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Revija za
Journal of

U

univerzalno
Universal

O

odličnost
Excellence

Marec 2016
Letnik V, številka 1
ISSN 2232-5204



Fakulteta za
organizacijske študije
Faculty of organisation studies

ISSN 2232-5204.

Izdajatelj: Fakulteta za organizacijske študije v Novem mestu.

Glavni in odgovorni urednik: Boris Bukovec.

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Izid publikacije je finančno podprla ARRS iz naslova razpisa za sofinanciranje domačih znanstvenih periodičnih publikacij.

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Ageing in Place Driving Urban Transformations^{**}

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Abstract:

Research question: This article provides an answer to the question: What kind of housing do the seniors in Slovenia prefer after a substantial decrease of their functional capacities, i.e. when they already need long-term care services?

Purpose: During the study, the seniors participating in the study were still able to live in their current dwelling – in the home where they lived for years together with their family or alone; but because of a substantial decrease of their functional capacities they had become aware that it would be difficult to continue to stay there. We wanted to know where they would like to migrate or move to when needed, and what kind of housing should be provided on the housing market for these cohorts.

Method: After our study of the relevant European and American literature we found that the construction of housing for seniors can be developed in different types of structures and that there is a substantial gap between the needs and the availabilities of housing arrangements in Slovenia, which also increases the rigidity of the Slovenian housing market and reduces land rent in comparison with USA and Western Europe. Seniors using long-term care services provided by municipalities in their own homes, living outside the main Slovenian central places, were included in the survey. To identify the preferred structure of the built environment for seniors we organised 3 groups of interviews with assisted living inhabitants from three Slovenian municipalities and evaluated the percentages of each desired type of housing and care.

Results: The results show that more than half of Slovenian seniors do not have the possibility to move to retirement villages or other better adapted homes in assisted living housing units, where they could protect their dignity and independence better than in institutional care in nursing homes.

Local administration and society: These findings refer to the local administration initiative to (a) built proper housing units for seniors with decreasing functional capacities themselves, or (b) to initiate investments in local areas that would, in turn, attract private investments in proper and affordable housing for seniors.

Novelty: This study is the first of its kind in Slovenia while its results provide better insight into what matters most to Slovenian seniors regarding their housing arrangements.

Further extension: The study could give different results in the case of metropolitan areas, e.g. for the case of Ljubljana.

Keywords: housing for seniors, assisted living housing facilities, ageing in place, homecare.

1 Introduction

Across Europe, communities need to respond to the unprecedented growth among their seniors. By the year 2060 adults aged 65 and older will comprise nearly one third of the EU population. In Slovenia the projections are similar. Although concentrations of community-dwelling older adults vary by region and Member States, the projected increase of older cohorts in the structure of European inhabitants is significant everywhere. As Debra Dobbs pointed out in her presentation in Portorož, based on her research project developed at the School of Aging Studies, University of South Florida (Black & Dobbs, 2013; Ros McDonnell, Bogataj, Kavšek, 2015, pp. 40–56), the consequences of societal aging will impact all domains of life and the broader infrastructure in which persons of all ages interact, in USA, Europe, and particularly in Slovenia. We agree with her that both in USA and Europe recent evidence suggests that communities are woefully underprepared to respond to this imperative.

Ageing and the general demographic decline of European population should be considered, and statistics of seniors' housing needs and opportunities have to be recorded. Such statistics could provide good information bases for decisions on investments in housing and other facilities for European citizens whose demographic structure is changing rapidly (see Table 1).

Table 1: Europe: population by age

	in 1000					in % of total population				
	1950	1970	1995	2025	2050	1950	1970	1995	2025	2050
Age 0-14	143,175	166,367	139,464	103,212	90,430	26.2	25.3	19.2	14.7	14.4
Age 15-64	359,162	421,432	487,110	451,599	364,277	65.6	64.2	66.9	64.3	58.0
Age 65+	44,981	68,642	101,338	147,524	172,985	8.2	10.5	13.9	21.0	27.6
Age 75+	14,553	22,762	38,139	63,663	91,343	2.7	3.5	5.2	9.1	14.6
Total	547,318	656,441	727,912	702,335	627,691	100.0	100.0	100.0	100.0	100.0

Source: http://www.iiasa.ac.at/Research/ERD/DB/data/hum/dem/dem_2.htm

Namely, in the next 35 years the number of children under the age of 15 will decline to 75% of this cohort in 1995, the number of people aged 65 and older in EU is expected to almost double, and the number of people aged 75 and older is projected to triple by mid-century. The described processes are changing the housing market and require a new form of housing provision. These processes and requirements are influencing the supply and demand of housing units and therefore the market value of real estate and rentals in urban areas. The question is, what kind of housing do the seniors in Slovenia prefer after a substantial decline of their functional capacities, i.e. when they already need long-term care services but are still able to live in their current dwellings – in the home where they lived for years together with their families or alone, while they are aware that they need to adopt their home to their functional capacities or to move to a more appropriate home to protect their independence and dignity. They understand that otherwise they will need to relocate to institutional care soon.

The building stock in Europe today is not fit to support the shift from institutional care to the home-based independent living model. Because of the accessibility barriers for people with emerging functional impairments, more than 70% of houses in the UK and 90% in Germany, for example, are not suitable for independent living for people with emerging functional impairments and chronic diseases, and are not equipped with the necessary digital infrastructure required for future connected care services (EC, 2015c). The same report estimates that only in Germany the needs of adapting the current housing stock to be appropriate for seniors with emerging functional impairments exceed 2.5 million of age-friendly houses. Therefore this article will enhance our understanding of older adults' perspectives about what matters most regarding housing arrangements when their functional capacities are decreasing in Slovenia.

How best to finance living conditions, the housing of elderly and long-term care have become highly topical issues in recent years (Ros McDonnell, Bogataj, Kavšek, 2015). The key issue in the financing debate is how far should people fund their own living and extra lodging expenses and how far they should be publicly funded. To respond to this challenge, the Commission and Member States set out a number of recommendations and acts (EC, 2010, 2012, 2015a, 2015b; EIOPA, 2012), but not much has been done on the question of how to support the changes of urban structures which are influenced by population aging. In order to maintain a vital society in a vital town of inhabitants, it is necessary to develop new economic and social conditions and a new kind of facility management in European urban areas. In this context we have to know what the European and particularly Slovenian seniors prefer most regarding their housing. The investigations show that the preferences between North Europe and South Europe differ (DEMHOW, 2013), while there are big differences in the availability of choices between Western and Eastern Europeans because of extremely limited funds for seniors in Eastern European Countries (EC, 2015b).

In their recently published papers, Black and Dobbs (2013) reported on community-dwelling older adults' perspectives regarding what matters most to seniors in USA. In the findings from an exploratory inquiry they concluded that the most important is their dignity and privacy. As they ranked the requirements of seniors, they wrote that communities across the USA, who are grappling with unprecedented increases among their older cohorts, and bracing for even greater growth in the decades ahead are faced with five key themes of what matters most: (1) Preserving and promoting health and well-being; (2) Continuing living arrangement and lifestyle; (3) Maintaining autonomy and independence; (4) Engaging in meaningful social opportunities; and (5) Accommodating community assets. But their dignity and independence is on top of all requirements. In their second paper, based on a qualitative inquiry, published in *Ageing & Society* (Black & Dobbs, 2013), they analysed in detail the perceptions of dignity from its core meaning to support, challenges, and opportunities. The properly arranged housing and facilities for seniors support their privacy and dignity, and moving to institutional care in nursing homes could reduce it. We know that nursing homes with the regime there, strict schedules and crowded rooms do not offer that privacy and not always

protect their dignity. Also Marta Kavšek in her study (2012) clearly presented that dignity and privacy matters most also to the seniors in Slovenia.

2 Various directions to the metamorphosis of towns

2.1 Differentiated housing needs for seniors

Housing needs of the aged are satisfied if the housing is specifically designed to meet their physical, emotional, recreational, medical, and social needs. In the European Union, Member States are responsible for planning, funding, and administration of social protection systems for the ageing population. In supporting Member States in their reform efforts, the Union recommends three long-term objectives, which should be pursued in parallel: (a) Ensure good access to health care and social services, while better urban infrastructure for these services is needed, (b) Improve the quality of care, while networks of this care need to be constructed in an optimal way, (c) Ensure the sustainability of financing. In this context we also need better local and national statistics (Council of the European Union, Social Protection Committee, 2014). As Sabrina Stula (2012) wrote in *Observatory for Socio-political Developments in Europe*: “These processes change the housing market and require new forms of housing to be developed. This is because the majority of the elderly people want to remain in their familiar environment and to live as independently as possible – even in the case when they need assistance and care. As older people spend more time in their homes with increasing age and health limitations, the age appropriateness (location, furnishing) of the living situation and age-appropriate design of the residential environment are the key to maintaining independence and quality of life”.

The primary interest of seniors is to continue to live independently in their community as long as possible, preferably in their own homes. The older people get, the smaller their household becomes. Their own homes become too big and too energy consuming. When they retire, they work less, and less work results in more leisure time. They are looking for amenities which are available in towns but have not been frequently used during their employment. Ageing after the age of 60 goes hand in hand with the declining mobility of residents, while health problems are increasing. After the age of 70 or 80, citizens are willing to use an increasingly smaller action radius and they are more dependent on public transport. The built environment in towns is placing barriers on the ageing population, having functional limitations. When nearly one third of housing stock needs to be transformed to homes and facilities for services for the elderly, substantial financial resources are needed for this metamorphosis of towns. There could be two main directions of design: (a) segregation of seniors in senior cities and (b) universality of cities including adaptability of central places and suburbs. Both directions require substantial financial resources.

2.2 Ensuring infrastructure and services in towns

In the near future the number of those needing some kind of services for seniors will at least triple. The needs will vary also according to age cohorts. There will be a range of more or less dependent persons who will need help with basic activities of daily living, caused by physical

or mental disability, but who will be still able to live in their own homes if suitable care and assistance will be provided in their homes and if the buildings in which they live will be universal and adaptable to people with impaired mobility. Universal buildings are such that are appropriate for a wide range of people with or without impaired mobility. Long-term care, as a combination of health care and social care provided to persons with physical or mental handicaps, requires the development of different new private and public organisations of health care and social care, mostly on the municipality level. Careful introduction of universality and adaptability in cities and towns will allow for a greater mobility of the elderly that will enable them to stay in their homes longer and postpone reallocation to institutional long-term care facilities. Therefore a new approach to spatial planning should be considered and new financial services should be introduced to cope with these tasks, especially because there is a significant lack of appropriately built non-profit rental units. Therefore there is an increased need of universality and adaptability of infrastructure as well as special housing for the elderly. The United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities (United Nations, 1993) provide the directions according to which architects in member states should design houses and the urban environment for integration of elderly people and people with functional limitations to attain equal opportunities also for retired ageing cohorts. The guidelines with blueprint for safe and functional environment are provided addressing the needs of people with physical limitations. These guidelines for design require: (a) Equitable use where the design is useful and marketable to people with diverse abilities; (b) Flexibility in use so that the design accommodates a wide range of individual preferences and abilities; (c) Simple and easy understandable use, regardless of the user's experience, knowledge, language skills or current concentration level; (d) Perceptible information regardless of ambient conditions or the user's sensory abilities; Minimisation of hazards and the adverse consequences of accidental or unintended actions; (f) Efficient use with low physical effort, and (g) The appropriate size and space for approach and use regardless of the user's body size and mobility.

The standards for the benefit of people with mobility limitations specify accessible or adaptable design requirements. The universal design approach targets all citizens of all ages. Many limitations in these guidelines are not useful for all people, especially not for those with minor or even no physical limitations.

2.3 Special housing directions for seniors

Assisted housing for the elderly where also less intensive long-term care can be delivered is developing in three distinct directions:

- *Segregation in senior cities* far from the city centre of existing towns: Just a minority of European seniors has a preference for a senior city. Most elderly over the age of 60 do not wish to live among peers at a distance from universal services. The concept of a senior city, in which housing is built for a single age group at a distance from services in the urban area, has not been part of government policy in the European Union so far, though there are some good experiences in USA.

- *Integration in urban society:* The share of the retired population in new construction projects in city centres with all kinds of amenities has increased in Europe in the last decades. Many developers decided to construct expensive, relatively small, high-rise units in city centres. Their target group are seniors, with a relatively high-accumulated wealth. Additional financial resources are needed because of the higher differential rent in city centres (for Ljubljana see Bogataj et al., 2011).
- *Ground-level dwellings outside the city, close to existing homes.* In cooperation with long-term care and social care suppliers, the tendency is to build many relatively inexpensive accessible and small apartments in the centres of smaller towns. Their activities could be regulated by better fiscal policy. A government's role is to allocate building land in cluster areas through means of granting legal permission for building plans. Therefore it is very often the case that clusters of dwellings are built on the outskirts of cities rather than in city centres, where more amenities would be available and the cost of care could be lower due to economy of scale. But the government has also included requirements for the accessibility of housing units, to make these properties more suitable for the disabled. This concerns the requirements for indoor and outdoor accessibility of housing units and their suitability for the provision of care.

For intensive long-term care, the elderly have to move to long-term care facilities. There they receive better support, and medical and social care than previously (in the period of assisted living), but they lose independence and privacy. The more the built environment enables mobility of the elderly and enables social care provision in the period of assisted living in existing residential units, the longer the elderly can keep their independence. This delays relocation to long-term care facilities.

3 The survey on what the seniors included in home-care programmes of the municipalities in Slovenia wish most

To forecast in which direction the construction of the built environment for seniors inside urban areas of Slovenia should evolve, we conducted interviews with seniors who need home care and who still stay at home where they had been living with bigger families years ago from 3 different municipalities (3 groups: one from Savinjska Regions and two from two municipalities in the Southeast Slovenia Region) as to what kind of housing they preferred. The study combined the results from three different samples of respondents: n=51 from the first group, n=18 from the second group, and n=45 from the third group, yielding a total sample of 98. The socio-demographic characteristics of the survey samples are shown in Table 2. The respondents ranged from 42 to 97 years of age and were primarily female (70%), half of them between 76 and 85 years.

All the seniors who participated in the survey receive home care, which is organised by the municipalities. None of them had substantial cognitive problems. The interviews were performed by local nurses face-to-face in confidential discussions, after each participant

consented to participate. The demographic data are given in Table 2. Those with difficulties to respond properly were excluded from the study. Exclusion criteria for participation in the focus groups included: (a) too ill to participate, (b) non-resident, (c) distressed from a recent traumatic event, (d) severe speech or hearing problems that can prevent communication, (e) depressed to the point that an interview could be distressing, (f) communication difficult due to dementia or other mental confusion, or (g) another form of mental disorder. No typing or computer skills were required. The majority of the respondents completed elementary school (60%), 20% completed 3 years of professional education, and 14% completed high school. The respondents represented all socio-economic groups, including 47% of those with pensions between 300 € and 500 €, 26% with the lowest income, i.e. under 300 €, and 6% with medium income between 800 € and 1000 €. Only 1% of the respondents had a high income status of over 1500 €.

Table 2: Basic demographic data

	group 1 N=35 Mean age 78,7	group 2 N=18 Mean age. 79	group 3 N=45 Mean age. 77,8	Total N=98
Sex	%	%	%	%
Male	29	35	29	30
Female	71	65	71	70
Marital status	%	%	%	%
Married	26	33	17	28
Bachelor	20	5	15	15
Widow(er)	46	56	59	49
Divorced	5	6	7	6
Cohabitation	3		2	2
Education	%	%	%	%
Primary school	68	33	67	61
Vocational school	23	17	20	21
High school	9	33	11	14
Higher education		6	2	1
University diploma		11		3
Age	(42 to 97)	(57 to 94)	(42 to 97)	%
51 - 65				11
66 - 75				13
76 - 85				51
86 - 95				23
96 -				2

Because the respondents had been included in a municipal home-care program, the staff from the municipal home-care centre at each setting helped to recruit respondents and arrange the meetings in each senior resident’s home. The surveys were conducted at senior citizens’ homes and each lasted approximately 15 minutes. The informed consent was obtained prior to the interview. The study received approval from the Faculty Ethical Review Board.

For this study we utilized the responses to the question that elicits older adults’ lifestyle, long-term care program, and housing. The open-ended question was: “What type of a housing unit

or facilities would you like to live in when you will no longer be able to live in your own home?”

For the study on the housing needs of seniors, we designed three open-ended questions:

A: “Would a good organization of home care enable you to stay at your home even if your functional capacities decreased?”

B: “Describe the necessary actions needed to stay in the current apartment!”

C: “In what kind of an apartment do you want to move to and what kind of services would you need so that it would not be necessary to go into a nursing home?”

The respondents were encouraged to reflect upon their innermost desires and values. The persons who were interviewing the elderly reminded the respondents to focus on their needs of safety and quality of independent movement, which might not be possible in the domestic environment after a substantial decrease of functional capacities.

4 Results and discussion

Only 63 seniors answered the question whether they would like to go to a nursing home or receive other housing arrangements, if available, when their functional capacities would decrease to the level that they would not be able to stay at their current home. The preferred housing of these three groups is the following (as presented in Figure 1): 44.4% of seniors would like to stay in their old home in any case, they do not see or cannot afford any other solution, 41.3% of reporting seniors would like to go to an assisted living housing unit (note that they do not even know what a retirement village or retirement community is, because such kind of housing does not exist in Slovenia, but they expect that there they will be able to protect their independence and dignity), 12.7% of them would prefer to stay totally independent, i.e. without being included in any community, but would need more services, amenities and ground floor dwelling, and only 1.6% of them would go to a nursing home.

