying the influence of these two sets of factors on job satisfaction and/or dissatisfaction, Herzberg concludes that the character of motivational quality of these two sets of factors is essentially different. This means that they represent two completely different sets of factors, one of which causes satisfaction, while the other one leads to dissatisfaction. The positive motivation and increased productivity may only be influenced by the first set of factors, whereas the control of the other set of factors may eliminate or reduce dissatisfaction, but not also increase satisfaction.<sup>6</sup> Motivators lead to satisfaction and motivate persons to commit, while the hygiene factors only protect against dissatisfaction and do not lead to motivation. Results of subsequent studies have not verified such a clear distinction between motivators and hygiene factors, as demonstrated by the results of studies carried out by Herzberg and his associates.<sup>7</sup> However, the lasting value of this model is in that it enables us to distinguish the motivational influence of the job content from the influence of the job context, or in other words, to distinguish intrinsic from extrinsic factors of motivation.

T. Watson<sup>8</sup> criticised the motivation-hygiene theory, believing that Herzberg completely ignored the employees' participation in management, as one of significant factors of motivation, which, according to Watson, should be classified in the first set of factors, according to Herzberg's classification.

In 1966, Herzberg supplemented his theory with assumptions on the effects of the employees' inclusion in the decision making process on moti-

6 (Herzberg, F., Mausner, B. & Snyderman, B. B., 1959: *The motivation to work*, New York, Wiley)

7 Locke & Henne, 1986: *Work motivation theories*, International review of industrial and organizational psychology

8 (Watson, T. J., 1980: *Sociology, Work and industry*, Routledge & Kegan Paul, London)

Tabela br.1: Faktori koji utiču na motivaciju (F.Herzberg):

Spoljašni faktori (higijenski)	Unutrašnji faktori (motivatori)
Uslovi rada	Smisao i sadržaj posla
Poslovna politika kompanije	Postignuće i uspeh
Plata	Mogućnost rasta i samoaktualizacije
Beneficije	Mogućnost napredovanja
Rukovođenje	Odgovornost prema radu
Međuljudski odnosi	Priznanje

Kada se proučava uticaj ove dve grupe faktora na zadovoljstvo, odnosno nezadovoljstvo poslom, Herzberg zaključuje da je priroda motivacionih kvaliteta dve grupe faktora u suštini različita. To znači da se radi o dve potpuno različite grupe faktora, od kojih jedna izaziva zadovoljstvo, a druga grupa nezadovoljstvo. Na pozitivnu motivaciju i povećanje produktivnosti može da utiče samo prva grupa faktora, dok regulacijom druge grupe faktora može se eliminisati ili smanjiti nezadovoljstvo, ali se ne može povećati zadovoljstvo <sup>6</sup>. Motivatori dovode do zadovoljstva i motivišu na zalaganje, dok higijenski faktori samo štite od nezadovoljstva ali ne motivišu. Rezultati kasnijih istraživanja nisu potvrdili tako jasno razgraničenje motivatora i higijenskih faktora kako što su pokazali rezultati istraživanja u radu Herzberga i saradnika <sup>7</sup>. Međutim, trajna vrednost ovog modela je u tome što nas upućuje na razlikovanje motivacionog uticaja sadržaja posla od uticaja konteksta posla, ili drugim rečima na razlikovanje intrinzičnih od ekstrinzičnih činilaca motivacije.

T. Votson<sup>8</sup> je kritikovao motivaciono-higijensku teoriju, smatrajući da je Herzberg potpuno zanemario participaciju zaposlenih u upravljanju kao jedan od važnih faktora motivacije, koji su u Herzbergovoj podeli, a prema Votsonu, spadali su u prvu grupu faktora

Herzberg je 1966. godine svoju teoriju dopunio pretpostavkama o uticaju uključivanja zaposlenih u proces odlučivanja na motivaciju. Međutim, ta dopuna se nije bazirala na konkretnim empirijskim istraživanjima, pa samim tim, i nije bila dovoljno ubedljiva.

Herzbergova teorija nije ni potvrđena ni odbačena. Brojna istraživanja koja su koristila istu metodologiju (metodologiju kritičnog događaja), dobila su slične rezultate. Međutim, istraživanja u kojima je primenjena drugačija metodologija, nisu dobila iste ili slične rezultate Herzbergovim. Primer, kada se od ljudi traži da opišu prijatne događaje, to na njih deluje sugestivno

6 (Hertzberg, F., Mausner, B. & Snyderman, B. B., 1959: The motivation to work, New York, Wiley)

7 Locke & Henne, 1986: Work motivation theories, International review of industrial and organizational psychology)

8 (Watson, T. J., 1980: Sociology, Work and industry, Routledge & Kegan Paul, London)

vation. However, that supplement was not based on concrete empirical research, and was, therefore, not sufficiently convincing.

Herzberg's theory has neither been verified nor rejected. Numerous studies that applied the same methodology (the critical incident methodology) had similar results. However, the studies in which different methodology was used did not have the same results or the ones similar to Herzberg's. For instance, when people are required to describe pleasant events, it has a connotative effect on them, so they are trying to describe in the most positive way. The same respondents behaved the opposite way when describing some unpleasant incidents. Based on that, the main objection to Herzberg's theory is the subjectivity of the obtained results. A positive side of this theory is the fact that, in addition to strictly psychological factors, Herzberg pointed to the relevance of more extensive physical and social conditions of the working environment as factors of work motivation.

## **RESEARCH**

### **The Research Objective**

The research objective was to establish relations of job satisfaction of the scientific workers at the University of Novi Sad and the scientific fields.

### **Sample of respondents**

The sample of respondents included the scientists employed at the University of Novi Sad, who entered all the data on their previous scientific results and personal and professional information in the scientific records, compiled in the electronic form in the database of the Provincial Secretariat for Science and Technological Development. The overall sample involved 400 respondents, 213 of whom were male and 184 female respondents.

Regarding the structure of the scientific fields, this research used the classification of the National Council for Higher Education, which divided the scientific fields into five groups: social, humanities, technical and technological, medical, sciences and mathematics. 60 respondents answered in the field of social sciences, 25 respondents answered in the field of humanities, 194 respondents answered in the field of technical and technological sciences, 54 of them answered in the field of medical science, and 67 respondents answered in the field of the sciences and mathematics.

tako da se trude da ih opišu što pozitivnije. Isti ispitanici su se obrnuto ponašali u opisivanju neprijatnih događaja. Na osnovu ovoga, osnovna primedba Herzbergovoj teoriji jeste subjektivnost dobijenih rezultata. Pozitivna strana ove teorije je što je Herzberg, pored čisto psiholoških faktora, ukazao i na značaj širih- fizičkih i društvenih uslova radne sredine kao faktora radne motivacije.

## ISTRAŽIVANJE

### Problem istraživanja

Problem istraživanja je utvrđivanje relacija zadovoljstva poslom naučnih radnika na Univerzitetu u Novom Sadu i naučnih oblasti.

### Uzorak ispitanika

Uzorak ispitanika činili su naučni radnici Univerziteta u Novom Sadu, koji su svoje podatke o dosadašnjem naučnom učinku, kao i biografske podatke imali zabeležene u naučnim kartonima koji su sakupljeni u Pokrajinskom sekretarijatu za nauku i tehnološki razvoj, u bazi podataka u elektronskoj formi. Ukupan uzorak obuhvatao je 400 ispitanika.

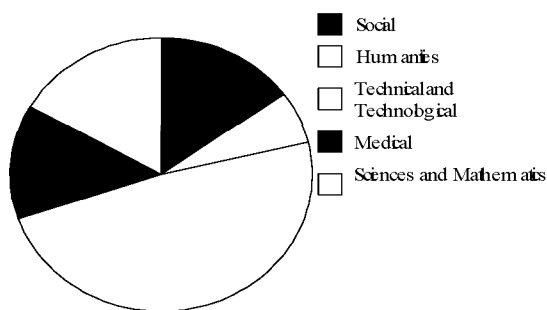
U pogledu strukture prema naučnim oblastima, u ovom istraživanju korišćena je klasifikacija Nacionalnog saveta za visoko obrazovanje u kojoj su naučne oblasti podeljene u pet grupa: društvene, humanističke, tehničko-tehnološke, medicinske i prirodno-matematičke. Iz oblasti društvenih nauka, 60 ispitanika je dalo odgovore, iz humanističkih nauka 25 ispitanika, iz tehničko-tehnoloških nauka 194 ispitanika, iz medicinskih nauka 54 ispitanika i iz prirodno-matematičkih nauka 67 ispitanika.

*Tabela br.2: Prikaz zastupljenosti naučnih oblasti*

	Naučne oblasti	Broj	Procenat	Validan Procenat	Kumulativan Procenat
Validan	Društvene	60	15.0	15.0	15.0
	humanističke	25	6.3	6.3	21.3
	tehničko-tehnološke	194	48.5	48.5	69.8
	medicinske	54	13.5	13.5	83.3
	prirodno-matematičke	67	16.8	16.8	100.0
	Ukupno	400	100.0	100.0	

Table no. 2: Review of the scientific field representation

Scientific fields		Number	Percentage	Valid Percentage	Cumulative Percentage
Valid	Social	60	15.0	15.0	15.0
	Humanities	25	6.3	6.3	21.3
	Technical and Technological	194	48.5	48.5	69.8
	Medical	54	13.5	13.5	83.3
	Science and Mathematics	67	16.8	16.8	100.0
	Total	400	100.0	100.0	

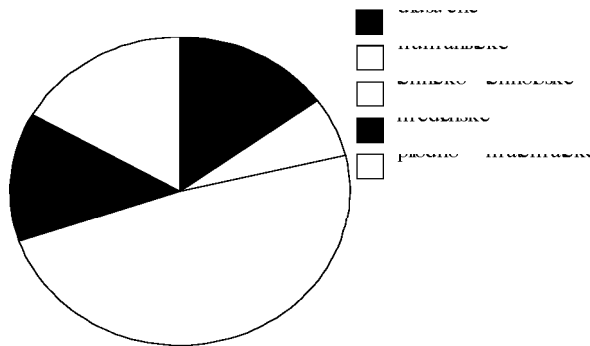


### Instruments

A questionnaire designed by the author Željka Bojanić<sup>9</sup> was used to measure job satisfaction. It was developed on the basis of theoretic postulates of Herzberg's motivation-hygiene approach to motivation (describing internal and external factors that influence one's job satisfaction). Several factors were selected according to which job satisfaction was measured. These included the following:

- internal (advancement, recognition, achievement and success, responsibility towards work and self-actualisation) and external (money, amount of salary, benefits, business policy, working conditions and interpersonal relations);
- willingness to accept changes (changes conditioned by the Bologna Declaration);
- evaluation and self-evaluation;
- organisational aspects of the University;
- business communication and exchange of information among scientists at the University of Novi Sad, as well as the exchange of information with

<sup>9</sup> Bojanić, Ž., 2007: Subjektivni aspekti procene ljudskog kapitala na visokoobrazovnim institucijama, (Subjective aspects of estimation of human resources at high education institutions-doctoral thesis) Doktorska disertacija, Fakultet tehničkih nauka, Novi Sad



Slika br.1: Zastupljenost naučnih oblasti

### Instrumenti

Za merenje zadovoljstva poslom korišćen je upitnik autora Željke Bojanić<sup>9</sup> koji je konstruisan na osnovu teorijskih postavki Herzbergovog motivacijsko-higijenskog pristupa motivaciji (koji govori o unutrašnjim i spoljašnjim faktorima koji utiču na zadovoljstvo poslom). Odabrano je nekoliko faktora pomoću kojih je mereno zadovoljstvo poslom. To su sledeći faktori: unutrašnji (napredovanje, priznanje, postignuće i uspeh, odgovornost prema radu i samoaktualizacija) i spoljašnji (novac, visina plate, beneficije, poslovna politika, uslovi rada i međuljudski odnosi); spremnost na prihvatanje promena (promene uslovljene Bolonjskom deklaracijom); evaluacija i samoevaluacija; organizacijski aspekti Univerziteta; poslovna komunikacija i razmena informacija između samih naučnih radnika unutar Univerziteta u Novom Sadu, kao i razmena informacija sa drugim univerzitetima u zemlji i inostranstvu i drugim državnim institucijama u okviru obrazovanja i nauke.

Ispitanici su odgovarali na pitanja iz upitnika na osnovu instrukcija navedenih na početku upitnika, tako što su birali jednu od ponuđenih pet alternativa duž sumacione skale stavova, skale Likertovog tipa, koja sadrži tvrdnje na koje ispitanici dajući odgovore izražavaju stepen saglasnosti, odnosno, nesaglasnosti. (Od 1 koje označava potpunu nesaglasnost sa sadržinom tvrdnje, do 5, koje označava potpunu saglasnost sa sadržinom tvrdnje.

Upitnik koji meri stavove naučnih radnika prema zadovoljstvu poslom distribuiran je elektronskom poštom. Upitnik je imao formu Web aplikacije, što je doprinelo da su se u kratkom vremenskom roku dobili odgovori na postavljena pitanja. Nakon popunjavanja upitnika izvršeno je automatsko ažuriranje baze podataka.

<sup>9</sup> Bojanić, Ž., 2007: Subjektivni aspekti procene ljudskog kapitala na visokoobrazovnim institucijama, Doktorska disertacija, Fakultet tehničkih nauka, Novi Sad

other universities at the national and international level and other state institutions in the domain of education and science.

The respondents responded to questions from the questionnaire according to the instructions provided at the beginning of the questionnaire, by choosing one of the five alternatives provided along the summarised attitude scale. It is a Likert type of scale, which contains statements for which the respondents, by giving answers, express their degree of agreement and/or disagreement (starting from 1 which denotes a complete disagreement with the content of the statement, to 5, denoting a full agreement with the content of the statement).

The questionnaire that measures attitudes of scientists regarding their job satisfaction was distributed via electronic mail. It was presented in the form of a Web application, which contributed to the efficiency of responding, and answers were provided in a short period of time. Automatic update of database was carried out after completing the questionnaire.

### Research Hypothesis

According to the research objective, the hypothesis was formulated as follows: "There is a difference in the expression of job satisfaction in scientific workers in relation to the scientific fields."

## RESULTS

Applying the method of variance analysis with respect to the independent variable *the scientific field*, it has been found that there are differences in the attitudes of scientific workers towards job satisfaction. The further analysis presents results based on the respondents' answers to the questionnaire items.

*- My job allows me professional advancement.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	4.47	0.043
HUMANITIES	4.20	
TECHNICAL AND TECHNOLOGICAL	4.38	
MEDICAL	3.94	
SCIENCE AND MATHEMATICS	4.18	

When asked "*My job allows me professional advancement*", the interviewed scientific workers in all of examined scientific fields exhibited a relatively high level of satisfaction with the possibility of professional advancement. Slightly lower level of satisfaction was observed only in the scientific workers in the field of medical sciences.

### Hipoteze istraživanja

U skladu sa problemom istraživanja, formulisana je i hipoteza koja glasi: "Postoji razlika u izražavanju zadovoljstva poslom naučnih radnika u odnosu na naučne oblasti".

### REZULTATI

Primenom metode analize varijanse u odnosu na nezavisnu varijablu – naučne oblasti, došlo se do rezultata koji ukazuju da postoje sledeće razlike u stavovima naučnih radnika prema zadovoljstvu poslom.