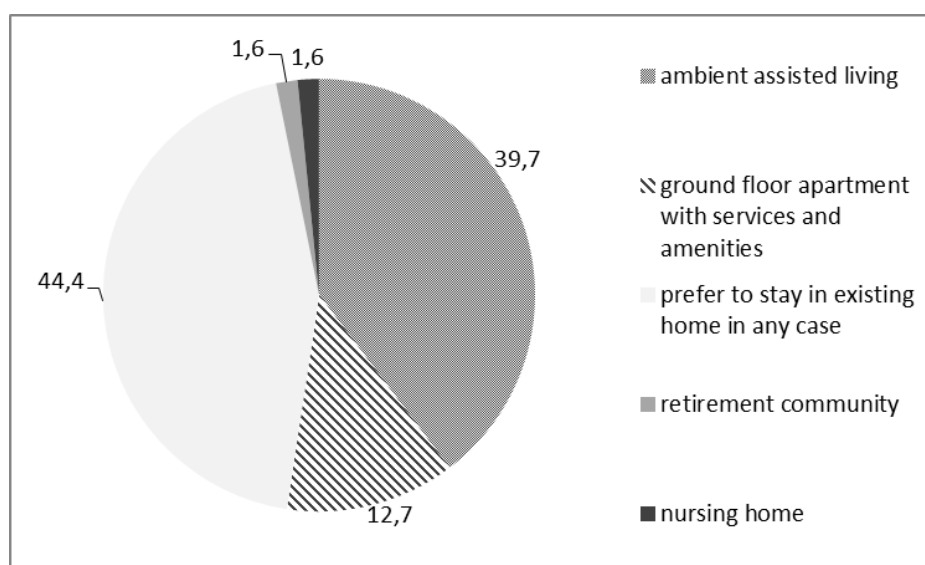


Figure 1. The preferred housing

From this investigation we can conclude that more than 40% of Slovenian seniors would like to move to an assisted living housing unit, or to a more appropriate independent apartment (54% in the sample and $\alpha \cong 0.01$), but the Slovenian housing market does not offer enough possibilities. In general, there is no significant difference in the percentage of those who would like to stay in the existing home and those who would like to move, but not to a nursing home. The percentage of those who would like to move to a nursing home is very low (1.6% in the sample).

For intensive long-term care, the elderly will have to move to long-term care facilities, like a nursing home, and nearly half of seniors will be disappointed at the end of their life if they will not finally recognise that in the nursing home they could receive better support, and medical and social care than in the previous stage (during home care). The more the built environment enables mobility of the elderly and provides social care in the period of home care in existing residential units, the longer the elderly can keep their independence. It delays relocation to long-term care facilities in intensive nursing homes. Therefore, local communities should think about the possibilities to enable the old cohorts to stay at home longer or at least to develop affordable assisted living housing units in the same community. But this manner of servicing seniors is also very expensive both for families and municipality budgets. The costs of services in existing homes are especially high in rural areas, where travel costs increase (Bogataj, Szander and Ros-McDonnell, 2015) and where, even today, local authorities are not able to cover half of travel expenses, as required by law. When the number of seniors included in long-term care will triple, this problem will be even more severe.

Therefore there is a need to evaluate other possibilities, not only expensive home care or expensive assisted living housing units in privately developed senior housing complexes (owned by senior residents or rented by senior residents) but also other arrangements through public or private investments in affordable housing.

5 Conclusion

In Table 1 we presented that in the next 35 years the number of people aged 65 and older in EU is expected to almost double, and the number of people aged 75 and older is projected to triple by mid-century. The projections of the ageing structure in Slovenia are similar, as can be seen from EC The Ageing Report 2015 (EC, 2015, pp. 20). Nearly one third of Slovenian citizens will be older than 65 and many of them will live alone in a big house, where they will have lived with their family for many years before. They do not need 100 m² or 300 m² of living space. Regarding their monthly income, they cannot maintain big apartments or houses, invest in insulation and other improvements, especially when they live alone and finance their livelihood only with their income from pension. The results show that more than half of Slovenian seniors are missing the possibility to move to retirement villages or other better adapted homes in assisted living housing units, where they could protect their dignity and independence better than in institutional care in nursing homes. At least half of them would be

willing to move to a more appropriate housing unit when their functional capacities decreased up to a certain level, but only very few of them would go to a nursing home, as presented in Figure 1.

These results are a novelty in the field of studying the housing for seniors in Slovenia. Slovenian professional studies report about the needs to intensify home care at the existing homes and not much about the needs of seniors with decreasing functional capacities to move to more appropriate assisted living dwellings with retention of housing rights assured by constitution which give them independence and privacy, which are lost when seniors move to a nursing home.

Therefore we can conclude that if local authorities and the private sector invested in the construction of more appropriate and affordable dwellings for seniors, a substantial number of bigger housing units would be sent to the market as they would be no longer appropriate for senior owners, who would be able to move to smaller, but better equipped dwellings accessible for seniors with decreasing functional capacities. If local authorities will recognise the challenge, they could support a better, more liquid housing market, affordable for young families who would buy the seniors' properties and thus improve the wellbeing of the seniors of local communities and provide an adapted environment for them. The higher liquidity would additionally increase rentals, municipality fees, and seniors' wellbeing. We have to raise the awareness regarding the challenges given to local communities to make the life of their citizens better and to increase the economic bases of the local areas, also by activities of the newly arising “silver economy”.

This study is the first of its kind in Slovenia, while its results provide better insight into what matters most to Slovenian seniors regarding housing arrangements. The seniors who participated in this study come from NUTS 3 regions, which do not include the two major Slovenian cities – central places on NUTS 2 level. The research could give different results in the case of metropolitan areas, e.g. Ljubljana. Therefore we suggest that future investigations focus also on urban agglomerations.

**This article is based on the PhD Thesis of the corresponding author and the results of a ARRS bilateral project with USF Tampa and the framework of program P5—0398 .

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Staranje v lastnem domu z vplivom na urbane transformacije

Povzetek:

Raziskovalno vprašanje: V članku odgovarjamo na vprašanje, kakšno stanovanj si starejši oskrbovanci dolgotrajne oskrbe na domu v Sloveniji želijo potem, ko bodo njihove funkcionalne zmožnosti znatno zmanjšane tako, da bo popolna oskrba na obstoječem domu otežkočena.

Namen: Anketirani so bili oskrbovani v obstoječem domu, kjer so živeli več let, skupaj s svojo družino ali sami, v velikem stanovanju oziroma hiši. Zavedali so se, da bi bilo težko, da še naprej ostanejo tam, ko jim funkcionalne zmožnosti upadajo še naprej. Povprašali smo jih, kam bi se radi preselili in kakšno stanovanje si želijo, kaj bi moralo tako stanovanje vključevati, da bi zadovoljevalo njihove potrebe in pričakovanja.

Metoda: Po pregledu evropske in ameriške strokovne literature na to temo in še predvsem ob izvajanju skupnega projekta z Univerzo Južne Floride, smo ugotovili, da bi se lahko tudi v Sloveniji gradnja stanovanj za upokojence razvijala v različnih urbanih strukturah in da obstaja velika vrzel med potrebami in ponudbo stanovanj prilagojenih starejšim v Sloveniji. To dodatno vpliva na togost slovenskega nepremičninskega trga in zmanjšanje zemljiško rento, ki jo lokalne skupnosti najemajo preko nadomestil za uporabo stavbnega zemljišča in pri prenosih lastništva, če to primerjamo z rezultati v ZDA in z Zahodnoevropsko prakso. V raziskavo so bili vključeni starostniki, ki uporabljajo storitve dolgotrajne oskrbe. Ker smo želeli spoznati želeno strukturo grajenega okolja za starejše smo organizirali 3 skupine intervjujev starostnikov, ki prejemajo pomoč na domu v treh različnih slovenskih občinah in ocenili odstotek posameznih želenih vrst stanovanj in oskrbe.

Rezultati: Rezultati so pokazali, da več kot polovica slovenskih upokojencev, ki so že vključeni v dolgotrajno oskrbo, pogreša možnost, da se preselijo v vasi ali stanovanjske skupnosti za starostnike, kjer bi lahko bolje varovali svoje dostojanstvo, zasebnost in neodvisnost kot v institucionalnem varstvu v domovih za ostarele.

Pomen za organizacije in družbo: Te ugotovitve so lahko pomembna pobuda za lokalne uprave, da (a) prično graditi stanovanj prilagojena potrebam starejših s padajočimi funkcionalnimi zmožnostmi sami ali (b), da ustvarijo pogoje za to, da bi pritegnili zasebne naložbe v primerna in cenovno dostopna stanovanja za upokojence.

Novost: Tovrstni raziskovalni rezultati v Sloveniji še niso bili na voljo, čeprav nam lahko take raziskave dajejo boljši vpogled v to, kaj je najpomembnejše za slovenske upokojence s padajočimi funkcionalnimi kapacitetami glede stanovanjske oskrbe potem, ko onemorejo.

Predlog za nadaljnje raziskovanje: Raziskava je potekala izven glavnih mest Slovenije na nivoju NUTS 2, se pravi izven Ljubljane in Maribora, kjer bi lahko dobili drugačne rezultate. Zato bi bilo smiselno tovrstno raziskavo posebej izvajati vsaj na področju Ljubljane.

Članek je rezultat dela na doktorski disertaciji prve avtorice in sodelovanja na bilateralnem ARRS projektu z USF Tampa, ZDA.

Ključne besede: stanovanja za starejše, oskrbovane stanovanjske enote, staranje na domu, oskrba na domu.

Competencies of process managers

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Abstract:

Research Question (RQ): Effectiveness of managers differs in implementation of the process approach. Which competencies affect performance effectiveness of managers in the process approach?

Purpose: The aim of the research is to specify a set of competencies which affect performance effectiveness of managers in the process approach.

Method: The theoretical part examines the current state and terminology from the field of processes and competencies. The empirical part is based on a quantitative research. An online survey questionnaire was used for data collection. The survey was conducted among auditors of management systems worldwide.

Results: The research indicates that there are significant differences between influences of different competencies on performance effectiveness of managers in the process approach. The studied competencies are presented in an array from the most to the least influential.

Organization: The research directly affects the development of the HR function in organizations in practice. It enables an easier and more oriented personnel selection process and development of managers in the field of process performance.

Society: The research enables easier orientation in competencies development that can improve the social order as well as social responsibility and the environment indirectly.

Originality: The research originally offers a set of competencies that are relevant to process management.

Limitations/Future Research: The research is restricted to the population of auditors. Future studies could examine the research question from a point of view of other professional groups.

Keywords: competencies, personal traits, process approach, business process management, management.

1 Introduction

The process approach is as a modern organizational and management strategy and has been for some time now, but its actual prevalence and development in organizations is still relatively weak. There are many reasons for slow adoption of the process approach in performance of organizations; however the focus of this research is personality traits of managers as they directly affect the organizing and managing of organizations. Our presumption is that there is a connection between certain personality traits of managers and the development and process approach implementation in an organization. This raises a question - which are these personality traits and how do they affect the development of the process approach?

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Received: 02. 02. 2016; revised: 05. 02. 2016; accepted: 18. 02. 2016

The aim of this article is to present which personality traits are important in managers for a positive approach to the development and implementation of the process approach in an organization.

The research is important as it gives an insight into the current situation and serves as a starting point for further research of managerial competencies that influence the development of the process approach in organizations and, indirectly, the efficiency of organizations.

2 Theoretical framework

2.1 Process Approach

The process approach (Business Process Management, Business Process Orientation) is a modern approach to organization management that is based on business processes carried out in an organization and not on business functions (organizational units) as structural units of an organization. A business process is defined as interconnected activities that add value by transforming input to output. Process outputs are products that are intended for clients or as inputs to other processes (Davenport & Prusak, 2000; Hammer & Champy, 1993; Harmon, 2003; Verle & Markič, 2012).

Processes in organizations have been discussed by many authors. The process approach became the subject of intensive research in the 1970s simultaneously as the demand for product, service and process quality (Spanyi, 2006). In 1993, Hammer and Champy advocated for radical transformation of business processes, cost reduction, and quality improvement (Hammer & Champy, 1993). The emphasis in transformation is optimization of certain business processes and not their integration in a whole value chain of an organization as a whole. Frequently, processes are described as »workflow« – a sequence of activities that run perpendicularly through a classical organizational structure. Processes intersect and connect organizational units at the same time.

The process approach became widely used after 2000 when it was used as one of the output elements in the ISO 9000 family standards. The standard ISO 9001:2015 states requirements for organizations to adopt the process approach (CEN, 2015). Consequently, over 1,200,000 ISO 9001 certified organizations worldwide use the process approach.

The use of the process approach is also endorsed by other models of national and transnational performance excellence awards: EFQM, Deming prize, Malcolm Baldrige Award and others (Conti, 2007).

The process approach diminishes the ruling hierarchy and the number of leaders, it reduces bureaucracy and takes some pressure off employees, yet it enhances cooperation, improves the knowledge of the organization's aims, it is informative and motivational, and it establishes one's own worth which raises job satisfaction (Ostroff, 1999).

2.2 Competencies

The term »competencies« has various interpretations (Jevšček & Gorenc, 2015, pp. 58-60). In contemporary social science, the term was founded by David McClelland (McClelland, 1973) who studied approaches to testing of individuals and proved that one's success is not dependent on one's intelligence but on one's competencies which are expressed in one's behavior. McClelland did not specifically define the term in his research, however, he did make a distinction between »traditional competencies«: reading, writing, arithmetic, and the likes, and »other competencies« that include what were commonly known as personality traits: communication, patience, goal-setting, etc.

Due to an extensive diversification of competencies, they are structured and joined in different ways, commonly in competencies profiles (Bliss, 2014; Changnian, Jie & Faxin, 2015, pp. 95-102; Vervenne, 2009).

Special fields are research of leadership and management competencies (Moradi, Maleki, & Pilehrod, 2015, pp. 1864-1870; Council on Foundations, 2006) and research and development competencies (Paquett, 2007; Chai et al., 2012).

Study of competencies is the subject of current research in many fields with an emphasis on valuation. Due to the fuzzy nature of the notion of competencies, fuzzy logic is frequently used. (Houe, Grabot & Tchuente, 2011 pp. 651-655; Macwan & Srinivas, 2014, pp. 975-980; Suleman & Suleman, 2012, pp. 323-338).

McClelland's studies have become a successful business model (McClelland, 1976). Twenty years of successful research and practice have been summarized by Lyle and Signe Spencer who also formed an elaborate definition of the term competency (Spencer & Spencer, 1993, pp. 9-15):

»A competency is an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation.«

An »underlying characteristic« refers to a person's general behavior and mindset in a certain situation over a long period of time. In this sense, Lyle and Signe distinguish five characteristics: motives, traits, self-concept, knowledge and skill. »Causal relationships« refer to connections between motives, traits and self-concept that define the manner of skill or knowledge implementation and they consequently affect the result. Competencies always have intent, whereas behavior does not define a competency per se.

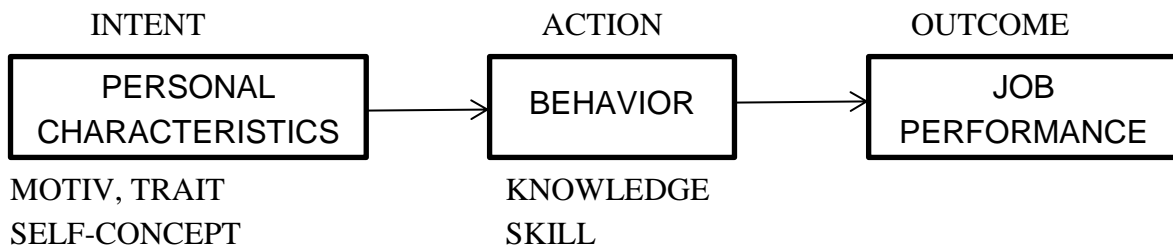


Figure 1. Competency causal flow model. Adapted from *Competence at work: models for superior performance* (p. 13), from L. Spencer & S. Spencer, 1993, New York: John Wiley & Sons, Inc.

In the definition of competency, »criterion-referenced effective and/or superior performance« is critical. A competency must predict a differentiating content in reality. If it does not predict success, it is not a competency. In this sense, the criteria »effective performance« and »superior performance« were used, where »effective performance« denotes the minimum acceptable work level, namely the lowest value below which a person is not competent for work; whereas »superior performance« is statistically defined as standard deviation above average. Roughly, this level is achieved by one out of ten individuals in a specific situation.

In 20 years of research and practices, Lyle and Signe Spencer (Spencer & Spencer, 1993, p. 20) gathered data from 286 competency models, which included 760 separate types of behavior and 360 of which were used to form 21 competencies to account for 80 – 98 % types of behaviors recorded in the competency models. Spencer & Spencer elaborately described these 21 competencies and set criteria and scales for their identification and valuation:

1. ACHIEVEMENT ORIENTATION
2. ANALYTICAL THINKING
3. CONCEPTUAL THINKING
4. CONCERN FOR ORDER, QUALITY AND ACCURACY
5. CUSTOMER SERVICE ORIENTATION
6. DEVELOPING OTHERS
7. DIRECTIVENESS: ASSERTIVENESS AND USE OF POSITIONAL POWER
8. FLEXIBILITY
9. IMPACT AND INFLUENCE
10. INFORMATION SEEKING
11. INITIATIVE
12. INTERPERSONAL UNDERSTANDING
13. ORGANIZATIONAL AWARENESS
14. ORGANIZATIONAL COMMITMENT
15. RELATIONSHIP BUILDING
16. SELF-CONFIDENCE
17. SELF-CONTROL
18. TEAM LEADERSHIP
19. TEAMWORK AND COOPERATION
20. TECHNICAL/PROFESSIONAL/MANAGERIAL EXPERTISE
21. OTHER PERSONAL CHARACTERISTICS AND COMPETENCIES

The competencies are listed in alphabetical order except the last two which are intentionally listed at the end. Number 20 represents a group of professional competencies and expertise, whereas number 21 represents all other undefined competencies. The research includes only the first 19 behavioral competencies; the remaining competencies were not included in the research.

2.3 Process approach and competencies of managers

In process-oriented organizations, managers are called process managers. Several authors (Hafner, 2006; Hitringer, 2011; Womack & Jones, 2003) observe that managers in organizations do not have an overview of how their organization is developing, how it produces, sells and supplies their products because they are preoccupied with the traditional functional mindset and performance. Spanyi (2006) observes that managers are still focused on cutting down expenses and on individual, separate business processes, e.g. the process of sales, supply, production and logistics, and not on the whole business process of an inter-functional organization. He suggests that top managers cannot, will not and do not take responsibility for the whole process which is what adds value for clients. The responsibility is delegated to individual organizational units (Jeston & Nelis, 2008 in Verle, 2012, p. 3). The expected behavioral competencies of process managers are expected from modern process managers. The research includes a selection of behavioral competencies that we gathered based on a literature review. The selection was used to create a profile of behavioral competencies in process managers.