U daljoj analizi biće predstavljeni rezultati na osnovu odgovora ispitanika na pitanja iz upitnika.

*-Posao mi omogućava stručno napredovanje*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	4.47	0.043
HUMANISTIČKE	4.20	
TEH.-TEHNOLOŠKE	4.38	
MEDICINSKE	3.94	
PRIR- MATEMATIČKE	4.18	

Na pitanje „*Posao mi omogućava stručno napredovanje*“, ispitanici naučni radnici iz svih ispitanih oblasti nauke ispoljili su relativno visok stepen zadovoljstva mogućnošću stručnog napredovanja. Nešto niži stepen zadovoljstva zapažen je jedino kod naučnih radnika iz oblasti medicinskih nauka.

*-Smatram da sam adekvatno nagrađen za posao koji obavljam*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	3.35	0.000
HUMANISTIČKE	2.64	
TEH.-TEHNOLOŠKE	3.07	
MEDICINSKE	2.37	
PRIR - MATEMATIČKE	2.37	

Na pitanje „*Smatram da sam adekvatno nagrađen za posao koji obavljam*“, naučni radnici iz oblasti medicinskih nauka izrazili su najniži nivo zadovoljstva u odnosu na naučne radnike iz ostalih naučnih oblasti. Zatim slede naučni radnici iz oblasti humanističkih i prirodnih nauka. Naučni radnici iz oblasti društvenih nauka, izrazili su nešto viši stepen zadovoljstva.



*- I think I am adequately rewarded for the work I do.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	3.35	0.000
HUMANITIES	2.64	
TECHNICAL AND TECHNOLOGICAL	3.07	
MEDICAL	2.37	
SCIENCE AND MATHEMATICS	2.37	

When asked "*I think I am adequately rewarded for the work I do*", the scientific workers in the field of medical sciences exhibited the lowest level of satisfaction in comparison to the scientific workers in the other scientific fields. They were followed by the scientific workers in the field of humanities and natural sciences. The scientific workers in the field of social sciences expressed a higher level of satisfaction.

*- When I do a good job, I get proper recognition.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	3.35	0.000
HUMANITIES	2.64	
TECHNICAL AND TECHNOLOGICAL	3.07	
MEDICAL	2.37	
SCIENCE AND MATHEMATICS	2.37	

When asked "*When I do a good job, I get proper recognition*", there was noticed even lower level of satisfaction of the scientific workers. In this regard, the dissatisfaction is the most expressed in the scientific workers in the field of medical sciences, then in the humanities, and science and mathematics. The scientific workers in the field of technical-technological sciences expressed a higher level of satisfaction.

*- I believe that those who are doing their job well have a better opportunity to be promoted.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	2.70	0.000
HUMANITIES	2.60	
TECHNICAL AND TECHNOLOGICAL	3.07	
MEDICAL	2.24	
SCIENCE AND MATHEMATICS	2.61	

*-Kada dobro uradim posao, dobijam odgovarajuće priznanje*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	2.70	0.000
HUMANISTIČKE	2.60	
TEH.-TEHNOLOŠKE	3.07	
MEDICINSKE	2.24	
PRIR- MATEMATIČKE	2.61	

Na pitanje „Kada dobro uradim posao, dobijam odgovarajuće priznanje“, uočava se još niži stepen zadovoljstva naučnih radnika. I u ovom pogledu je nezadovoljstvo najizrazitije kod naučnih radnika iz oblasti medicinskih nauka, a potom iz humanističkih i prirodno-matematičkih. Naučni radnici iz oblasti tehničko-tehnoloških nauka, izrazili su nešto viši stepen zadovoljstva.

*-Smatram da oni koji dobro rade svoj posao imaju bolju mogućnost da budu promovisani*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	3.10	0.002
HUMANISTIČKE	2.60	
TEH.-TEHNOLOŠKE	3.35	
MEDICINSKE	2.67	
PRIR - MATEMATIČKE	3.06	

Na pitanje „Smatram da oni koji dobro rade svoj posao imaju bolju mogućnost da budu promovisani“, dobijeni su odgovori u kojima se zadovoljstvo kreće od srednje do relativno niskog. Najniži stepen zadovoljstva je kod ispitanih naučnih radnika iz oblasti humanističkih i medicinskih nauka. Kod naučnih radnika iz oblasti humanističkih nauka nizak stepen zadovoljstva bio je očekivan, s obzirom na tradicionalno društveno vrednovanje ove grupe intelektualnih radnika, dok je kod medicinskih radnika nizak stepen zadovoljstva rezultat razlike između samopercepcije visokog statusa vlastite profesije i realnih nagrada od strane društva.

*-Fakultet mi omogućava da svoje znanje predstavim u inostranstvu*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	3.02	0.001
HUMANISTIČKE	2.52	
TEH.-TEHNOLOŠKE	3.13	
MEDICINSKE	2.41	
PRIR - MATEMATIČKE	3.36	

When asked “***I believe that those who are doing their job well have a better opportunity to be promoted***”, there were obtained responses in which the level of satisfaction ranges from medium to rather low. The lowest level of satisfaction among the examined scientific workers was in the field of humanities and medical sciences. The scientific workers in the field of humanities were expected to express the low level of satisfaction, due to the traditional social evaluation of this group of intellectual workers, while the low level of satisfaction in the medical workers was a result of differences between the self-perception of a high status of the profession, and a real reward provided by the society.

- *Higher education allows me to present my knowledge abroad.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	3.10	0.002
HUMANITIES	2.60	
TECHNICAL AND TECHNOLOGICAL	3.35	
MEDICAL	2.67	
SCIENCE AND MATHEMATICS	3.06	

When asked “***Higher education allows me to present my knowledge abroad***”, the lowest satisfaction was expressed in the field of medical sciences and humanities, although it was not high in the other fields as well.

-*I think that the Bologna Declaration enables me to better present my knowledge.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	3.02	0.001
HUMANITIES	2.52	
TECHNICAL AND TECHNOLOGICAL	3.13	
MEDICAL	2.41	
SCIENCE AND MATHEMATICS	3.36	

When asked “***I think that the Bologna Declaration enables me to better present my knowledge***”, the scientific workers exhibited a medium level of satisfaction. The highest level of satisfaction was expressed by the scientific workers in the field of social and medical sciences. Interestingly, the least satisfied were the scientific workers in the field of technical and technological sciences, and natural sciences and mathematics. This finding is interesting for further research, which would more accurately determine the factors of observed differences.

Na pitanje „*Fakultet mi omogućava da svoje znanje predstavim u inostranstvu*“, najniže zadovoljstvo je u oblasti medicinskih i humanističkih nauka, premda i u drugim oblastima nije visoko.

*-Smatram da Bolonjska deklaracija daje mogućnosti da bolje predstavim svoje znanje*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	3.40	0.008
HUMANISTIČKE	3.08	
TEH.-TEHNOLOŠKE	2.81	
MEDICINSKE	3.20	
PRIR - MATEMATIČKE	2.90	

Na pitanje „*Smatram da Bolonjska deklaracija daje mogućnosti da bolje predstavim svoje znanje*“, naučni radnici su izrazili srednji stepen zadovoljstva. Najveće zadovoljstvo pokazali su naučni radnici u oblasti društvenih i medicinskih nauka. Interesantno je da su najmanje zadovoljni naučnici iz oblasti tehničko-tehnoloških i prirodno-matematičkih nauka. Ovaj nalaz je interesantan za dalja istraživanja, u kojima bi bili na precizniji način utvrđeni faktori uočenih razlika.

*-Smatram da će mi Bolonjska deklaracija pružiti više mogućnosti za napredovanje*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	2.88	0.031
HUMANISTIČKE	3.04	
TEH.-TEHNOLOŠKE	2.73	
MEDICINSKE	3.13	
PRIR - MATEMATIČKE	2.49	

Kao i u slučaju prethodne varijable, i kod stepena zadovoljstva uticaja Bolonjske deklaracije na povećanje mogućnosti za bolje predstavljanje vlastitog znanja, naučni radnici u oblasti prirodno-matematičkih i tehničko-tehnoloških oblasti su najmanje zadovoljni. U ovom istraživanju nisu prikupljeni podaci kojima bismo objasnili faktore koji su determinisali ispoljeno nezadovoljstvo.

*-I believe that the Bologna Declaration will provide more opportunities for my advancement.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	3.40	0.008
HUMANITIES	3.08	
TECHNICAL AND TECHNOLOGICAL	2.81	
MEDICAL	3.20	
SCIENCE AND MATHEMATICS	2.90	

As in the case of the previous variable, the scientific workers in the field of natural sciences and mathematics, and technical and technological field, are the least satisfied, concerning the level of satisfaction with the impact of the Bologna Declaration on the increased opportunities for a better representation of their own knowledge. This research did not collect data that would explain the factors which determined manifested dissatisfaction.

*-Due to the importance of collecting points, I rather choose the papers that are higher graded instead of those which I would like to be published.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	2.88	0.031
HUMANITIES	3.04	
TECHNICAL AND TECHNOLOGICAL	2.73	
MEDICAL	3.13	
SCIENCE AND MATHEMATICS	2.49	

When asked ***“Due to the importance of collecting points, I rather choose the papers that are higher graded instead of those which I would like to be published”***, the scientific workers expressed an medium level of satisfaction. Interestingly, the scientists in the field of humanities exhibited the lowest level of interest in the publication of such papers, unlike the scientists in the field of medical sciences, who expressed the highest level of interest.

*-Students are not competent to evaluate my work.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	3.13	0.002
HUMANITIES	2.36	
TECHNICAL AND TECHNOLOGICAL	3.31	
MEDICAL	3.50	
SCIENCE AND MATHEMATICS	3.48	

*-Zbog važnosti skupljanja bodova, odlučujem se za one radove koji su više bodovani a ne za one koje želim.*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	3.13	0.002
HUMANISTIČKE	2.36	
TEH.-TEHNOLOŠKE	3.31	
MEDICINSKE	3.50	
PRIR - MATEMATIČKE	3.48	

Na pitanje „*Zbog važnosti skupljanja bodova, odlučujem se za one radove koji su više bodovani a ne za one koje želim*“, naučni radnici ispoljili su srednji stepen zadovoljstva. Interesantno je da su naučnici u oblasti humanističkih nauka ispoljili najniži stepen zainteresovanosti za objavljivanje ovakvih radova, a naučnici iz medicinskih nauka najviši stepen.