2.4 Research question

The article explores which behavioral competencies of process managers have a positive impact on the development and implementation of the process approach in organizations they manage. The research question is which competencies affect performance effectiveness of managers in the process approach.

3 Method

Data was collected by surveying experts who tackle the problem of implementing process approach in practice on a daily basis. The participants are assessors and auditors of quality management and professional excellence models. Theirs email addresses were obtained from The International Register of Certificated Auditors – IRCA. The base contains 5499 email addresses, to 4805 of which a survey questionnaire was successfully administered. In some cases, email addresses were invalid and in others, problems occurred on mail servers, mainly in China and India.

The survey questionnaire was created electronically in »Google documents« and it consists of two sections. In the first section, 19 competencies are listed in the same order as in chapter 2.2. For each competency, synonyms were added for a better understanding of each described competency and a scale of competency development descriptions which was adapted from the model by Spencer & Spencer. The scale consists of textual descriptions that ascend from the

lowest to the most developed level of competency. The statement that a competency is not relevant for process management is always given first.

ACHIEVEMENT ORIENTATION
 Also: Results Orientation, Efficiency Orientation, Concern for Standards, Focus on Improvement, Entrepreneurship

Not relevant for process management

Focused on the Task, Works hard, but gives no evidence of a standard of excellence

Wants to Do the Job Well

Works to meet a standard set by management

Improves Performance

Sets Challenging Goals

Figure 2. An example of the »Achievement orientation« competency in the survey questionnaire with possible answers.

In the second section of the survey questionnaire, the questions concerned the respondent: age, world region the respondent is most active in, audit status and audit subject field. An empty field was added for possible comments. The survey questionnaire is enclosed in Appendix.

The data model of the empirical part of the research consisted of the following steps:

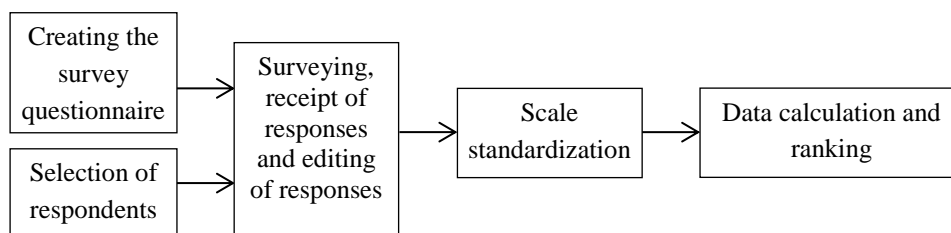


Figure 3. Research data model.

The survey questionnaires were returned by 126 respondents, namely the response rate was 2.62% which is a sufficient sample for a simple statistical analysis. A demographic breakdown of the respondents is shown below.

The age of respondents is shown in Table 1. The majority of respondents are 50 or above, which was expected considering a high level of professionalism and experience that are required for IRCA membership.

Table 1. Age		
Age	Number of responses [n]	Proportion [%]
under 30	4	3.2
between 30 – 40	32	25.4
between 40 - 50	39	31.0
above 50	51	40.5

The region in which the respondents work is shown in Table 2. Most answers came from Europe which was expected considering the established traditional auditing and assessing methodology of organizations.

Table 2. Region

Region	Number of responses [n]	Proportion [%]
Europe	38	30.2
Asia	30	23.8
International	21	16.7
America	20	15.9
Africa	9	7.1
Australia	2	1.6

Note: uncompleted data on region in 6 returned questionnaires, the total number of responses was 120.

The status of auditors is shown in Table 3. Most auditors work as 3rd party, namely they implement independent audits in accredited certification organizations. This was expected considering the high membership requirements in IRCA and the association’s mission. It is surprising that the number of assessors is very low.

Table 3. Status

Status at audits/assessments	Number of responses [n]	Proportion [%]
Auditor – 3rd party	79	62.7
Auditor – 2nd party	27	21.4
Internal auditor	12	9.5
EFQM assessor	8	6.3

The field of assessing is shown in Table 4. The majority of assessors work in big companies which was expected considering a high level of professionalism and experience are required for IRCA membership.

Table 4. Field

Field of auditing / assessing	Number of responses [n]	Proportion [%]
Economy – big companies	62	49,2
Economy – small companies	11	8,7
Public administration	15	11,9
Other	38	30,2

Note: no respondents work in healthcare or education.

Reliability and validity of acquired data is assessed as very high. This is confirmed by the population of auditors with a high level of professionalism, understanding of the topic and experience, as well as a high number of elaborate comments added in the questionnaires which was the basis for a professional correspondence later on.

4 Results and discussion

4.1 Responses

The responses received in 126 returned questionnaires are shown in Table 5. Numbers in columns represent competencies in the same order as they are listed in chapter 2.2. In the first column of Table 5, weight (U) is stated in accordance with the model by Spencer & Spencer. In this model, each response on the scale has a modified whole number value from 0 to 9. In the survey questionnaire, the weight values were not given.

Table 5 shows the number of received responses for each competency and each response in the scale of every competency as in example in Figure 1.

Table 5. A review of number of responses

Weight U	Competencies 1 - 19 (cf. list in chapter 2.2)																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
*	4	3	3	1		1	7		13	2	3	6	1	4	10	9	4	1	
0	1				2			14											2
1	7	49	16	8			17			8		2	10	19	6	13	0	6	20
2	20	11	15	9	59	16	32	26	5	17	20	44	4	21	73	43	18	3	
3		37	4	5	8	9	20	35	7	20	18	12	54	65	24	18	9		13
4	65	19	58	8	6		38	37	46	14		34	14		35	43	59		
5	29	7	17							25	60	28	44		8	48	18	55	
6				81		58		14	6				13	3			4	23	29
7			13	14	30	16	9		8	40					5			16	7
8						5			41		25				8				
9					20	21	3												
CHK	6	6	7	7	7	7	7	6	7	7	5	6	6	6	6	6	7	7	7

Note. * - competency is not relevant for process management

The last row of Table 5 is control data (CHK) which indicates the number of possible answers for each competency. The number of possible answers was between 5 and 7. Weight is different with each possible answer, so the scales must be standardized before calculating the results.

4.2 Standardization

Each possible answer in the first section of the survey questionnaire responds to a whole number value (U) in the model by Spencer and Spencer that determines the level of development of each competency. The scales have been standardized due to various numbers of possible answers and weight values with each answer.

Standardization is used when the aim is for each of the variables to have the same influence and weight on the new, mutual rating. Standardization of variables is a process in which the values of the variables are transformed by subtracting the arithmetic mean (\bar{U}) from each value of the variables (U_i) and then the difference is divided with standard deviation (s). The result is a standardized value of the variable (u_i) on the same level of measurement. The arithmetic mean of a standardized variable is $\bar{U} = 0$ and the standard deviation is $s = 1$.

$$u_i = \frac{U_i - \bar{U}}{s}$$

A standardized value indicates the position of a certain value from the point view of the group. A negative standardized value indicates that the value is below the average, and a positive standardized value indicates that it is above average.

Standardization was performed in open source software R. Results are shown in Table 6.

Table 6. Standardization

Weight	Competencies 1 - 19 (cf. list in chapter 2.2)																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
U ₁	0	1	1	1	0	2	1	0	2	1	2	1	1	1	1	1	2	1	0
U ₂	1	2	2	2	2	3	2	2	3	2	3	2	2	2	2	2	3	2	1
U ₃	2	3	3	3	3	6	3	3	4	3	5	3	3	3	3	3	4	4	3
U ₄	4	4	4	4	4	7	4	4	6	4	8	4	5	4	7	4	5	5	5
U ₅	5	5	5	6	7	8	7	6	7	5	NA	5	6	6	8	5	6	6	6
U ₆	NA	NA	7	7	9	9	9	NA	8	7	NA	NA	NA	NA	NA	NA	NA	7	7
u ₁	<u>1,16</u>	<u>1,26</u>	<u>1,22</u>	<u>1,26</u>	<u>1,23</u>	<u>1,08</u>	<u>1,38</u>	<u>1,34</u>	<u>0,94</u>	<u>1,27</u>	<u>1,23</u>	<u>1,26</u>	<u>1,16</u>	<u>1,14</u>	<u>1,03</u>	<u>1,26</u>	<u>1,26</u>	<u>1,31</u>	<u>1,37</u>
u ₂	<u>0,68</u>	<u>0,63</u>	<u>0,79</u>	<u>0,65</u>	<u>0,77</u>	<u>0,76</u>	<u>1,02</u>	<u>0,45</u>	<u>0,57</u>	<u>0,85</u>	<u>0,77</u>	<u>0,63</u>	<u>0,68</u>	<u>0,62</u>	<u>0,71</u>	<u>0,63</u>	<u>0,63</u>	<u>0,95</u>	<u>0,94</u>
u ₃	<u>0,19</u>	0,00	<u>0,36</u>	<u>0,35</u>	<u>0,31</u>	<u>0,43</u>	0,06	0,00	0,19	<u>0,42</u>	<u>0,31</u>	0,00	<u>0,19</u>	<u>0,10</u>	<u>0,39</u>	0,00	0,00	<u>0,24</u>	<u>0,07</u>
u ₄	0,77	0,63	0,07	<u>0,05</u>	0,15	<u>0,11</u>	0,42	0,45	1,32	0,42	0,15	0,63	0,77	0,42	0,90	0,63	0,63	0,48	0,36
u ₅	1,25	1,26	0,94	0,86	0,62	0,87	0,78	1,34	NA	0,85	0,62	1,26	1,25	1,46	1,22	1,26	1,26	0,83	0,79
u ₆	NA	NA	1,37	1,46	1,54	1,52	1,14	NA	NA	1,27	1,54	NA	NA	NA	NA	NA	NA	1,19	1,22

Note. NA – scale has no value. Negative values are underlined.

The top section of the Table represents non-standardized weight scales, whereas the below section represents standardized sections (u).

4.3 Result calculation

To rank individual competencies in the results of calculation, we multiplied all the received responses (O) by respective standardized weights (u) and calculated the standardized competency rating (SOK):

$$SOK = O^* \times -2 + O_1 \times u_1 + O_2 \times u_2 + O_3 \times u_3 + \dots + O_6 \times u_6$$

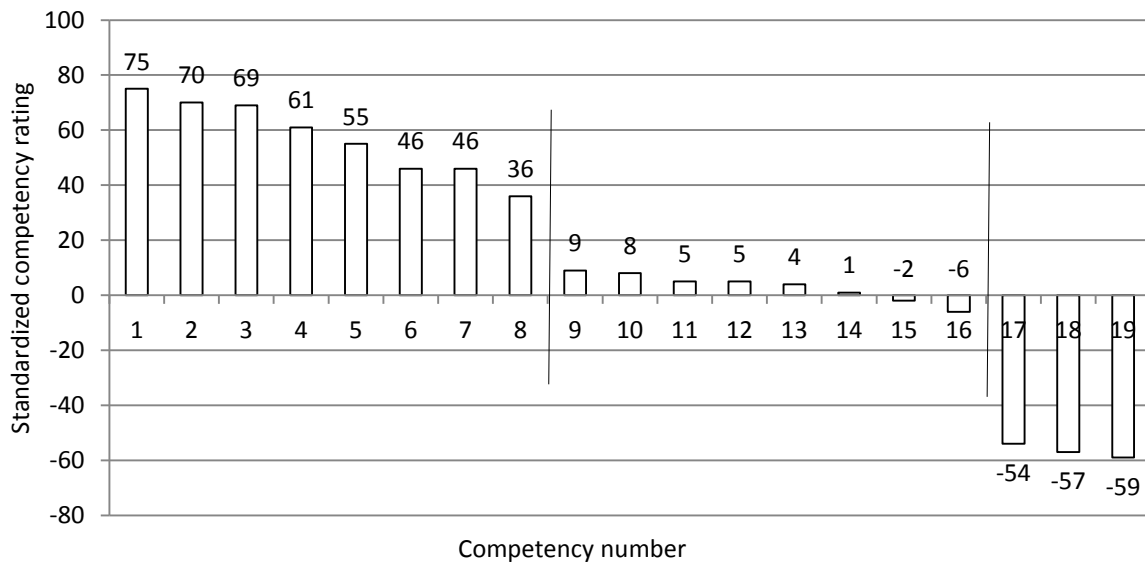
where O_i is an individual response from the questionnaire and u_i is a corresponding standardized weight of a response. The answer »Not relevant for process management« (O*) was also included in the process of calculation. This answer was not standardized but it was assigned a negative value -2 due to its large weight. The results are shown in Table 7.

Table 7. Results

	Competencies 1 - 19 (cf. list in chapter 2.2)																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
$O^* \times -2$	-8	-6	-6	-2	-2	-2	-14	0	-26	-4	-6	-12	-2	-8	-20	-18	-8	-2	0
$O_1 \times u_1$	-1	-62	-20	-10	-3	-22	-18	-19	-6	-10	-19	-3	-12	-22	-6	-16	-5	-8	-3
$O_2 \times u_2$	-5	-7	-12	-7	-39	-9	-24	-12	-6	-13	-10	-28	-3	-13	-52	-27	-11	-3	-19
$O_3 \times u_3$	-4	0	-1	-2	-3	3	-9	0	-19	-6	11	0	-10	-7	-9	0	0	-4	-3
$O_4 \times u_4$	50	12	9	1	0	7	-4	17	3	2	79	8	42	27	22	11	6	21	6
$O_5 \times u_5$	36	9	10	76	26	4	8	19	7	15	NA	43	55	20	6	44	54	14	46
$O_6 \times u_6$	NA	NA	20	19	29	24	5	NA	52	62	NA	NA	NA	NA	NA	NA	NA	28	34
SOK	69	-54	1	75	9	5	-57	5	4	46	56	8	70	-2	-59	-6	36	46	62
Rank	3	16	13	1	9	11	17	11	12	6	5	10	2	14	18	15	8	7	4

Note. NA – scale has no value. Values are rounded to a whole number.

Ranking is a process of editing data in an array. In Figure 4, competencies are listed in an array based on the calculated standardized rating of competencies in a descending order from the highest to the lowest.



1. CONCERN FOR ORDER, QUALITY AND ACCURACY
2. ORGANIZATIONAL AWARENESS
3. ACHIEVEMENT ORIENTATION
4. TEAMWORK AND COOPERATION
5. INITIATIVE
6. INFORMATION SEEKING
7. TEAM LEADERSHIP
8. SELF-CONTROL
9. CUSTOMER SERVICE ORIENTATION
10. INTERPERSONAL UNDERSTANDING
11. DEVELOPING OTHERS
12. FLEXIBILITY
13. IMPACT AND INFLUENCE
14. CONCEPTUAL THINKING
15. ORGANIZATIONAL COMMITMENT
16. SELF-CONFIDENCE
17. ANALYTICAL THINKING
18. DIRECTIVENESS: ASSERTIVENESS AND USE OF POSITIONAL POWER
19. RELATIONSHIP BUILDING

Results of the research show standardized ratings of various managerial competencies based on the importance of each competency for the process performance of a manager. In relation to value 0, the distribution has an indentation to the right with a very flat middle part. Such a distribution is reasonable as many competencies are considered key with all types of leadership. The first eight competencies visibly stand out (see Figure 4). We believe these eight competencies to be of key importance for process orientation and they can be gathered in a competency profile of process managers. On the other hand, the last three competencies have significantly low ratings. We deem these three competencies not important for process managers; it can be even concluded that they have a negative influence on the efficiency of process managers.

We believe the research is a good representation of how individual behavioral competencies affect the efficiency of managers in implementation of the process approach, and that the distribution is as expected.

5 Conclusion

The results of the research show significant differences in ratings of effect of individual examined behavioral competencies on process orientation of managers and their efficiency in the sense of implementation of the process approach. The implemented ranking of competencies serves as a source of information about key competencies for efficient process management. This information is new to the field and can be directly used in further research in the field of competencies and process approach as elements of business excellence. In the field of human resources in organizations, the results can be used in employee selection and process approach oriented managerial education guidance. The research also helps the community at large with guiding the development of competencies that can indirectly improve the social order, social responsibility and the environment.

The research was limited to a population of auditors of different management systems who undoubtedly have a high level of professionalism and a good insight in the process performance of managers. However their role is that of external observers of organizations.

Further research is possible by examining the research results through the eyes of internal observers in organizations, for example internal auditors.

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Appendix: Questionnaire

We are interested in your personal evaluation of competencies, which are important for Business process management within the organizations you have been auditing or assessing. Within following 19 competencies please select the most appropriate descriptions which suit for excellent Process Managers. If you find some irrelevant items, mark them "Not relevant for process management".