*-Studenti nisu kompetentni da ocenjuju moj rad*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	2.87	0.013
HUMANISTIČKE	2.60	
TEH.-TEHNOLOŠKE	2.51	
MEDICINSKE	3.09	
PRIR - MATEMATIČKE	2.37	

Na pitanje „*Studenti nisu kompetentni da ocenjuju moj rad*“, naučni radnici iz svih naučnih oblasti smatraju da studenti nisu kompetentni da ocenjuju njihov rad. Interesantno je da su naučni radnici iz oblasti medicinskih nauka, pokazali nešto veću spremnost za ocenjivanje njihovog rada od strane studenata, a naučni radnici iz prirodno-matematičke oblasti najmanju spremnost.

*-Smatram da znanje koje prenosim ima praktičnu vrednost*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	4.42	0.000
HUMANISTIČKE	4.28	
TEH.-TEHNOLOŠKE	4.53	
MEDICINSKE	4.50	
PRIR - MATEMATIČKE	3.94	

Na pitanje „*Smatram da znanje koje prenosim ima praktičnu vrednost*“, naučni radnici u visokom stepenu procenjuju da znanja koja oni prenose

When asked “***Students are not competent to evaluate my work***”, scientific workers in all the scientific fields considered that students were not competent to evaluate their work. Interestingly, the scientific workers in the field of medical sciences showed a slightly greater readiness for the evaluation of their work by students, unlike the scientific workers in the field of natural sciences and mathematic, who showed the least readiness.

*-I believe that the knowledge I convey has a practical value.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	2.87	0.013
HUMANITIES	2.60	
TECHNICAL AND TECHNOLOGICAL	2.51	
MEDICAL	3.09	
SCIENCE AND MATHEMATICS	2.37	

When asked “***I believe that the knowledge I convey has a practical value***”, the scientific workers assessed to a high degree that knowledge which they conveyed had a practical value. The exception was somewhat lower evaluation of this variable in the scientific workers in the field of natural sciences and mathematics.

*-I think that the communication among colleagues from different faculties is good.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	4.42	0.000
HUMANITIES	4.28	
TECHNICAL AND TECHNOLOGICAL	4.53	
MEDICAL	4.50	
SCIENCE AND MATHEMATICS	3.94	

When asked “***I think that the communication among colleagues from different faculties is good***”, the scientific workers evaluated the low possibility of communication with colleagues from different faculties. The scientific workers in the field of humanities were particularly dissatisfied in this respect, probably because they still do not have sufficiently developed interdisciplinary teamwork.

imaju praktičnu vrednost. Izuzetak je nešto niže vrednovanje ove varijable kod naučnih radnika iz oblasti prirodno-matematičkih nauka.

*-Smatram da je komunikacija među kolegama sa različitih fakulteta dobra*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	2.85	0.000
HUMANISTIČKE	2.00	
TEH.-TEHNOLOŠKE	3.45	
MEDICINSKE	2.98	
PRIR - .MATEMATIČKE	3.31	

Na pitanje „Smatram da je komunikacija među kolegama sa različitih fakulteta dobra“, naučni radnici su nisko vrednovali mogućnost komunikacije sa kolegama sa različitih fakulteta. Naročito su u tom pogledu nezadovoljni naučnici iz oblasti humanističkih nauka, verovatno zbog toga što kod njih još uvek nije u dovoljnoj meri razvijen interdisciplinarni timski rad.

*-Smatram da je komunikacija naučnih radnika sa drugim državnim institucijama dobra*

NAUČNE OBLASTI	Aritmetička sredina ( $\bar{x}$ )	ANOVA
DRUŠTVENE	2.77	0.000
HUMANISTIČKE	2.24	
TEH.-TEHNOLOŠKE	3.15	
MEDICINSKE	2.48	
PRIR - MATEMATIČKE	3.07	

Na pitanje „Smatram da je komunikacija naučnih radnika sa drugim državnim institucijama dobra“, naučni radnici iz svih naučnih oblasti pokazuju nizak stepen zadovoljstva. Najniži stepen zadovoljstva je kod naučnih radnika iz oblasti humanističkih nauka. Komunikacija naučnih radnika sa drugim državnim institucijama u okviru obrazovanja i nauke nije organizovana na način koji olakšava i dinamizuje saradnju, što je iskazano kroz nizak stepen zadovoljstva ispitane grupe naučnih radnika.

## ZAKLJUČAK

Analizirajući prethodno izložene rezultate možemo doći do zaključka da postoje razlike u izražavanju zadovoljstva poslom kod naučnih radnika iz različitih naučnih oblasti, na nekim aspektima posla.

Naučni radnici iz oblasti društvenih nauka zadovoljni su u pogledu stručnog napredovanja i socijalnog statusa (usavršavanje, dobijanje priznanja, promovisanost). Međutim, nisu u potpunosti zadovoljni materijalnim na-



*-I think that communication of the scientific workers with the other state institutions is good.*

SCIENTIFIC FIELDS	Arithmetic mean ( $\bar{x}$ )	ANOVA
SOCIAL	2.85	0.000
HUMANITIES	2.00	
TECHNICAL AND TECHNOLOGICAL	3.45	
MEDICAL	2.98	
SCIENCE AND MATHEMATICS	3.31	

When asked "***I think that communication of the scientific workers with the other state institutions is good***", the scientific workers in all the scientific fields exhibited a low level of satisfaction. The scientific workers in the field of humanities had the lowest level of satisfaction in this regard. Communication of the scientific workers with the other state institutions dealing with education was organized in a way which cooperation easier and more dynamic, what was expressed in the low level of satisfaction of the interviewed group of scientific workers.