1. ACHIEVEMENT ORIENTATION

(Also: Results Orientation, Efficiency Orientation, Concern for Standards, Focus on Improvement, Entrepreneurship)

- Not relevant for process management
- Focused on the Task, Works hard, but gives no evidence of a standard of excellence
- Wants to Do the Job Well
- Works to meet a standard set by management
- Improves Performance
- Sets Challenging Goals

2. ANALYTICAL THINKING

(Also: Practical Intelligence, Analyzing Problems, Reasoning, Planning Skill)

- Not relevant for process management
- Breaks problems into simple lists of tasks or activities
- Sees Basic Relationships
- Sees Multiple Relationships
- Makes Complex Plans or Analyses
- Makes Very Complex Plans or Analyses

3. CONCEPTUAL THINKING

(Also: Use of Concepts, Pattern Recognition, Insight, Critical Thinking, Problem Definition, Ability to Generate Theories)

- Not relevant for process management
- Uses Basic Rules
- Recognizes Patterns
- Applies Complex Concepts
- Simplifies Complexity.
- Creates New Concepts
- Creates New Models

4. CONCERN FOR ORDER, QUALITY, AND ACCURACY

(Also: Monitoring, Concern with Clarity, Desire to Reduce Uncertainty, Keeping Track, Monitoring and checking work or information, Insisting on clarity of roles and functions, Setting up systems of information)

- Not relevant for process management
- Keeps an Organized Workspace
- Shows a General Concern for Order and Clarity
- Checks Own Work
- Monitors Others' Work
- Develops Systems to organize and keep track
- Puts new, detailed, complex systems in place to increase order and improve quality

5. CUSTOMER SERVICE ORIENTATION

(Also: Helping and Service Orientation, Focus on the Client's Needs, Partnering the Client, End-User Focus, Attention to Patient Satisfaction)

- Not relevant for process management
- Gives Minimal Required Service
- Maintains Clear Communication with Client Regarding Mutual Expectations
- Takes Personal Responsibility for customer service problems
- Makes Self Fully Available to Customer
- Uses a Long-Term Perspective in addressing client's problems
- Acts as Client's Advocate

6. DEVELOPING OTHERS

(Also: Teaching and Training, Assuring Subordinates' Growth and Development, Coaching Others, Realistic Positive Regard, Providing Support)

- Not relevant for process management
- Gives Detailed Instructions and tells how to do the task
- Gives Reasons or Other Support
- Does Long-Term Coaching or Training
- Creates New Teaching/Training
- Delegates Fully
- Rewards Good Development

7. DIRECTIVENESS, ASSERTIVENESS AND USE OF POSITIONAL POWER

(Also: Decisiveness, Use of Power, Use of Aggressive Influence, Taking Charge, Firmness in Enforcing Quality Standards, Classroom Control and Discipline)

- Not relevant for process management
- Gives Basic, Routine Directions
- Gives Detailed Directions
- Speaks Assertively
- Demands High Performance
- States Consequences of Behavior
- Fires or Gets Rid of Poor Performers

8. FLEXIBILITY

(Also: Adaptability, Ability to Change, Perceptual Objectivity, Staying Objective, Resilience)

- Not relevant for process management
- Always Follows Procedures.
- Flexibly Applies Rules or Procedures
- Adapts Tactics to Situation
- Adapts Own Strategies, Goals, or Projects to Situations
- Makes large or long-term adaptations

9. IMPACT AND INFLUENCE

(Also: Strategic Influence, Impression Management, Showmanship, Targeted Persuasion, Collaborative Influence)

- Not relevant for process management
- Takes a Single Action to Persuade
- Takes a Two-Step Action to Persuade
- Calculates the Impact of One's Action
- Takes Two Steps to Influence
- Three Actions or Indirect Influence
- Uses complex influence strategies tailored to individual situations

10. INFORMATION SEEKING

(Also: Problem Definition, Diagnostic Focus, Customer/Market Sensitivity, Looking Deeper)

- Not relevant for process management
- Asks Questions
- Personally Investigates.
- Asks a series of probing questions
- Calls or Contacts Others
- Does Research
- Involves Others

11. INITIATIVE

(Also: Bias for Action, Decisiveness, Strategic Future Orientation, Seizing Opportunities, Being Proactive)

- Not relevant for process management
- Addresses Current Opportunities or Problems
- Is Decisive in a Crisis
- Anticipates and prepares for a specific opportunity or problem
- Anticipates situations years ahead and acts to create opportunities or avoid problems

12. INTERPERSONAL UNDERSTANDING

(Also: Empathy, Listening, Sensitivity to Others, Awareness of Others' Feelings, Diagnostic Understanding)

- Not relevant for process management
- Understands either present emotions or explicit content, but not both together
- Understands Both Emotion and Content
- Understands Meanings
- Understands Underlying Issues
- Understands Complex Underlying Issues

13. ORGANIZATIONAL AWARENESS

(Also: Playing the Organization, Bringing Others Along, Awareness of Client Organizations, Using the Chain of Command, Political Astuteness)

- Not relevant for process management
- Understands Formal Structure
- Understands Informal Structure
- Understands Climate and Culture
- Understands Underlying Organizational Issues
- Understands Long-Term Underlying Issues

14. ORGANIZATIONAL COMMITMENT

(Also: Business mindedness, Mission Orientation, Vision, Commitment to the Command's Mission)

- Not relevant for process management
- Active Effort
- Models "Organizational Citizenship Behaviors"
- Sense of Purpose—States Commitment
- Makes Personal or Professional Sacrifices
- Sacrifices Own Unit's Good for Organization

15. RELATIONSHIP BUILDING

(Also: Networking, Use of Resources, Develops Contacts, Personal Contacts, Concern for Customer Relationships)

- Not relevant for process management
- Accepts Invitations
- Makes Work-Related Contacts
- Makes Occasional Informal Contacts
- Makes Home and Family Contacts
- Makes Close Personal Friendships

16. SELF-CONFIDENCE

(Also: decisiveness, Ego Strength, Independence, Strong Self-Concept, Willingness to Take Responsibility)

- Not relevant for process management
- Presents Self Forcefully or Impressively
- States Confidence in Own Ability
- Justifies Self-Confident Claims
- Volunteers for Challenges
- Puts Self in Extremely Challenging Situations

17. SELF-CONTROL

(Also: Stamina, Resistance to Stress, Staying Calm, Being Not Easily Provoked)

- Not relevant for process management
- Resists Temptation
- Controls Emotions
- Responds Calmly
- Manages Stress Effectively
- Responds Constructively
- Calms Others

18. TEAM LEADERSHIP

(Also: Taking Command, Being in Charge, Vision, Group Management and Motivation, Building a Sense of Group Purpose, Genuine Concern for Subordinates)

- Not relevant for process management
- Manages Meetings
- Informs People
- Promotes Team Effectiveness
- Takes Care of the Group
- Positions Self as the Leader
- Communicates a Compelling Vision

19. TEAMWORK AND COOPERATION

(Also: Group Management, Group Facilitation, Conflict Resolution, Managing Branch Climate, Motivating Others)

- Not relevant for process management
- Neutral, passive
- Cooperates
- Expresses Positive Expectations
- Empowers Others
- Team-Builds
- Resolves Conflicts

OTHER PERSONAL CHARACTERISTICS AND COMPETENCIES (if you have any additional proposals)

PERSONAL INFORMATION For easier data analysis we would like to know the following:

Your age:

- under 30
- between 30 - 40
- between 40 - 50
- above 50

Your status at audits and assessments procedures:

- Auditor - 3rd party (auditor in accredited certification house)
- Auditor - 2nd party (supplier auditor)
- Internal auditor
- EFQM, Deming Prize, M. Baldrige National Quality Award, ... or similar Assessor

Your field of auditing and assessments:

- Economy - big companies
- Economy - small companies

- Health
- Public administration
- Education
- Other

Region of auditing and assessments:

- Europe
- America
- Asia
- Africa
- Australia
- International

THANK YOU FOR YOUR COOPERATION!

Matej Jevšček graduated at the Faculty of Mechanical Engineering in Ljubljana. He has worked in several senior positions in his career. In the past ten years, he has been working in the field of system management and business excellence in the automotive industry. He is the leading auditor of quality management system by ISO 9001 standard and environmental management system by ISO 14001 standard. He is also the leading assessor of business excellence by EFQM model and an ECQM assessor. He is also a lecturer at the Faculty of organisation studies in Novo mesto.

Kompetence procesnih menedžerjev

Povzetek:

Raziskovalno vprašanje (RV): Uspešnost menedžerjev pri udejanjanju procesnega pristopa je različna. Vprašanje je, katere kompetence vplivajo na uspešnost delovanja menedžerjev v smeri procesnega pristopa.

Namen: Namen in cilj raziskovanja je določitev nabora kompetenc, ki vplivajo na uspešnost delovanja menedžerjev v smeri procesnega pristopa.

Metoda: Teoretični del zajema pregled stanja in izrazoslovja na področju procesov in kompetenc. Empirični del temelji na kvantitativni raziskavi. Za pridobivanje podatkov je bil uporabljen spletni anketni vprašalnik. Raziskava je bila izvedena s svetovnimi presojevalci sistemov vodenja.

Rezultati: V raziskavi so ugotovljene so signifikantne razlike med vplivi različnih kompetenc na uspešnost delovanja menedžerjev v smeri procesnega pristopa. Raziskovane kompetence so urejene v ranžirno vrsto od najbolj vplivnih do najmanj vplivnih.

Organizacija: Raziskava ima neposreden vpliv na razvoj kadrovske funkcije v praksi organizacij. Omogoča lažje in bolj usmerjeno kadrovanje in razvoj menedžerjev v smeri procesnega delovanja.

Družba: Raziskava omogoča lažje usmerjanje v razvoj kompetenc, ki lahko izboljšajo urejenost družbe, posredno tudi socialno odgovornost in okolje.

Originalnost: Raziskava izvorno podaja nabor kompetenc, ki so pomembne za procesno menedžiranje.

Omejitve/nadaljnje raziskovanje: Raziskava je omejena na populacijo presojevalcev. Zanimivo bi bilo raziskati poglede drugih strokovnih skupin na raziskovalno vprašanje.

Ključne besede: kompetence, osebne lastnosti, procesni pristop, menedžment poslovnih procesov, menedžiranje.

Primary School Teachers' Attitudes towards Inclusive Education in Slovenia: A Qualitative Exploration

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Abstract:

Research Question (RQ): What are the attitudes of Slovenian primary school teachers towards the inclusion of children with special needs into regular school programs?

Purpose: The purpose of the study was to encourage teachers to share and reflect on their personal experiences with inclusive education in Slovenia. This could help in the development of more successful models of practice.

Method: This was a qualitative study. Focus interviews and individual, semi-structured interviews were conducted. Data was analyzed using qualitative content analysis.

Results: Five categories emerged from the data. This article focuses on three of the categories and explores the robust division of teachers into two groups depending on their overall attitudes towards the inclusion and children with special needs.

Organization: The findings of this study suggest that Slovenian education system is not fully transitioned into the inclusive model. Teacher training and practical support are often insufficient and inter-professional cooperation is not always satisfactorily established.

Society: Inclusion of children with special needs reflects the quality of the whole school system and has implications for the functioning of the society.

Originality: This is the first study in Slovenia that explored teachers' attitudes towards inclusion. It deepened the understanding of the phenomenon of inclusion and linked the findings with international studies on inclusion.

Limitations / further research: Future research should explore the development and implementation of relevant teaching programs and courses as well as the development of better support networks within an inclusive model of education that should champion collaboration and cooperation.

Keywords: children with special needs, inclusion, education, teacher's attitudes, qualitative study, models of practice.

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Received: 14. february 2016; revised: 25. february 2016; accepted: 29. february 2016.

1 Introduction

Educating all children together regardless of their physical and mental abilities is not a new concept. It is now being implemented worldwide and has been studied extensively. Numerous international declarations and guidelines have been signed in relation to this topic. They include The Universal Declaration of Human Rights (1948), United Nation's Convention on The Rights of the Child (1989), The Salamanca Statement (1994) and the UNESCO's document from 2005 'Guidelines for inclusion: Ensuring access to education for all', to name a few. Including a child with special needs into a regular school program is also an important aspect of the concept of participation and is seen as a basic human right (Florian, 2008, pp. 202-208).

In Slovenia, 13,024 children are categorized as having special needs. Every year, a higher percentage of them are included in regular school programs, which presents a unique challenge for the existing school system (Bratož, 2004, pp. 9-49). The transition from models of practice that favoured segregation to models of practice preferring integration was not an uncomplicated one, and it is still ongoing on many levels. The paradigm shift required a new professional and organisational perspective, which challenged the established educational process, learning priorities and team working models.

It has been established that some teachers hold more positive attitudes towards inclusive education and can be more sensitive and flexible when teaching children with special needs (Fairbanks et al., 2010, pp. 161-171). Forlin and Chambers (2011, pp. 17-32) also ascertained that the teacher's views and attitudes often determine the success of integration more than their professional knowledge and formal preparations.

Since teachers' attitudes towards the inclusion model and children with special needs appear to be an important predictor of the level of success (Engelbrecht, Nel, Nel, & Tlale, 2015, pp. 1-10; Forlin & Chambers, 2011, pp. 17-32; Kemp & Carter, 2005, pp. 31-44), the present study aimed to explore the attitudes of primary school teachers in Slovenia towards integration of children with special needs into their classrooms.

This study built on the previously conducted quantitative study among Slovenian teachers that reported an overall positive attitude towards integration and inclusion (Gaber et al., 2016). Qualitative methodology was therefore employed to further explore teachers' attitudes in relation to the phenomenon of inclusion, and increase the understanding of the process from the teachers' perspective.

The research question this study aimed to answer was: What are the attitudes of Slovenian primary school teachers towards the inclusion of children with special needs into regular school programs?

2 Theoretical framework

2.1 Inclusion and participation of children with special needs

The classroom environment offers ideal circumstances for a child to develop his social skills and progress developmentally (Case-Smith & Holland, 2009, pp. 416-423). School participation combines the criteria of (1) all children attending the school program jointly, and (2) the implementation of therapy interventions for children with special needs inside the classroom, whilst including a focus on the child's ordinary day-to-day activities (Case-Smith & Holland, 2009, pp. 416-423). The new models of practice that aim to support the participation of children with special needs in regular school programs need to take these two criteria into consideration.

In connection with therapy interventions, the approach that dominated work with children with special needs in the past was the so called pull-out approach. It involved physically removing the child from the classroom for therapy interventions, and working with him in a separate room. Now, the 'push-in' approach has taken over, which encourages working with the child in the classroom at all times (Ericksen, 2010, pp.64-69; Rens & Joosten, 2014, pp. 148-158).

There appear to be significant differences between different countries when it comes to implementing inclusion, and these often relate to the diversity that exists between different locales (Savolainen, Engelbrecht, Nel, & Malinen, 2012, pp. 51-68). It has been highlighted that the discussion on inclusion often neglects differences between environments, which include cultural, historical and legal aspects (Kozleski, Artiles, Fletcher, & Engelbrecht, 2007, pp.19-34). It is important to consider cultural and historical influences and recognize that models cannot be transferred between environments in a simplified manner unless they are appropriately adapted first and made culturally relevant.

2.2 Preparation for inclusion

For inclusion to be successful, teachers need to be familiar with the process and its challenges. It is of paramount importance to develop and upgrade the teachers' knowledge, practical skills and also their value system. Florian (2008, pp. 202-208) describes three considerations that can help support inclusion and pertain to the teachers' skills, education and working techniques:

1. Primary school teachers are not specialised to teach children with special needs.
2. The teacher training curriculum needs to include topics that cover the subject of individuality and of 'being different'.
3. Teachers need to master new teaching techniques and connect with other professionals who are specialised in working with children with special needs. This is how teachers will get the adequate support that will enable the development of a collaborative approach.

The child, too, needs to be sufficiently prepared for the transition into the school environment, within the regular school system. Research suggests that the outcome of inclusion will be better if the preparation phase focuses on the development of skills that the child should master before entering the regular school program (Kemp & Carter, 2005, pp. 31-44). There is no consensus on which skills are crucial for the child, but it is clear that academic skills are not in the forefront. The most important skills seem to be those related to (1) functioning in the classroom (listening to the teacher, following instructions, obeying classroom rules), (2) communication, (3) social interactions and (4) activities of personal care (Kemp & Carter, 2005, pp. 31-44). The priorities frequently change with the child's age and level of education.

2.3 Attitudes towards inclusion

2.3.1 Factors that influence teachers' attitudes

A literature review by Avramidis and Norwich (2002, pp. 277-93) showed that teachers have an overall positive attitude towards the inclusion of children with special needs into regular school programs. The authors identified some of the factors that contribute to teachers' attitudes. These include:

1. teacher-related factors (age, gender, work experience, previous education);
2. child-related factors (type of disability),
3. environmental factors (finances, resources, staffing).

These factors were also acknowledged in more recent research on inclusion (Engelbrecht et al., 2015, pp.1-10; Forlin & Chambers, 2011, pp. 17-32; Oswald & Swart, 2010, pp. 389-403).

Ellins and Porter (2005, pp. 188-195) studied teachers' attitudes towards inclusion in a primary school in Great Britain. They focused on the subject the teachers taught and came to the conclusion that teachers who taught mathematics, science and English held a less favourable attitude towards inclusion compared to their colleagues. Children with special needs also achieved lower results in these subjects. Science teachers had the most negative attitude towards inclusion out of all, and children with special needs received the lowest results in their subject.

Attitudes towards inclusion also appear to correlate with the level and type of the child's disability. The least support exists for the inclusion of children who have emotional or behavioural problems (Avramidis, Bayliss, & Burden, 2000a, pp. 277-93). An Australian study that included 67 student teachers showed a similar trend (Forlin & Chambers, 2011, pp.17-32). According to that study, future teachers held less positive attitudes towards inclusion of children who could be physically violent towards others.

A South African study also indicated that female teachers are more accepting of inclusion compared to their male colleagues, but at the same time, they experience more anxiety regarding the process (Oswald & Swart, 2011, pp. 389-403). In other international studies, too, women were perceived as more open to the idea of inclusion compared to male teachers

(Avramidis, Bayliss, & Burden, 2000a, pp. 277-93; Ellins & Porter, 2005, pp. 188-195; Forlin, Kawai, Higuchi, 2015, pp. 314-331; Malinen et al., 2013, pp. 34-44).

Furthermore, Avramidis, Bayliss and Burden (2000b, pp. 191-211) also found that attitudes towards inclusion are more positive in teachers who have previous experiences with the inclusion process or who have actively performed it themselves.

2.3.2 Influence of education and courses on teachers' attitudes towards inclusion

While educational programs remain unchanged in length, universities are increasingly aware that the curriculum needs to be adjusted to include topics that pertain to the teachers' new roles and responsibilities (Forlin, Loreman, Sharma, & Earle, 2009, pp.195-209). A qualitative study by Engelbrecht et al. (2015, pp. 1-10) showed that one of the main factors limiting the process of inclusion was the existing model of education that focused on the medical, deficit-orientated approach.

Many studies have been conducted among student teachers to capture the attitudes of future professionals. Oswald and Swart (2011, pp. 389-403) performed a study that assessed the attitudes of 180 student teachers towards inclusion prior and post to completing a course on this subject. After the intervention, attitudes towards inclusion improved and so did the general attitude towards people with special needs. However, the study also found that as students received more knowledge on inclusion and children with special needs, they also became more worried about the implementation of such a program. The authors concluded that the ambivalence could have stemmed from becoming more aware of different limitations to successful inclusion such as limited resources and support (Oswald & Swart, 2011, pp. 389-403). A study by Forlin and Chambers (2011, pp. 17-32) that included Australian student teachers came to a similar conclusion. Following a course on inclusion and children with special needs, some of the students' anxieties increased. Students who generally felt more confident about their teaching abilities and knowledge had less worries regarding inclusion. Nonetheless, the authors conclude that improving the student teachers' knowledge did not automatically improve their attitudes towards inclusion.

In contrast, an American study of 326 student teachers showed that following a course on inclusion, the anxiety about inclusion and working with children with special needs decreased. Furthermore, after the course, student teachers were slightly more in favour of inclusion – their attitude shifted to neutrality (Shippen, Crites, Houchins, Ramsey, & Simon, 2005, pp. 92-99).

Some literature suggests that already brief courses on inclusion can make a difference (Campbell, Gilmore & Cuskelly, 2003, pp. 369-79; Sharma, 2012, pp. 53-66). According to Sharma, a 20-hour course can suffice to positively change the attitudes towards inclusion of children with special needs. However, Engelbrecht et al. (2015, pp. 1-10) reached a different conclusion. After studying a South African sample, the authors believe short courses on inclusion do not suffice and do not give the desired outcomes.

Positive attitudes towards inclusion cannot be mandated and no solution has been found yet that would address this issue and reassure future teachers. Experts believe that courses and additional education have a limited scope. Nonetheless, they are considered important and necessary tools for improving the process of inclusion (Engelbrecht et al., 2015, pp.1-10; Oswald & Swart, 2011, pp. 389-403).

2.4 Relationship between the teacher and other professionals that influences inclusion

Literature from North America, Australia, United Kingdom and Sweden emphasises that in order to successfully include the child with special needs into regular school programs there needs to be an established collaboration between the teacher and other professionals (Helena Hemmingsson, Gustavsson, & Townsend, 2007, pp. 383-398; Kennedy & Stewart, 2012, pp. 147-155; Nochajski, 2002, pp.101-112; Rens & Joosten, 2014, pp. 148-158; Villeneuve & Hutchinson, 2012).

According to the theoretical framework of collaboration developed by Friend (2000, pp. 130-132), collaboration is a style of interaction characterized by participation that is voluntary. All parties engaged in it have an equal status as they work towards a common goal. People who collaborate also share decision making, resources, and accountability for outcomes. For good collaboration, it is important to know each other's professional characteristics and competencies, to have an effective communication style (both formal and informal) and have a positive working and personal relationship. As collaboration takes place, new practices develop and team members learn and grow as they solve different problems together (Villeneuve & Hutchinson, 2012).

2.5 Models of practice

The existing models of work that support school-based collaboration are based on the equality of all parties and on good communication (Barnes & Turner, 2001, pp.83-89; Rens & Joosten, 2014, pp.148-158; Silverman & Millspaugh, 2006; Villeneuve & Hutchinson, 2012). However, it has been reported that this collaboration does not happen often or is limited, which has a negative impact on participation goals and can result in involved parties feeling dissatisfied or frustrated (Kennedy & Stewart, 2012, pp.147-155).

Recently, the EFQM (European Foundation for Quality Management) Excellence Model has been proposed in relation to education and school system (Bukovec, 2015). Organizational excellence has been defined as a method of work that brings all involved parties a level of satisfaction and increases the possibilities of long-term success. In the context of education, this is often connected with balancing the interests and needs of students, teachers, regulatory bodies, financial resources and local communities (EFQM Excellence Model, 2003).

Excellence goes beyond quality and does not mean just compliance with a certain standard. Bukovec (2015) highlights that excellence starts within an individual; this forms a basis for organizational excellence.

Excellence Model is built around eight fundamental concepts (EFQM Excellence Model, 2003). These are:

- Adding value for customers.
- Creating a sustainable future.
- Developing organizational capability.
- Harnessing creativity and innovation.
- Leading with vision, inspiration and integrity.
- Managing with agility
- Succeeding through the talent of people.
- Sustaining outstanding results.

3 Methods

Qualitative research approach was used to capture teachers' attitudes, perceptions and experience. The purpose of the study was to encourage teachers to share and reflect on their personal experiences with inclusive education in Slovenia. We also aimed to complement the results of the quantitative study that predated the current study.

Data was collected from the following sources: (1) focus interviews and (2) individual interviews. First, a pilot interview was conducted in one school. The pilot interview was not included in the final data analysis. Six schools were chosen for focus interviews and individual interviews. The selection of schools depended on the geographical region and their score on the TEIP scale, which was obtained during the quantitative phase.

From February to June 2013, researchers interviewed 6 focus groups in pairs. Each group consisted of 6 teachers who were teaching at different levels of primary school and lasted approximately 90 minutes. The first author was present during all the interviews and was leading the semi-structured discussion in 5 groups. All the interviews were audio-recorded and the interviewers also took notes.

A week later, the first author conducted individual interviews with two teachers from each focus group, a total of 12 interviews. Teachers were approached for individual interviews if (1) the author felt that they did not manage to contribute as much as they wanted to during the focus interviews and/or (2) a discrepancy was observed in their views compared to the other members of the focus group. Each individual interview lasted approximately 30 minutes and was audio-recorded.

Additional data was also collected at the schools during the visits to help build a more holistic picture of attitudes towards disability at each of the schools. Researchers made observations of the environment and took notes about school accessibility, classroom accessibility and availability of literature on the topic of disability and people with special needs. In schools that employed a special education teacher, interviews were performed with him to gain understanding of his work and work load.

Qualitative content analysis (Strauss & Corbin, 1998) was used to analyse the interviews with the aim to develop new concepts, hypotheses and explanations that would read like a story describing the phenomenon under study. The analysis followed 6 basic steps: (1) reading and re-reading the material to get familiar with it, (2) selection of coding units, (3) open coding of the whole text, (4) choosing and defining relevant concepts and categories, (5) axial coding - comparing categories and arranging them in proposed relationships, and (6) developing the final theoretical formulation that would read like a coherent narrative.

4 Findings

Five categories pertaining to teachers' attitudes to inclusion emerged from the interviews:

1. Formal education vs. work experience
2. Readiness to cooperate with other professionals
3. Burden or challenge?
4. Different work approaches
5. Negative and positive aspects of inclusion

Since a great volume of material had been collected and analysed, we will here focus only on the analysis and discussion of the first three categories. All quotations were originally in Slovenian language. When translating into English, we tried to keep the text as close to the original as possible, however, some grammatical and vocabulary adjustments had to be made to ensure the content is comprehensible after the translation. To maintain anonymity and confidentiality, pseudonyms are used when presenting the findings.

Formal education vs. work experience

Most teachers expressed that their formal university education did not include specific topics connected to inclusion and quality education of children with special needs. Simon describes his teacher education in the following way: *“I feel that the university lives in a world of its own, separate from real school life. This means there is no systematic way of getting students familiar with knowledge that could help them when they encounter pupils who have learning disabilities or physical disabilities or behavioural issues...It bothers me that you don't get prepared for what might be waiting for you at the school.”*

Consequently, most teachers feel they are not confident (enough) when it comes to the inclusion process. They try to fill the perceived gap in knowledge by attending internal and external courses and CPD activities. Some also use self-directed learning techniques to further their knowledge on the topic. Dragica told us: *“Sometimes I go to the library and borrow a book, for example, I look for ideas on how to manage a restless class or how to work with these children. And sometimes I do find some new inspiration and then change my old way of working.”*

Teachers try to implement the newly attained knowledge from different courses and self-directed learning into their daily work. One teacher told us she likes to “experiment” with different teaching methods. Most teachers recognize the importance of CPD activities and

courses on inclusion, but they also emphasize these cannot compare to years of practical experience of working with children with special needs. In their opinion, work experience importantly contributes to the teacher's confidence and gives him a (positive) authority in the classroom. One interviewee also reflected that her work brings her continuous development and learning: *“Every school year is like a 9-month intense workshop. I never get the feeling that now I know everything; it's more like I'm learning again and again and again. And again and again I'm dissatisfied with the work of the previous year. So I keep what worked for me and change the things that didn't work. I learn from mistakes and I think it's really possible to develop.”* (Mateja)

In the interviewees' opinion, confidence is best developed through being proactive and creative when implementing the inclusion process. Teachers also acknowledge that their role is rapidly changing: from a person who designs and implements the whole teaching process to an observer - a person who directs children towards independent learning.

Readiness to cooperate with other professionals

The challenges teachers face in their daily practice have to do with both an increased number of children with special needs in regular school programs and a great diversity of their needs and disabilities. Marjana captures this when saying: *“Since I teach maths, I really get to see a plethora of differences in children's needs, from those who have attention deficits, learning disabilities, dyscalculia, dyslexia to above-averagely talented children.”* This diversity presents teachers with some unique challenges and difficulties when designing individual plans of work.

Often, teachers require guidance and assistance when developing an individual plan for a child with special needs. Teachers also seek support and advice from their colleagues and other professionals when it comes to establishing authority and confidence in the classroom. Moreover, they sometimes ask for feedback regarding their work with children with special needs. The importance of intra-professional support was expressed by Nuša: *“It is a real privilege that there are two of us in year one./...this good collaboration and working in tandem brings a special./...new teaching approach and it often happens that we play a certain didactic game and we see the children's reaction, so we think, yes, this is the way we are going to work.”*

Teachers appear to be more in favour of internal cooperation with their colleagues at the school compared to external cooperation with other experts. They generally like to discuss (1) the most appropriate ways of including a child with special needs, (2) previous experiences with inclusion, (3) individual programs for children with special needs. The need for cooperation is greatest at the beginning and/or end of the school year and in between academic terms. During these times the teachers exchange information on the progress/stagnation of the child and share their plans for activities that could support inclusion. Most teachers report a positive attitude towards cooperation, however, cooperation

does not take away the need for the teacher to be confident and competent in his work routines.

In contrast, cooperation with other (external) experts and institutions appears to be inadequate. In the teachers' opinions, this is connected with: (1) unresponsiveness and lack of thoroughness on the part of other professionals when teachers ask for additional help with the child with special needs, (2) time-delays that accompany written communication.

Burden or challenge?

Based on their attitudes towards inclusion, teachers could broadly be divided into two groups. The first group constitutes of teachers who have developed negative feelings and connotations in relation to their profession. These teachers often express criticism towards the existing school system and the possibilities for inclusion of children with special needs. Also, they believe that in the current system, the children are generally stagnating. This group of interviewees experiences the inclusion process as additional burden that demands extra preparation time and CPD activities. They describe how they need to invest more time to prepare the lessons and adapt their methods of teaching and assessing. Some of them experience despair and feelings of loss at the beginning of the school year. Children's behavioural and emotional challenges exhaust and overpower them and they feel unsuccessful when they do not observe any visible improvements in their work. Teachers who perceive inclusion in a very negative way often experience difficulties dealing with children who have behavioural problems. Mihaela described them as *"destroying the everyday routine."* Lojze also told us how *"they do not make notes, don't have notebooks. They walk around the classroom and take things from other pupils or just scream. These sorts of moments take away the teacher's focus"*. Teachers seem particularly negative towards children who are exhibiting disruptive behaviours as they feel that these children diminish the quality of education also for their classmates. Maja wondered: *"If the pupil doesn't even meet minimal standards and struggles all the time, this presents a big problem for teachers, how and to what degree should they be adapting."*

The other group constitutes of teachers who accept their changing and more dynamic role. These teachers acknowledge the more dynamic arrangements of their work schedule and conclude that they have to be *"very adaptable"* to meet all the new requirements; *"we need to adapt to children's different levels,"* as described by Barbara. Some interviewees feel that at the beginning of their career when they do not have so much work experience, teaching on different levels and in different classes can be difficult, however, they have accepted this as a positive challenge. They also perceive the inclusion of children with special needs as both a responsibility and a challenge. These teachers often express the desire to get to know children with special needs and become familiar with their abilities, strengths and weakness, so they can make their educational process more meaningful. To do that, they find it very important to obtain information from the parents. Špela explained: *"I think a lot about what the parents tell me, how they do things at home and what they're like. I reflect on that, so I can build a better picture. Of course, you don't know the parents from the start. You slowly get to know them via*

parent-teacher meetings, and in this way you also get to know the children better, all of them, those with and without special needs. I put a lot of emphasis on what parents tell me.” Interviewees are aware that inclusion of children with special needs requires additional preparations and tasks, so that the teaching process can be implemented to a high standard. Lojze explains that the teacher *“is expected to motivated the children and sort them out, and then the teacher can function better as well.”*

5 Discussion

Slovenian teachers included in this study acknowledge that they were not sufficiently trained and educated on the topic of inclusion during their teacher training years. At the same time, they also feel that sometimes life experiences, pro-active approach and hands-on work with children are as important as formal education in developing the teacher’s competencies and classroom authority. In order to be successful and satisfied, teachers need to be increasingly flexible in their role. They need to meet the various needs of children and also adapt to changing roles and responsibilities. Teachers generally recognize the need for collaboration with other professionals, however, collaboration with external professional appears to be somewhat inadequate, which is often attributed to factors relating to bureaucracy and the style of work of other professionals. Some teachers appear to be more positive about the inclusion process, and they often see it as a part of their personal development. In contrast, other teachers experience inclusion of children with special needs as an additional burden that contributes to their general dissatisfaction with the existing school system and society as a whole.

Findings about the inclusion process in Slovenia reflect many of the findings of previous studies from other countries. There appears to be an international trend that the existing models of teaching and education do not always adapt to changing circumstances and remain rooted in a medical approach that focuses on deficit (Engelbrecht et al., 2015, pp.1-10). However, external factors are not the only ones affecting the inclusion process. Teachers themselves vary in their perceptions of their teaching realities. As demonstrated in this study, they could robustly be divided into those who are generally more positive and those who are generally more negative. Jordan, Glenn and McGhie-Richmond (2010, pp. 259-266) talk about two opposite approaches to teaching (teaching in general as well as teaching children with special needs) that relate to the teacher’s beliefs and attitudes. The first approach is determined by pathognomonic attitudes that describe disability as internal, fixed and pathological. Teachers with prevailing pathognomonic views attribute the reasons for the child’s stagnation to factors that relate to the child, his parents or family. These teachers generally spend less time trying to include the child with special needs and they prefer models of practice that segregate and are in favour of a pull-out approach. The second approach is focused around interventionist attitudes. These teachers are of the opinion that disability is, at least partially, a sociological phenomenon that is often caused by the environment which is created for people without special needs. They feel personally responsible for the inclusion of children with special needs and want to create an environment in which all children are able

to participate. Although the two belief systems can be intertwined, only approximately 20 percent of teachers hold interventionist beliefs. These two opposite attitudes (pathognomonic vs interventionist) could help explain the finding of this study of two groups of teachers which appear to be diametrically opposite.

Furthermore, it appears that attitudes towards inclusion and children with special needs might have implications that expand beyond the inclusion process. A preliminary study conducted by Glenn (2007) found that there was a connection between the teacher's interactions (both with children with special needs and others), their teaching style and their beliefs about the abilities of children with special needs. Glenn (2007) concluded that the teacher's epistemological beliefs and their attitudes towards disability might be connected with the overall quality of their teaching. The most successful teachers were able to include all children, spent more time with children with special needs and encouraged critical thinking. This goes against the general belief that inclusive teaching limits the teacher in his work with children who do not have special needs (or are even above-average in their academic abilities). This has also been expressed by Malinen et al. (2013, pp. 34-44) and Engelbrecht et al. (2015, pp. 1-10) who emphasize that inclusion means quality education for everyone and should not be too different from the existing school model. Moreover, research showed that educational systems recognized as world's best include all children well (Barber & Mourshed, 2007). When teachers implement interventionist work methods efficiently, *all* children benefit from it. This aspect and potential of inclusion has not been widely recognized by Slovenian teachers included in the study. Teachers frequently separated the inclusion of children with special needs from other teaching practices and some saw it as a burden they were not fully equipped to manage. Jordan, Glenn and McGhie-Richmond (2010, pp. 259-266) acknowledge that it is not easy to develop interventionist attitudes and high quality inclusive methods of work. Although the Slovenian quantitative study (Gaber et al., 2016) showed a generally positive attitude towards inclusion, this qualitative study did not completely confirm this. It revealed some subtle complexities and struggles that are faced by both teachers and children and that need to be addressed if the inclusion model is to be successful.

The findings of this study also suggest that, after finishing their teaching course, teachers often do not feel ready to face a class that can include a child with special needs. The sense of self-efficacy and confidence get build over time. Loreman, Sharma and Frolin (2013) describe the 'head-heart-hands' triad, which characterizes a good quality inclusive teacher. The 'head' represents cognitive knowledge and theoretical education. Moral and ethical principles represent the 'heart' component. And 'hands' stand for the practical and technical skills that are required to implement inclusive education.

Another difficulty Slovenian teachers expressed was the cooperation with external professionals. Many barriers to good collaboration have been described in literature and the most common ones include:

1. Ambiguity regarding roles and responsibilities (Helena Hemmingsson et al., 2007, pp. 383-398).
2. Professionals not experiencing each other as equal partners and having different theoretical and philosophical backgrounds, often due to being educated within different systems (Bose & Hinojosa, 2008, pp. 289-297; Silverman & Millspaugh, 2006).
3. Organisational barriers (Helena Hemmingsson et al., 2007, pp. 383-398).
4. A lack of time for formal communication, e.g. strategic meetings (Bose & Hinojosa, 2008, pp. 289-297; Nochajski, 2002, 101-112).

All these barriers can inhibit the implementation of modern interdisciplinary models of practice. In the Slovenian example, organizational barriers and ambiguity regarding the other professionals' roles, scope of practice and approaches of work were most commonly mentioned. These barriers could also prevent the full implementation of the Excellence Model in education and limit the transition from quality education to excellence (EFQM Excellence Model, 2003).

6 Conclusion

Both organizational and personal factors have been identified as limiting the process of inclusion and affecting full participation of children with special needs in Slovenian primary schools. Teachers' attitudes towards inclusion were not homogenous and there were many different experiences and understandings of the process. While some teachers appeared to be positive about the inclusion process, others experienced it as an additional professional burden. Lack of education and experience contributed to the feelings of being overwhelmed. The need for collaboration was generally recognized, but especially cooperation with external professionals did not always meet the demands of the inclusion process.