## CONCLUSION

Analyzing the previously presented results, it can be concluded that there are differences in the expression of job satisfaction among the scientific workers in different scientific fields, within some aspects of their work.

The scientific workers in the field of social sciences are satisfied in terms of professional advancement and social status (advanced training, recognition, promotion). However, they are not completely satisfied with material rewards for their work. Also, they are not satisfied with the opportunities provided by the faculty to present their knowledge abroad. They believe that the processes of the Bologna Declaration will help them to present their knowledge in a better way, but they do not expect to have more opportunities for promotion. They think that the knowledge which they convey has a practical value. They find that students are not competent to evaluate their work. Due to the nature of (individual) work, the scientific workers in these fields are not exclusively oriented to the papers that enable the collection of points according to the Bologna Declaration. These scientific workers have demonstrated a low level of satisfaction with the established communication with colleagues from other faculties and other state institutions in the field of education and science.

The scientific workers in the field of humanities have expressed a high level of dissatisfaction both in terms of remuneration and opportunities for obtaining recognition and promotion, and in terms of conditions for presentation of their knowledge. Also, they do not believe that they could be promoted if they do a good job. They assess that the knowledge which they convey to students

gradama za svoj rad. Takođe nisu zadovoljni mogućnostima koje im fakultet pruža da svoje znanje predstave u inostranstvu. Veruju da će im procesi Bolonjske deklaracije pomoći da bolje predstave svoje znanje, ali ne očekuju da će imati više mogućnosti za napredovanje. Ocenjuju da znanje koje prenose studentima ima praktičnu vrednost. Smatraju da studenti nisu kompetentni da ocenjuju njihov rad. Zbog karaktera (individualnog) rada naučni radnici iz ovih oblasti nisu isključivo orjentisani na radove koji omogućuju skupljanje bodova po Bolonjskoj deklaraciji. Ovi naučni radnici su pokazali nizak stepen zadovoljstva ostvarenom komunikacijom sa kolegama sa drugih fakulteta i drugim državnim institucijama u okviru obrazovanja i nauke

Naučni radnici u oblasti humanističkih nauka iskazali su visok stepen nezadovoljstva u pogledu nagrađivanja i dobijanja mogućnosti za priznanja i napredovanja, i u pogledu uslova da svoje znanje predstave. Takođe ne veruju, da ako budu dobro radili svoj posao, mogu biti promovisani. Procenjuju da znanje koje prenose studentima ima praktičnu vrednost. Naučni radnici su nezadovoljni komunikacijom sa kolegama sa drugih fakulteta u zemlji i inostranstvu, naravno i sa drugim državnim institucijama u okviru obrazovanja i nauke. Pokazuju srednji stepen zadovoljstva procesima Bolonjske deklaracije i u njima vide mogućnost za napredovanje i bolje predstavljanje svog znanja. Ne vrednuju visoko kompetentnost studenata da ocenjuju njihov rad.

U ovom istraživanju, naučni radnici iz oblasti tehničko-tehnoloških nauka iskazali su visok stepen zadovoljstva mogućnostima stručnog napredovanja u poslu i smatraju da znanje koje prenose studentima ima praktičnu vrednost, što ukazuje da ovi naučni radnici imaju visok nivo samoaktualizacije ili samoostvarenja. Prihvataju sebe kao jedinstvene ličnosti i usklađuju egzistenciju sa datom realnošću. Otuda proizilazi njihovo relativno zadovoljstvo u pogledu materijalnih nagrada i priznanja za dobro obavljen posao, predstavljanja sopstvenog znanja u inostranstvu, komunikacijom sa kolegama i sa drugim državnim institucijama u okviru obrazovanja i nauke. Ono što se posebno izdvojilo je negativan stav naučnih radnika prema procesima Bolonjske deklaracije. Sumnjaju da će im ovi procesi doprineti da bolje predstave svoje znanje. Nisu spremni da studenti ocenjuju njihov rad, jer smatraju da studenti nisu kompetentni za to.

Naučni radnici iz oblasti medicinskih nauka su iskazali visoko negativne stavove prema zadovoljstvu u poslu u odnosu na naučne radnike iz drugih naučnih oblasti. Ovi naučni radnici su izrazili visoki stepen nezadovoljstva organizacijskom strukturom fakulteta, nisu zadovoljni nagrađivanjem i to u odnosu na dve komponente - nagrađivanje kroz materijalni deo (plata) i nagrađivanje kroz socijalni status (napredak, usavršavanje, priznanje, moć).

has a practical value. The scientific workers are satisfied neither with communication with their colleagues from the other faculties in the country and abroad, nor with the other state institutions in the field of education and science. They express a medium level of satisfaction with the processes of the Bologna Declaration, seeing in them an opportunity for advancement and better presentation of their knowledge. They do not highly value the competence of students to evaluate their work.