This study was the first qualitative study of the inclusion process in Slovenia. It highlighted some important aspects of the inclusion process and linked it with studies from other countries. It has been recognized that good quality education involves all students and requires ongoing development and a focus on the future. To develop excellence in education, some deeply rooted patterns of thinking and working will probably need to be altered first (Bukovec, 2015). Successful inclusion could importantly contribute to a more harmonious society that could support all individuals and help them thrive regardless of their backgrounds and different abilities.

This qualitative study included teachers from one geographical region of Slovenia. Although we did not aim to make any generalisations, it could be useful to expand the sample to other regions in order to capture different collaboration patterns that might be established in other regions and municipalities.

The findings of this study suggest that future research should explore the development and implementation of relevant teaching programs and courses that could support teachers and provide continuous development in the context of contemporary Slovenian environment. A better inter-professional network also needs to be established, so that children with special needs as well as teachers teaching them can be adequately supported.

Declaration of Conflicting Interests

The authors declare that there is no conflict of interest.

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Odnos slovenskih osnovnošolskih učiteljev do inkluzivnega izobraževanja: kvalitativna študija

Povzetek:

Raziskovalno vprašanje (RV): Kakšen je odnos slovenskih osnovno-šolskih učiteljev do inkluzije otrok s posebnimi potrebami v redne šolske programe?

Namen: Namen študije je bil vzpodbuditi učitelje, da delijo svoje osebne izkušnje in refleksije, kar bi lahko pripomoglo k razvoju bolj učinkovitih metod dela.

Metoda: To je bila kvalitativna študija, ki je vključevala fokusne in individualne, pol-strukturirane intervjuje. Za analizo materiala je bila uporabljena kvalitativna tematska analiza.

Rezultati: Iz analize je izšlo pet kategorij. Ta članek se osredotoča na tri kategorije, ki opisujejo delitev učiteljev v dve skupini glede na njihov odnos do inkluzije in otrok s posebnimi potrebami.

Organizacija: Rezultati raziskave nakazujejo, da slovenski šolski sistem še ni povsem prešel na inkluzivni model dela. Učitelji ne dobijo dovolj podpore in niso ustrezno izobraženi za inkluzijo, primanjkuje pa tudi medprofesionalne podpore.

Družba: Inkluzija otrok s posebnimi potrebami je odraz kakovosti celotnega izobraževalnega sistema in družbe kot celote.

Originalnost: To je bila prva študija v slovenskem prostoru, ki je proučevala odnos učiteljev do inkluzije. Poglobila je razumevanje tega fenomena in rezultate povezala z drugimi mednarodnimi študijami o inkluziji.

Omejitve/ nadaljnje raziskovanje: Nadaljnje raziskave bi se lahko osredotočile na razvoj in implementacijo programov izobraževanja za učitelje in na razvoj podporne mreže, ki bi temeljila na sodelovanju znotraj inkluzivnega modela dela.

Keywords: otroci s posebnimi potrebami, inkluzija, izobraževanje, odnos učiteljev, kvalitativna študija, modeli dela.

Roles of Municipal Councils in Poland and in the Czech Republic: Factors Shaping the Roles and the Dynamic of Change¹

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Abstract:

Research Question (RQ): After many years of not being in vogue, the issue of representative democracy at the local level has yet again caught the scholars' attention. The interest is related both to falling turnout in local elections, disappointment in party politics as well as to the impact of the new trends such as the strengthening of the executive power or citizens' more direct involvement in the decision-making process. Quite often the afore-mentioned trends force local councils to redefine their roles.

Purpose: The main objective of the article is to investigate the factors that shape the roles of municipal councils in two CEE countries, Poland and the Czech Republic, and to track the possible dynamic of their change.

Method: The analysis conducted in the paper is grounded mainly in institutional theory. The study is based on available statistic data, examination of legal regulations, documents and information included in the corpus of selected articles and books.

Results: The outcome of the analysis conducted indicates that in both countries the basic roles of councils – representative, decision-making and administrative one – are being diminished. Nevertheless, the existing institutional framework as well as reforms implemented in recent years provide potential for the development of new roles, such as the facilitator of the governing process or a network coordinator.

Organization: The paper may contribute to better organisation of local administration at the municipal level.

Society: The study has an impact on the understanding of representative democracy in local self-governments.

Originality: The paper elaborates on representative democracy at the municipal level in Poland and the Czech Republic, countries where the discussion over this issue is still much less visible than in Western Europe.

Limitations / further research: The paper should be mainly perceived as a kind of theoretical introduction to further empirical research into the changing roles of municipal councils in Central and Eastern European countries.

Keywords: municipal councils, Poland, the Czech Republic, role, local democracy, and governance

¹ The article was written within a project PRVOUK P17 *Sciences on society, politics and the media in contemporary challenge*, at Charles University in Prague, Faculty of Social Sciences, Institute of Political Studies.

1 Introduction

Democratic governance is based on the active involvement of citizens in political issues. Democracy is measured not only by the degree to which the actually pursued policy reflects citizens' opinions, but also by the degree to which citizens actively take part in the shaping of political decisions (Aars & Offerdal 1998:208). One of the basic ways to influence politics is to take part in elections.

Regarding the local level, the idea of direct election of councillors appeared in Western European countries at the turn of the 18th and 19th centuries. Since that time councils, especially at the municipal level, have traditionally been considered the cornerstone of local democracy, main bodies that represent interests of local community and shape local politics. Besides representative and policy-making functions, the councils play also other roles, *inter alia* administrative and political ones.

The roles of municipal councils and their actual performance constitute the outcome of numerous territorial, historical, institutional and political factors. Moreover, the impact of the new trends, such as New Public Management, shift from traditionally understood governing style to governance-like decision-making, or citizens' more direct participation in the decision-making process, should not be underestimated.

After many years of not being in vogue, the topic of representative democracy at the local level has increasingly started to appear in scholarship. Nevertheless, Western European researchers elaborate on it mainly either in the context of party politics (Copus 2004; Reiser, Holtmann 2008), the changing leadership models (Copus 2006: pp.164-190) or the role of individual councilors (Egner, Seeting, Klok 2013). Additionally, in the Nordic countries the discourse regarding the impact of NPM and network governance on representative democracy can be also noticed (Hansen 2005; Nyholm, Haveri 2009). In the still so-called “new democracies”, the discussion is however much less visible. Therefore, the main aim of the article is to investigate the factors shaping the roles of municipal councils in Poland and in the Czech Republic as well as to present the possible dynamic of their change. In the analysis conducted, attention is paid to such issues as the number and size of municipalities, the scope of their powers and financing system, the number of elected representatives, the adopted model of institutional leadership, and the presence of political parties. Moreover, the influence of new trends, mainly connected with citizens' deeper involvement in the decision-making process, is duly taken into account. The main research hypothesis assumes that although local governments in both countries have much in common, and often are even labelled as one model (Loughlin, Hendriks, Lindström 2012), the roles performed by municipal councils slightly vary and also show potential for a considerably different development.

The paper is divided into five main parts. The first section describes the approach and methodology applied in the article. The second one presents the catalogue of roles performed by municipal councils and focuses on the issues influencing them. The third part of the paper

provides institutional description of municipal governments in Poland and in the Czech Republic. The fourth part discusses the factors that seem to have key impact on the municipal councils' roles in both countries. The conclusion contains main research findings.

2 Research Approach and Methodology Used in the Present Study

The analysis conducted in the paper is grounded mainly in institutional theory. An institution is seen as “a normative context that constitutes actors and provides a set of norms in which the reputation of the actors acquire meaning and value” (Katzenstein 1997: pp.12-13). Nevertheless, since the aim of this article is to reflect the dynamic of institutional change, new institutionalism is applied as the main approach and the core methodology (March, Olsen 2006).

For a number of reasons, new institutionalism seems apposite with regard to analysing the roles played by municipal councils in both countries. Firstly, this approach puts an emphasis on the evolutionary character of institutions and draws attention to the fact that, as a result of the complex process of governance, traditional local structures, such as municipal councils, have been offset by new bodies, stemming directly from the traditions of participatory and deliberative democracy. Secondly, the said approach enables researchers to observe and illustrate the dynamics of the evolution of institutions, their diversity as well as tensions generated by them. Thirdly, new institutionalism features a number of diverse trends, each of which highlights different aspects of the institutions under question.

The analysis expounded upon in the present paper regards only councils at the basic, municipal level. The study is based on available statistic data, examination of legal regulations, documents and information included in the corpus of selected articles and books. Therefore, the paper should be mainly perceived as a kind of theoretical introduction to further empirical research into the changing roles of municipal councils in Central and Eastern European countries.

3 Catalogue of Municipal Councils' Roles and Factors Shaping Them

As indicated in the Introduction, the municipal council plays several roles, which can be further examined in the light of the external and internal context. On the one hand, referring to the external settings, the municipal council conducts the business of representation and act as an advocate and defender of citizens' interests. It is also responsible for formulation of local policies and practices, which are perceived as meeting social needs and delivering welfare. The council should also provide leadership, at the same time being accountable to local residents. Moreover, in many countries the body is seen as a local party arena, a place where conflicting interests meet (Copus, 2004). On the other hand, with reference to the internal context, municipal council performs an administrative role. It constitutes the main decision-making body that sets up priorities and creates development strategies. The council is also responsible for monitoring the effectiveness of implemented regulations (Wilson & Game 2011: pp.272-281). In many European countries, they also have important competences

related to electing and scrutinising executive power. Finally, linking both the external and internal context, the council also creates an official link between local citizens and municipal administrators.

The actual (real-life) roles played by the municipal council within the governing process, depend however on a variety of other factors. Firstly, the adopted concept of local self-government and the values upon which its institutions have been built constitute an important issue. In this context, Stoker indicates that local government can be perceived as a supporter of political identity, as an institution that underwrites economic development, as a facilitator of social provision or a lifestyle co-ordinator (Stoker 2011). In many countries, the applied understanding is reflected in the structure of local government, in the size of municipalities and in the scope of their competences. Secondly, referring to institutional settings, the adopted model of leadership and the relation between legislative and executive branch are also of crucial importance. Referring to the typology created by Mouritzen and Svava, in some models (committee-leader, collegiate) councils have a bigger say, whereas in others (strong-mayor, council-manager) their power is limited by the executive or administrative official(s) (Mouritzen & Svava 2002). Thirdly, the scope in which municipal arena is penetrated by political parties plays an important role as well (Resier, Holtmann 2008).

Moreover, it seems that since the end of the 1970s, the role of elected bodies has been influenced by other factors. Firstly, at the turn of the 1970s and the 1980s in many states the approach to public administration shifted from the traditional, i.e., Weberian, idea of bureaucracy to New Public Management (NPM); (Pollitt, Bouckaert 2011). The key aim of the implemented change was to ensure economy, efficiency and effectiveness of public organisation as well as to provide services in a better way. In order to achieve these objectives, many countries limited the role of public administration, including elected representatives of local communities, and shifted some of their responsibilities onto other institutions (agencies, quangos, businesses). That trend was clearly visible in the Anglo-Saxon and some Nordic countries, where NPM was implemented to relieve politicians of the majority of decisions and reduce their competences to establishing more general frameworks, with decisions being made elsewhere (Hansen 2005; Nyholm & Haveri 2009).

Secondly, in the 1990s in many countries the change of traditional governing process into governance-like decision-making was observed. Whereas under the rule of the first concept decisions are a product of formal institutions of central/local government, the latter one assumes collaboration of the public, private and non-profit sectors to achieve mutual goals. Lack of hierarchy, flexibility and networking constitute important and highly prized values. (John 2001, Hambleton 2003). Importantly, the governance paradigm also puts emphasis on the quality of local democracy. In consequence, a number of reforms have been implemented to achieve a wider inclusion of other stakeholders into decision-making processes, as a result forcing local governments to move from a traditional representative democracy towards a participatory and deliberative one (Bevir 2011). This resulted in more frequent referendums and local consultations, but also led to the introduction of completely new forms of civic

involvement, such as co-production of local services, participatory budgeting, local initiative, etc. As a consequence of these factors, representative bodies have ceased to be sole creators of politics and have been forced to negotiate with other local actors. The scope of their accountability for the results of the governing process has also been questioned.

Thirdly, the impact of general trends, such as urbanisation, globalisation and Europeanisation, on local government should not be diminished. Fourthly, notwithstanding these tendencies, there are also mezo- and micro-trends that influence the role of representative bodies (Denters, Rose 2005). On the one hand, in many countries there has been a marked decline in the level of trust in local institutions, including political parties and groupings, which have a vital role to play in a representative democracy. On the other hand, residents are increasingly better educated and critical towards local authorities, which often lead the communities to take initiative to solve local problems. Both DIY (do-it-yourself) and DIT (do-it-together) democracies are prime examples of such initiatives. Finally, it should be stressed that in view of the on-going late-2000s economic crisis, where the effectiveness of local administration is paramount, a number of countries have chosen to implement structural-functional reforms. Some states have acted to reduce the number of municipalities (Sweden, the Netherlands, Denmark, England, Finland) or are about to do so (Slovakia, the Czech Republic). Some have opted to change the scope of the powers of local governments.

Therefore, it can be said that although in many European countries the council is still formally considered the cornerstone of municipal democracy, the scope of its actual power and say in governing process has been significantly diminished. The situation forces the body to redefine its role and to seek new ways of asserting its presence. The process is also visible in CEE countries, where most of the above-described reforms and tendencies appeared during last two and half decades.

4 Municipal Councils in Poland and in the Czech Republic

Available scholarship quite often classifies local democracy in Poland and in the Czech Republic as the “ex-communist”, “new-democracies” model (Heinelt & Hlepas 2006; Loughlin, Hendriks, Lindström 2012). Indeed, on the one hand, local governments in both countries have much in common. Firstly, until 1989 both were under the communist rule, where public administration was centralised and as a result the role of local authorities was very limited. Secondly, after the regain of independence both countries faced similar problems, connected with i.e. the weakness of local structures, the urgent need of transformation and decentralization of the system, as well as with the absence of democratic control on the side of society (Radzik-Maruszak 2014). Moreover, as a consequence of above, both states decide to implement extensive reforms at the local level in a relatively short period of time, which as corroborated by researchers, resulted in a number of tensions and collisions (Campbell & Coulson 2006). Thirdly, Polish and Czech local governments undoubtedly share common cultural setting and values, such as decentralisation or aloofness towards party politics at the municipal level (Jüptner 2008). On the other hand, there are however still

significant differences between both local democracies. They can be noticed in the territorial organization of the state, adopted model of leadership as well as in the attitude towards wider citizens' involvement into decision-making process (Jüptner et al. 2014). Many of these factors affect the roles of municipal councils, thus they will be elaborated on in the following section of the article.

Poland

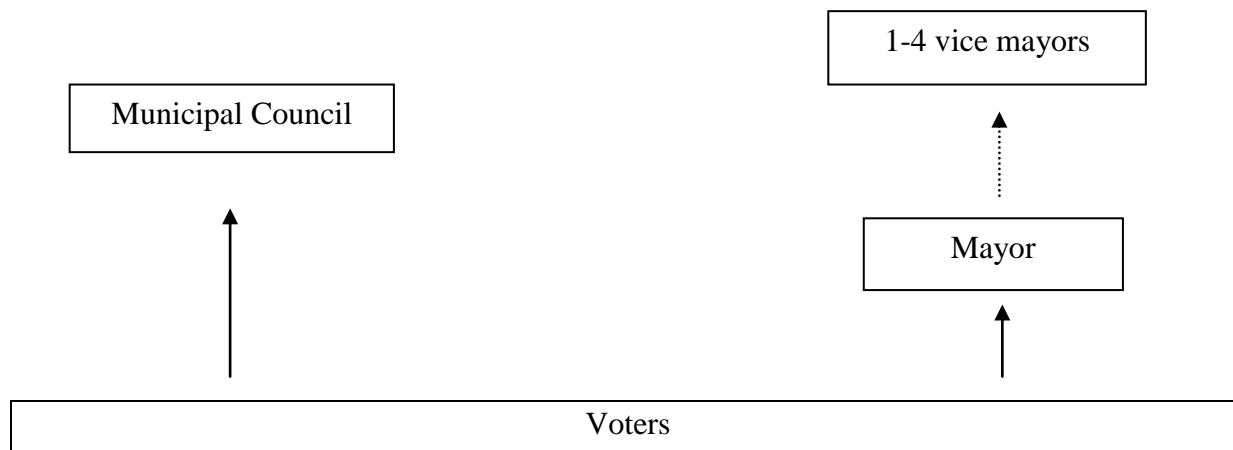
The institutional framework of local democracy adopted in Poland is a result of various political, economical, and social reforms implemented after 1989 under the popular banner of decentralisation. The primary stage of the process – the so-called “first wave” took place in 1990 on the basis of the Municipal Government Act, while the latter one in 1998 on the grounds of the Regional Government Acts. Importantly, in comparison with local governments in other CEE countries, Poland introduced reforms in a fast and decisive manner, thus in scholarship it is often labelled a champion of the decentralisation (Swianiewicz, 2014a). Presently, local self-government has a strong legal basis, including regulations collected in The Constitution and many other acts and laws of lesser importance.

Local government in Poland is mainly understood as a way of carrying out public tasks in a decisive and autonomous manner by entities that are separate and independent from the state (Dolnicki 2009: pp.17). Furthermore, general community-related issues, including the fact that the local government creates citizens' identity and that its authorities express residents' will and concerns, also play a key role. At present, there are three levels of local government: 2 479 municipalities (2480 from 1. January 2016), 314 counties plus 66 cities with county rights, and 16 regions (Statistical Yearbook of the Republic of Poland 2015). In comparison to many other CEE countries, Polish local governments, particularly municipalities, have a relatively big size and are responsible for a variety of their own as well as commissioned tasks. According to the 2015 Statistical Yearbook of the Republic of Poland, only 42 municipalities have fewer than 2 500 inhabitants, whereas the majority, 609 out of total 2 479, have from 5 000 up to 7 499 residents. Regarding the tasks, own responsibilities of municipalities include pre-school and primary education, communal services such as water distribution and sewage disposal, solid waste collection and street lighting, local roads and, in case of cities, also local public transportation. Other own municipal competences include communal housing, spatial planning, social services, i.e., social benefits, maintenance of voluntary fire brigades, local libraries and centres (The Act on Municipal Government 1990). Commissioned tasks include *inter alia* registration of births and marriages or issuing identity cards. Therefore, it can be said that Polish municipalities in their size and responsibilities refer rather to the Northern model of local government.

Municipalities in Poland enjoy relatively large financial autonomy, as they are the only local units that collect own taxes. Property tax plays a key role, providing more than half of all municipal internal revenue. Other fiscal sources of income include farmland and forest taxes as well as the taxes on vehicles, dogs and civil law activities. Additionally, municipalities

have a share in two national taxes, as they receive nearly 40% of the proceeds from Personal Income Tax (PIT) and almost 7% from Corporate Income Tax (CIT).

Scheme 1: Institutional framework of municipal government in Poland



In municipalities, political power is shared by councils (consisting of from 15 to 45 members) and the directly elected mayor (Scheme 1). It should be noted nevertheless that up to 2002 municipal organisation was different. Firstly, the council was bigger and consisted of from 15 to even 100 members. Secondly, executive power was held by a collegiate board, elected by a council board. As Swianiewicz indicates, the reduction in the number of council members was mainly implemented as an effect of a populist discourse stressing the importance of “cheap state” and a conviction that having too many elected representatives is expensive and not productive (Swianiewicz 2012: pp.493). The decrease in the number of councillors was especially visible in larger municipalities. The second change – replacement of the collegiate board by a directly elected mayor – was the outcome of the then widespread aspiration to make local leadership more visible and accountable. In Polish discourse over direct mayoral elections, however, other arguments were also mentioned. Firstly, there was an expectation to make local voting more interesting for citizens. Secondly, there were hopes for better municipal management. At the same time, opponents of the reform argued that direct elections of both bodies might cause political tensions, situation of “local cohabitation” and, in consequence, difficulties in day-to-day operation of municipal government. From the perspective of fourteen years since the reform was introduced, it seems that both advocates and adversaries of the solution were right. On the one hand, Polish mayors are visible and powerful leaders, on the other hand, however, in some municipalities tensions between legislative and executive bodies can be observed (Sidor, Kuć-Czajkowska, Wasil 2015).

According to the Polish law, presumption of competence for municipal council applies. The key responsibilities of the council include, however, adoption of the municipal statute and other resolutions, including the municipal budget. The body also appoints and dismisses the municipal treasurer, determines the scope of responsibilities and funds of the auxiliary units,

as well as decides about the level of municipal taxes and levies. Moreover, the council appoints municipal committees, among which the audit committee enjoys the highest importance. The body also scrutinises financial policy conducted by mayor, including performance of the budget. However, when the council does not approve of mayoral decisions, it does not bring any significant legal consequences for the latter one. The inner council bodies include a chairperson and up to 3 vice-chairpeople. All of them are elected in a secret ballot by the majority of votes in the presence of at least half of the statutory members of the council. The chairperson is responsible for setting the agenda of council meetings, convening and chairing them. The council meeting has to be called at least once in three months. The mayor exercises the executive power, and is responsible *inter alia* for preparing draft resolutions, drawing up development programmes, determining the performance of resolutions, managing municipal property, implementing municipal budget and employing/releasing heads of municipal organisational units. Moreover, she/he runs current affairs and represents the entire municipality (The Act on Municipal Government 1990).

Each municipal council is elected for a four-year term in popular (universal), equal and direct elections under the majority rule (In urban municipalities with county rights proportional representation rule still operates). Moreover, in the last 2014 elections the single-member constituencies were applied in all municipalities for the first time. The right to nominate candidates for councillors is held by the election committee of a political party, the coalition of election committees, the election committee of organisations and the election committee of voters (Kodeks wyborczy, 2011). The mayor is elected also for a four-year term in popular (universal), equal and direct voting. The majority rule operates here as well. If none of the candidates gets the absolute majority of votes in the first round, within two weeks the second round is organised.

The last municipal elections were organised in November 2014. The turnout for municipal councils was 45.54%, whereas for mayoral posts 47.34% in the first round and 39.97% in the second one (PKW, 2015). It should be indicated that Polish municipalities are still among the least “party-affiliated” of all the European countries, thus also in 2014 elections independent (non-party) candidates for councillors took more than 70% of mandates. In the context of local elections, attention should be paid, however, to one more issue. Polish law does not allow *cumul des mandates*; thus both councillors and mayors cannot combine their mandates with being representatives in other local units. Moreover, it is also not possible to be elected as a councillor or a mayor and an MP at the same time.

Concerning the impact of the so-called new trends on the roles played by municipal councils, two issues are worth noting. On the one hand, with regard to NPM, the paradigm seems to still have a rather limited influence on the elected councils. The bodies have to work in a more managerial environment, be familiar with new legal and economic arrangements; nevertheless, in general the situation of municipal representation has not changed that much, and cannot be compared, for example, with tensions experienced by councillors in Nordic countries (Nyholm, Haveri 2009; Vabo, Aars 2013). On the other hand, the governance-like

mechanisms, especially citizens' more direct involvement in the decision-making process, are developing relatively fast. The trend is particularly visible in big, urban municipalities.

At present, Poles can take part in the decision-making process at the municipal level by using tools based on representative, direct, participative and deliberative democracy (Radzik-Maruszak 2015). The core of the first group forms local elections. However, beyond electing councillors and the mayor, citizens at the municipal level can also vote for representatives to district councils that create auxiliary units of towns and cities. The districts have their own, rather limited, tasks and competences (Swianiewicz 2014b). Additionally, inhabitants can be actively involved in the daily work of other councils that "surround" the main municipal council. According to the Polish law, only one of them – Public Benefit Council, which consists of representatives of both municipal authorities and NGOs located in municipality – has to be created. Nevertheless, in most of the municipalities also other councils are set up, i.e., one dealing with youth or seniors' issues, public space, cultural offer provided by the municipality, etc.

The second group of available instruments refers to direct democracy. Local referenda constitute the best example of these instruments. The Polish law provides a basis for two kinds of referenda – mandatory and optional one. The first is organised in a situation when municipal authorities (council, mayor) are to be recalled before their term of office expires. This kind of voting can be initiated by the residents and, in case of recalling the mayor, also by the council. However, in the latter situation, if the referendum fails, it gives rise to the early elections of the council itself. The solution is intended to prevent the organisation of referenda inspired by political tensions between the two powers. Additionally, in order to be valid, this kind of referendum requires a minimal turnout of more than two-thirds of the turnout at the last (previous) regular elections. The second one, the so-called optional referendum, refers to any other issue that is of importance to the municipality.

The third group of available mechanisms is based on participatory democracy. Among accessible instruments, social consultations have the leading role. Consultations can be organised in mandatory cases, e.g., in the course of creating a new local administrative unit, as part of spatial planning, but also in any other matter relevant to a particular local authority or to a particular group of citizens. Importantly, citizens can be consulted in various ways – during meetings, by surveys, on-line forums, etc. Furthermore, other concepts allowing for more direct interactions with citizens are developing intensively. In this context, participatory budgeting creates a prime example. PB is an institution that allows residents to allocate a certain amount of the city budget to the needs of their communities (districts they reside in) and by doing so they decide about their closest environment. In Poland PB has a voluntary character and, as an institution, it is developing intensively (Radzik-Maruszak, 2015). According to available data, 58 Polish municipalities applied the solution in 2015 (Budżetyobywatelskie.pl, 2016).

Finally, since the beginning of the new millennium, deliberative instruments have been more in vogue. Among available tools, special attention is paid to citizen juries and deliberative polls. Both intuitions were used, for example, in the city of Poznań (Radzik-Maruszak, 2015).

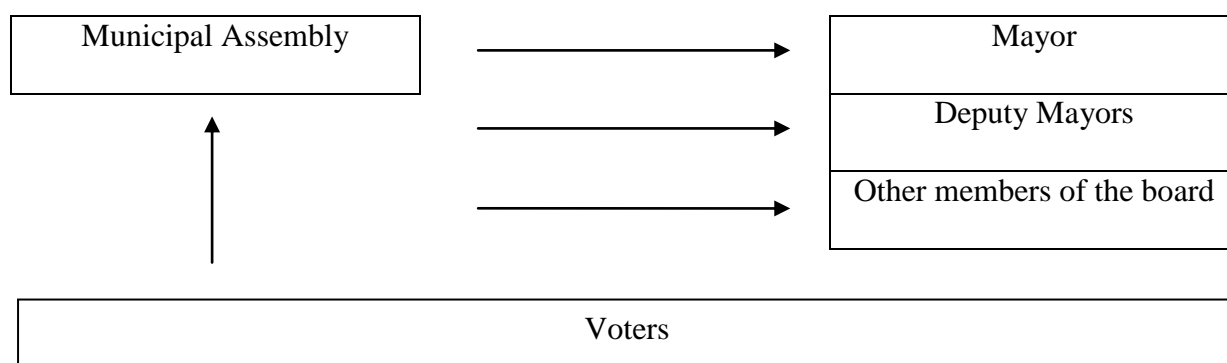
The Czech Republic

As in case of Poland, the institutional framework of local democracy adopted in the Czech Republic is the outcome of political, economic, and social reforms implemented after 1989, when the communist regime collapsed. Local government is understood by the Czechs as an expression of the right of the population living in a territory to manage independently the territorial affairs within the scope of rights defined in the constitution and other legal acts (Illner 2012: pp.510). For the administrative reasons, the territory of the country is divided into separate regions and the capital city of Prague, each having a regional status, its own districts and municipalities. According to the 2015 Statistical Yearbook of Czech Republic, there are 13 regions plus the City of Prague, 76 districts and 6 253 municipalities (Statistical Yearbook of the Czech Republic 2015). Such a distinctive fragmentation at the municipal level is the direct result of the history and the so-called “forced amalgamations” that took place in the 1960s and 1970s. Therefore, when independence was regained as a result of the Velvet Revolution (1989), the number of municipalities in the Czech Republic, or rather the then Czech part of Czechoslovakia, increased from 4100 in 1990 to 6258 in 2001 (Jüptner et al. 2014: pp.76). Since then the number of municipalities has slowly started to decrease. Nevertheless, with its 10.5 millions of inhabitants and 6 253 municipalities, the Czech Republic is still considered to be one of the most fragmented territorial self-governments within European countries. Moreover, as Jüptner indicates, one fourth of all municipalities is populated by fewer than 200 inhabitants, and more than one half of the overall number of these units is populated by fewer than 500 residents (Jüptner 2008: pp.24). Inhabited by only 17 residents in 2015, the municipality of Vysoka Lhota constitutes the most extreme example of this phenomenon. The small size of Czech local governments does not prevent them, however, from caring out many important competencies.

Municipal government in the Czech Republic is endowed with general competence. Accordingly, municipal authorities in principle have the right to manage all local affairs, even in the absence of specific legal regulations (Panara 2013: pp.380). In reality, it means that all municipalities are responsible for the development of social welfare, fulfilment of citizens’ needs, in particular, with regard to housing, protection, and improvement of health, transport and communication, education, culture, and protection of public order. Moreover, as Illner points out, municipalities have a crucial prerogative at their disposal, namely, the right to cooperate with other municipalities, to sign agreements related to cooperation between municipalities, and to enter into associations of municipalities, both within the country and outside it (Illner 2012: pp.511). Importantly, these independent powers are the same for all municipalities regardless of their size, with the exception of the capital city of Prague and 23 other statutory cities. The municipalities are, however, based on the category that depends again on their size, responsible also for the so-called “transferred powers”. The smallest, first

category municipalities hold none or just basic transferred responsibilities and execute them only within their own territorial administration. The second type of municipalities, i.e., ones with commissioned municipal offices, executes a number of transferred powers in surrounding areas. Finally, the municipalities of the third type have the so-called “extended power”, meaning they are responsible for a wider scope of transferred responsibilities, executing them in a much larger surrounding area. It is estimated that more than 90% of all municipalities belong to the first type, around 5% to the second one, while only 3% constitutes the third category (Illner 2012: pp.511; Jüptner 2012). Nevertheless, as Jüptner and Kruntorádová indicate, relatively broad powers of Czech municipalities stay in visible contrast with their limited financial autonomy. As around one half of the municipal revenue is drawn from taxes, both collected at the municipal level and shared with the state, small municipalities are often in trouble (Illner 2012: pp.514; Jüptner et al. 2014: pp.75; see also Kruntorádová 2012; Illner 2012: pp.522).

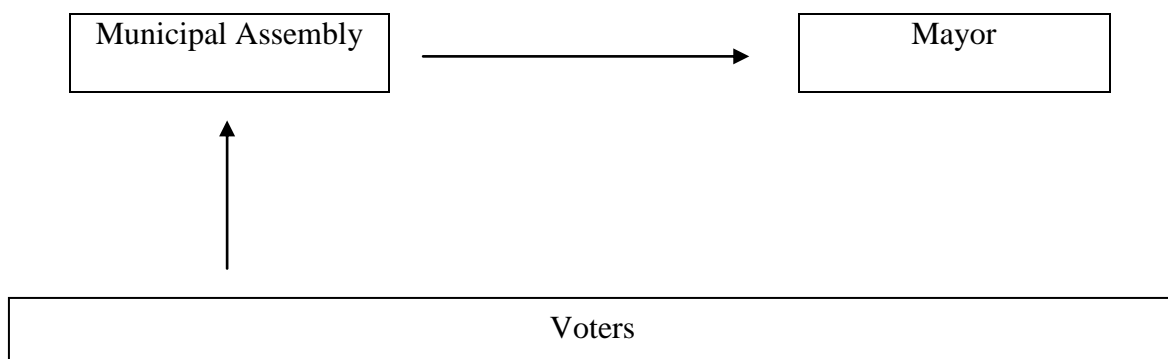
Scheme 2: Institutional framework of municipal government in the Czech Republic (larger municipalities)



The power in the municipalities is held by the council, board and the mayor (Scheme 2). Elected every four years, the council (*zastupitelstvo*) is defined by law as the highest decision-making body. Depending on the size of the municipality, it consists of from 5 up to 55 members (With the exception of the capital city of Prague which appoints 55-70 councillors). The councillors have joint mandates, meaning they can combine their function with seats in the regional council and the national parliament. The council meets at least once every three months and is responsible for the passing of local acts, approving of the municipal budget and financial accounts, as well as for the acceptance of municipal development programme. The body also decides on the establishment of monetary funds, contributory organisations and creation of municipal units. It has the power to delegate and recall municipal representatives to/from general meetings of companies in which municipality has an ownership interest. The council also establishes committees and appoints their members. Among all committees, only two, i.e., financial and audit ones, are set up compulsorily, however. Additionally, the council has significant powers in relation to the executive branch. It elects and recalls the mayor, deputy mayor and other members of the municipal board. The mayor (*primátor*) represents the municipality in external relations, convenes and chairs sessions of the council, decides on

matters of independent responsibility entrusted to him/her by the council as well as fulfills other duties. On the one hand, she/he formally holds a rather weak power (Moreover, the Czech Republic is also one of the few Central Eastern European countries where the mayor is not elected in a direct way). On the other hand, due to good access to information, full-time employment and the weak organisation of political parties at the local level, the mayor is considered to be a key figure in the municipality (Jüptner et al. 2014: pp.83). The board (*rada*) consists of from 5 up to 11 members and is responsible for the execution of tasks within the independent authority of the municipality, and if entrusted by law, also for transferred powers. It should be noted nevertheless that when the council has fewer than 15 members, the board is not elected and its tasks are performed by the mayor, and partially also by the council (Scheme 3); (Illner 2012:512). Unlike the sessions of the council, the board's meetings are closed and do not allow participation of the audience.

Scheme 3: Institutional framework of municipal government in the Czech Republic (smaller municipalities)



The municipal council is elected for the period of four years in universal, direct, equal elections by secret ballot. The proportional representation rule with a 5% electoral threshold operates. Mandates are distributed using the D'Hondt method. Political parties, political movements and their coalitions can register the candidates for the councillors. However, also independent citizens and associations of political parties, political movements, and independent residents have the right to nominate their candidates. With the exception of the smallest municipalities, the maximum number of candidates is identical to the number of council members. Although an individual has a right to stand for elections, the voting system favours candidate lists, as within them the votes accumulate. Therefore, in spite of the fact of the low number of actual members, political parties try to nominate as many candidates as it is possible. The voting system includes also such an instrument as panachage that allows voters to distribute their preferences between candidates from different party lists. Still, as for the vertical shifts a quorum of panachage votes is required, the panachage is deformed and mandates go rather to political parties than individual candidates (Jüptner et al. 2014: pp.81). As far as local elections are concerned, two more phenomena, especially important in the context of municipal councils' roles, should be noted. Firstly, taking into account all formal

and legal factors, one may get impression that political parties play a significant role at the municipal level; however, their actual presence depends on the size of each local unit. While in bigger municipalities the councils are multi-parties bodies, this rule does not apply in medium and small-sized units where the level of partisanship is very low (Jüptner 2001: pp.148-151). In the 2014 local elections, independent candidates got 86.52% of all mandates, leaving far behind party nominees (Volby.cz, 2016). Secondly, as Rásavý and Bernard indicate in their research, in these small municipalities the size of political competition is not high enough as well (Rásavý & Bernard 2013: pp.846). In practice, it means that in each election dozens of Czech municipalities do not manage to obtain at least five or seven of the necessary candidates. Therefore, in these units voters do not have a real choice due to the fact the number of candidates is lower or equal to the number of elected councillors (*ibid.*) Lastly, although municipal elections are still considered to serve as a basic form of involvement into local affairs, the citizens' interest is rather moderate. In the 2014 voting the turnout was 44.43%. In this context, it should, however, be pointed out that electoral participation is negatively correlated with the size of the municipalities; the bigger the municipality is, the lower turnout is observed (Čmejrek 2007: pp.24; Illner 2012: pp.516).

When analysing factors shaping the roles performed by Czech municipal councils connected with so called “new trends”, it seems that the impact of management reforms is limited, whereas factors associated with civic participation play a fairly more significant role (Fanta, Šumpíková Fantová, Ochrana 2008). Apart from the above-mentioned local elections, citizens have a right to be present at sessions of municipal councils and can be members of its committees. Municipal authorities are also obliged to inform residents about undertaken and planned actions and activities. More and more often, municipal governments are also organising surveys of inhabitants' opinion on relevant local issues, on their satisfaction with using municipal administration and preferences (Illner 2012: pp.517-519). Additionally, citizens can be directly involved in the decision-making process by inciting and taking part in municipal referenda. The request must be supported, depending on the size of the municipality by 6%-30% of its inhabitants. In practice, local referenda are organised quite seldom and are mainly connected with environmental issues, infrastructure or division of municipalities (Smith 2011).