In this research, the scientific workers in the field of technical and technological sciences have expressed a high level of satisfaction with the opportunities for professional advancement in their work. They think that the knowledge which they convey to students has a practical value, which indicates that these scientific workers have a high level of self-actualization or self-realization. They accept themselves as unique personalities aligning their existence with the given reality. Hence there arises their relative level of satisfaction with material rewards and recognitions for a well-done job, presentations of their own knowledge abroad, communication with colleagues and other state institutions in the field of education and science. What is particularly noticed as a negative attitude of the scientific workers is an attitude towards the processes of the Bologna Declaration. They suspect that these processes will contribute to a better presentation of their knowledge. They are not ready for students to evaluate their work, because they believe that students are not competent for that.

The scientific workers in the field of medical sciences express highly negative attitudes towards job satisfaction in relation to the scientific workers in other scientific fields. These scientific workers have expressed a high level of dissatisfaction with the organizational structure of the faculty, they are not satisfied with rewarding concerning the two components - rewarding through financing (wages), and rewarding through the social status (progress, advancement, recognition, power). They are not satisfied with their communication with colleagues from the other faculties both in the country and abroad, and they have poor communication with the other state institutions in the field of education and science. They see an opportunity to improve their position, and thus have a higher level of job satisfaction, in the implementation processes of the Bologna Declaration. Due to the importance of counting points, they are ready to opt for the papers that are scored more. They believe that the knowledge which they convey has a practical value, and that the processes of the Bologna Declaration will allow them to better present their knowledge, what will facilitate them to have more opportunities for promotion. They are ready for students to evaluate their work, and they believe that the students are competent to do so.

The scientific workers in the field of sciences and mathematics have expressed a high level of satisfaction with opportunities for professional advancement.

Nisu zadovoljni komunikacijom sa kolegama sa drugih fakulteta kako u zemlji tako i u inostranstvu, i imaju lošu komunikaciju sa drugim državnim institucijama u okviru obrazovanja i nauke. Mogućnost za poboljšanje svog položaja, i time veći stepen zadovoljstva poslom, vide u procesima primene Bolonjske deklaracije. Spremni su da se zbog važnosti skupljanja bodova odlučuju za one radove koji su više bodovani. Veruju da znanje koje prenose ima praktičnu vrednost i da će im procesi Bolonjske deklaracije omogućiti da bolje predstavljaju svoje znanje i da će time imati više mogućnosti za napredovanje. Spremni su da studenti ocenjuju njihov rad i veruju da su studenti kompetentni za to.

Naučni radnici iz oblasti prirodno-matematičkih nauka iskazali su visok stepen zadovoljstva mogućnostima stručnog napredovanja i procenjuju da znanja koja prenose imaju visok stepen praktične primenljivosti. U pogledu mogućnosti koje im fakultet pruža da predstavljaju svoje znanje u inostranstvu, saradnje i komunikacije sa kolegama sa drugih fakulteta, kako u zemlji tako i u inostranstvu, kao i saradnje sa državnim institucijama u okviru obrazovanja i nauke, ispoljili su srednji stepen zadovoljstva. Zajedno sa naučnim radnicima iz oblasti tehničko-tehnoloških nauka, ova grupa naučnih radnika je pokazala najmanji stepen zadovoljstva procesima Bolonjske deklaracije i procenjuju da neće imati veće mogućnosti za napredovanje i predstavljanje svog znanja kroz te procese. Takođe je njihova procena kompetentnosti studenata da ocenjuju njihov rad najniža u poređenju sa naučnim radnicima iz drugih oblasti nauka.

Jedno od objašnjenja za dobijene razlike u stepenu zadovoljstva poslom kod naučnih radnika iz različitih naučnih oblasti na aspektu zadovoljstva platom i beneficijama jeste neravnomerna raspodela sopstvenih sredstava koja se razlikuje od fakulteta do fakulteta. Neki fakulteti imaju mogućnost da ostvare sopstvena sredstva kroz posao sa institucijama izvan univerziteta i mogu samostalno da ih raspoređuju, dok neki drugi fakulteti nemaju tu mogućnost. Ta nejednakost je izvor dugotrajnih tenzija između fakulteta.

They assess that the knowledge which they convey has a high level of practical applicability. In terms of the opportunities offered by the faculty to present their knowledge abroad, cooperate and communicate with colleagues from the other faculties, both in the country and abroad, as well as to cooperate with the state institutions in the field of education and science, they have expressed a medium level of satisfaction. Together with the scientific workers in the field of technical and technological sciences, this group of scientific workers has expressed the lowest level of satisfaction with the processes of the Bologna Declaration, estimating that they would not have more opportunities for promotion and presentation of their knowledge through these processes. Their assessment of the students' competence to evaluate their work was the lowest in comparison to the scientific workers in the other scientific fields.

A justification for the obtained differences in the level of job satisfaction among the scientific workers in different scientific fields, including the aspect of satisfaction with the salary and benefits, is an uneven distribution of their own funds, which varies from faculty to faculty. Some faculties have the opportunity to obtain their own funds by working with institutions outside the university, and distribute them independently, while some other faculties do not have this option. The inequality is a source of long-standing tensions among the faculties.

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