5 Discussion: Changing Roles of Municipal Councils in Poland and in the Czech Republic

There are undoubtedly many similarities between Polish and Czech local governments. Both systems share common past and the notion of local government, perceived primarily as a space where local identity and values are shaped and expressed, and less prominently as an area where local services are delivered. Many similarities are also present in municipal councils.

In the context of the paper, especially important is the fact that both in Poland and in the Czech Republic councils are formally recognized as key municipal bodies. They are

responsible not only for representing residents' will and businesses but also for decision-making, setting up priorities and strategies. Furthermore, in Poland, not unlike the Czech Republic, councils play a role of an official link between citizens and local officials. In both countries, councils also have a right and privilege to shape the institutional framework of the municipality. Finally, probably as a result of their common past, both in Poland and in the Czech Republic councils have a rather limited political role, as most of the councillors do not have party affiliation. Therefore, it can be said that in both countries councils play formally representative, decision-making and administrative roles, whereas their political role is limited, and truly visible only in big, urban municipalities.

Presented in the preceding paragraphs of the present article, the analysis of the institutional environment that Polish and Czech municipal councils operate in, can contribute to making broader observations and to drawing deeper conclusions. Firstly, it seems that in both countries the basic roles of municipal councils – representative, decision-making and administrative ones – are being diminished. In case of Poland, two main factors influence the situation. On the one hand, the 2002 introduction of the direct mayoral election reduced the council's role and say in the governing process, and thus its ability to defend citizens' interests and to make decisions. The reform had also impact on the administrative role played by the council. At present, the body has limited competences in determining priorities for the municipal government and holding the executive power into account. Moreover, the council's actual role was influenced by the abolition of *cumul de mandates* rule and the reduction of the number of councillors. On the other hand, Poland constitutes also an example of the country where the number of institutions allowing citizens more direct involvement in the decision-making process has been recently significantly increased. Thus a kind of shift from representative democracy towards participative and deliberative one can be observed. The trend is particularly visible in large, urban municipalities. Regarding the Czech Republic, it seems that although the formal role of the council is still strong, the range of its actual power is weakening as well. However, in contrast to Poland, the problem is not equally evident, and primarily can be noticed in small municipalities. Firstly, as indicated in previous sections, many Czech municipalities have to cope with limited resources. As a consequence, the council has restricted ability to accomplish residents' needs and to solve their problems. Secondly, as Rásavý and Bernard indicate, the size of political competition in smallest municipalities is not high enough so as to positively influence the "quality" of representation (Rásavý & Bernard 2013). Additionally, the developing role of the mayor in the governing process should not be neglected. Although the mayor formally holds a rather limited power, in reality – on account of full-time employment, board access to information and weakness of political parties – she/he plays a key role at the municipal level. Increasingly, the current discourse over the future of Czech local government abounds in the voices in favour of the introduction of direct mayoral elections.

One of the recent proposals implies not only directly elected mayors but also the abolition of the municipal board and the transfer of its powers to the mayor. Interestingly, the solution

assumes that the latter one will still chair the council meetings. The mayor could also appoint his deputy from the ranks of councillors without approval of the council (Jüptner, Valušová, Kruntorádová 2015: pp.284). Importantly, the proposal has support of key national politicians, i.e., President Miloš Zeman who is in favour of further introduction of more elements of direct democracy into the political system (Radio Praha, 2015). If the rule is implemented, it will significantly affect the way municipalities are governed, the relationship between powers and the role they play.

Secondly, in spite of similarities that occur between legislative powers in Poland and the Czech Republic, it seems that the roles played by municipal councils have potential for divergent development in the future. This dissimilarity is mainly the outcome of the slightly different institutional framework the Polish and Czech councils operate in. Therefore, in case of Poland, due to the growing role of the mayoral institution, on the one hand, and increasing citizens' involvement in the decision-making process, on the other, municipal councils are forced to act nowadays rather as facilitators of the governing process or co-partners in local governance. Additionally, as Gędzwił and Żółtak indicate, the non-partisanship in Poland is in gradual retreat (Gędzwił, Żółtak 2012). Consequently, in next years the higher number of party-affiliated councillors is likely to be observed, which will contribute to the strengthening of the political role of the council. In regard to the Czech Republic, the necessity of cooperation of municipalities, especially the smallest ones, is of upper importance. Therefore, councils have a potential for acting as network leaders. Still, most importantly, in both countries the change must be accepted and supported by the councils themselves.

6 Conclusions

The changes and reforms that have been introduced to European local governments in recent years are not favourable to representative democracy. On the one hand, the general decline in interest towards local democracy can be observed. The citizens are increasingly demanding, but also at the same time less and less interested in traditional voting. On the other hand, the shift from government to governance and visible reinforcement of leadership brought new challenges. Therefore, councillors at present have to deal with stronger executive power and more direct ways of citizens' involvement into local politics. In many cases, all the processes combined lead to the necessity of redefinition of the councils' roles.

The afore-described trends are visible also to a greater or lesser extent in CEE countries. In Poland, the introduction of directly elected mayor has had a particular impact on the councils' roles, while the citizens' increasing interest in participative democracy has also affected the institution of the council. As a result, municipal councils feel both internal and external pressure to develop their roles. In comparison, in the Czech Republic the decisive factors include a relatively small size of municipalities and their limited financial autonomy. Thus, at present the pressure comes mainly from external environment; nevertheless, the situation can be changed by the introduction of directly elected mayors.

In conclusion, it can be said that municipal councils in both countries will be more and more often forced to reconcile their roles in governing process with presence and action of other bodies, partners and stakeholders. Undoubtedly, this issue requires more in-depth empirical research and ought to be the subject of further scholarly investigation.

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Vloge občinskih svetov na Poljskem in Češkem: Faktorji oblikovanja vlog in dinamika sprememb

Povzetek:

Raziskovalno vprašanje (RV): Po mnogih letih obstranskosti je vprašanje reprezentativne demokracije na lokalnem nivoju ponovno pristalo v središču pozornosti raziskovalcev, predvsem po zaslugi upadanja udeležbe na lokalnih volitvah, razočaranjem nad strankarsko politiko in na drugi strani zaradi naraščajočega vpliva izvršilne oblasti in bolj neposrednega vključevanja občanov v odločevalske procese. Omenjene vsebine silijo občinske svete v redefiniranje njihovih vlog.

Namen: Glavni namen članka je proučiti faktorje, kateri oblikujejo vlogo občinskih svetov na Poljskem in Češkem ter opredeliti možne dinamike sprememb.

Metoda: Analiza je osnovana pretežno na institucionalni teoriji. Študija je izvedena na podlagi dostopnih statističnih podatkov, analize pravnih virov, drugih dokumentov in informacij, vključenih v izbrana znanstvena dela.

Rezultati: Rezultati raziskave kažejo, da je vloga občinskih svetov v obeh državah reprezentativna, odločevalska in upravna. V celoti gledano pa se vloge občinskih svetov krčijo. Obstoječi institucionalni okvir, kot tudi reforme v zadnjih letih pa spodbujajo nove vloge občinskih svetov, kot je na primer pospeševanje oblastnih procesov ali upravljanje omrežij.

Organizacija: Študija ima lahko pozitiven vpliv na spremembe organizacije upravnega delovanja na lokalnem nivoju.

Družba: Študija prispeva k razumevanju lokalne demokracije.

Originalnost: Prispevek ima dodano vrednost pri razpravi o lokalni demokraciji na Češem in Poljskem, kjer je tozadevna razprava šibkeje razvita, kot v zahodnih državah.

Omejitve/nadaljnje raziskovanje: Članek predstavlja predvsem teoretični uvod v nadaljnje empirično raziskovanje spreminjajoče se vloge občinskih svetov v Srednji in Vzhodni Evropi.

Ključne besede: občinski sveti, Poljska, Češka, vloga, lokalna demokracija, vladanje.

Mehko odločanje po več lastnostih - primer univerze

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Povzetek:

Raziskovalno vprašanje: Ustanavljanje univerze (v nekem kraju, to je lahko tudi Novo mesto) je dolgotrajen in izjemno pomemben proces. Upoštevati je potrebno veliko kriterijev, ki vplivajo na odločitve o tem, kakšna organizacijska oblika bi bila racionalna in najugodnejša. Vprašanje, na katerega bomo odgovorili, se glasi: ali je možno z uporabo kvantitativnih metod ugotoviti smiselno organizacijsko obliko univerze in kako to storimo?

Namen: Namen in cilj raziskovanja je odgovoriti na zgornje vprašanje in s tem dati odločevalcem možnost uporabe dodatnih nevtralnih informacij.

Metoda: V raziskavi uporabljamo metodo odločanja po več lastnostih (multiple attribute decision making). S kombinacijo metode AHP in algoritma VIKOR dobimo rešitev zastavljenega problema, ko so vhodni podatki ostra števila. Ker pa so vhodni podatki marsikdaj, v primeru ustanavljanja univerze ap sploh, predvsem opisni besedni termi, vpeljemo v algoritem še principe mehke logike. Sinteza vseh metod je v raziskavi uporabljena metoda mehkega odločanja po več lastnostih.

Rezultati: Rezultati raziskave pokažejo, da je uporabljen znanstveni instrumentarij smiseln in nedvoumno odgovarja na zastavljeno vprašanje. Seveda pa je pri tem, kot pri vsaki kvantitativni metodi, potrebno upoštevati robustnost vhodnih podatkov.

Organizacija: Rezultati raziskave imajo lahko direkten vpliv na odločanje o organizaciji možn nove univerze.

Družba: Vpliv raziskave na družbo, socialno odgovornost in okolje je direkten, saj uporabljeni algoritem upošteva prav te komponente.

Originalnost: Raziskava je originalna v (vsaj) dvojem: a) definira vpeljavo mehkih množic v eno od metod operacijskih raziskav in s tem omogoča veliko fleksibilnost pri uporabi deloma nenatančnih in le besedno definiranih kriterijev/podatkov ter b) uporabi algoritem na primeru ustanavljanja univerze, kar iz literature še ni poznano.

Omejitve/nadaljnje raziskovanje: Omejitve in hkrati tudi (paradoksalno) prednosti raziskave so v interpretaciji in uporabi vhodnih podatkov. Nadaljevanje raziskave pa mora iti v smeri uporabe senzitivnostne analize rezultatov in postopni vpeljavi celovitega mehkega pristopa, v končni fazi tudi v nadgradnjo algoritma z nevronskega učenjem.

Ključne besede: Odločanje po več lastnostih, alternative, kriteriji, mehka množica, rangiranje.

* Korespondenčni avtor.

1 Uvod

Vsi (vsaj odrasli) moramo dnevno sprejemati različne odločitve, bodisi v službi, bodisi v zasebnem življenju. Odločiti se moramo npr. o tem, kaj bomo imeli za kosilo, o tem, če bi se na dopust odpravili z avtom ali z letalom, pa o tem, kako opraviti poslovni pogovor in skleniti (ali ne) posel itd. Skratka, odločitve so pomemben in stalni del našega življenja. Nekatere so enostavnejše, nekatere bolj zahtevne, nekatere pa so celo življenjskega pomena. Sprejemamo jih na podlagi znanja, izkušenj, razpoložljivih informacij, pa tudi intuicije. Za pomembne odločitve potrebujemo predvsem mnogo podatkov, ki nam odločanje vsaj deloma poenostavijo in da s tem postane celoten postopek bolj objektivni.

V profesionalnem delu je odločanje izjemnega pomen in delo odločevalca nikakor ni enostavno, zato potrebuje resen in tudi formalno utemeljen pristop k sprejemanju odločitev. Odločitve, ki jih morajo sprejemati odločevalci, so npr. izbor optimalnih zalog glede na povpraševanje in proizvodne kapacitete, izbor optimalnega mrežnega diagrama projekta, izbor najugodnejše lokacije za novo tovarno, izbiro najboljšega izvajalca za izvedbo gradbenih del in podobno, pa tudi izbor najugodnejše oblike univerze v mestu/regiji in podobno. V splošnem se je vedno potrebno odločiti za eno od možnosti, ki so na razpolago in/ali te možnosti tudi razvrstiti (rangirati) po pomembnosti. Razvrščanje možnosti (alternativ) vedno izvedemo glede na več lastnosti (kriterijev), ki so včasih lahko tudi medsebojno protislovne. Recimo, da podjetje proizvaja nek artikel, ki daje premajhen dobiček. V tem primeru je potrebno bodisi zmanjšati stroške bodisi povečati ceno izdelka. Zaradi višje cene se lahko zniža povpraševanje, po drugi strani pa bi zaradi manjših stroškov lahko znižali tudi ceno in povpraševanje bi se povečalo. Ko pa se povpraševanje spremeni, mora podjetje spremeniti proizvodni načrt in vse, kar je z njim povezano. Vsaka sprememba proizvodnega načrta pa ima lahko vpliv na druge proizvode podjetja, na izkoriščenost kapacitet, na zaposlenost itd. Gre torej za kompleksne in povezane pojave, ki jih mora odločevalec v svoji presoji upoštevati.

Izvedba vsakega postopka odločanja zahteva naslednje (Waters, 1997): a) odločevalec je vedno odgovoren za svojo odločitev, b) odločevalec pozna alternative, od katerih mora izbrati najugodnejšo, c) odločevalec mora v procesu odločanja vedno izbrati eno možnost, d) po končanem izboru lahko pride do dogodkov, na katere odločevalec nima vpliva, e) vsaka izbora alternative predstavlja neko kvantitativno merljivo količino.

Pri problemih izbira odločevalec med več alternativami, za katere pozna kriterij s posledico, dan s spremenljivo količino (cena, masa, ..). V veliko situacijah (ali celo v večini) pa je izbor posamezne alternative vezan na več kriterijev. V takšnih primerih govorimo o odločitvah po več lastnostih oz. kriterijih. Za reševanje problemov te narave je razvitih več metod, kot so: kriterij minmax, kriterij maxmin, Paretova metoda rangiranja, metoda AHP (analitično hierarhični proces), metoda tarče VIKOR (Winston, 1994).

Pri teoriji odločitev se v splošnem pojavi problem podatkov, ki niso eksaktni, ampak so lahko le približni, nedoločeni, nejasni, dvomljivi. V takšnih primerih govorimo o mehkih podatkih, s katerimi se ukvarja teorija mehkih množic. Odločevalec mora velikokrat delovati v takšnem mehkem pristopu, ki terja sintezo teorije odločanja po več lastnostih in mehke logike (Ross, 2007), (Teodorović, Vukadinović, 1998), (Bogataj, Usenik, 2005), (Usenik, Bogataj, 2005). Na ta način pridemo do mehkega odločanja po več lastnostih, ki ga bomo obravnavali v nadaljevanju. Tudi tu je razvitih več metod, v nadaljevanju bomo z nekaj dopolnitvami uporabili Chen in Hwangov algoritem (Chen, Hwang, 1992).

V raziskavi bomo pokazali, kako generalizirano mehko metodo odločanja po več lastnostih uporabimo na zelo aktualnem problemu organizacijske oblike bodoče univerze, ki se lahko ustanovi v nekem slovenskem kraju, npr. v Novem mestu.

2 Teoretična izhodišča

2.1 Odločanje po več lastnostih (kriterijih)

V postopku odločanja se odločevalec odloči za neko možnost (alternativo) glede na posledice, ki jo ta možna alternative povzroči. V večini primerov je takšen izbor odvisen ne le od ene, pač pa od več posledic in tedaj govorimo odločanju po več lastnostih, (Usenik, 2008).

Vzemimo, da imamo znanih m alternativ A_1, A_2, \dots, A_m in n lastnosti (kriterijev) X_1, X_2, \dots, X_n .

Označimo z x_{ij} kvantitativno karakteristiko, ki pove kako alternativa A_i , $i=1, 2, \dots, m$ zadošča pogoju (kriteriju) X_j , $j=1, 2, \dots, n$, kar prikažemo s tabelo odločitev (Tabela 1).

Tabela 1: Tabela odločitev za m alternativ in n kriterijev

kriterij alternativa	X_1	X_2	•	•	X_n
A_1	x_{11}	x_{12}	•	•	x_{1n}
A_2	x_{21}	x_{22}	•	•	x_{2n}
•	•	•	•	•	•
•	•	•	•	•	•
A_m	x_{m1}	x_{m2}			x_{mn}

Kvantitativne podatke iz odločitvene tabele prikažemo z matriko odločanja D :

$$D = \begin{bmatrix} x_{11} & x_{12} & \cdots & x_{1n} \\ x_{21} & x_{22} & \cdots & x_{2n} \\ \vdots & \vdots & & \vdots \\ x_{m1} & x_{m2} & \cdots & x_{mn} \end{bmatrix} = [x_{ij}]_{m \times n}$$

Na osnovi tako danih podatkov želimo razvrstiti (rangirati) alternative po pomembnosti za odločevalčevo presojo.

Najprej ugotavljamo pomembnost kriterijev X_1, X_2, \dots, X_n . V ta namen uporabimo metodo AHP - analitično hierarhični proces.

2.1.1 Metoda AHP

Vzemimo n kriterijev X_1, X_2, \dots, X_n , ki jih želimo glede na njihov pomembnost pri odločanju razvrstiti po hierarhiji. V ta namen uvedemo kvadratno matriko A reda n , ki jo imenujemo matrika primerjave po parih (2.01).

Posamezen element a_{ij} te matrike pomeni primerjavo pomembnosti kriterija i glede na kriterij j . To pomembnost merimo z lestvico vrednosti od 1 do 9 takole (Winston, 1994).

Tabela 2: Primerjava pomembnosti

pomembnost	Interpretacija
1	Kriterija i in j sta enako pomembna
3	Kriterij i je le malo pomembnejši od kriterija j
5	Kriterij i je le precej pomembnejši od kriterija j
7	Kriterij i je zelo pomembnejši od kriterija j
9	Kriterij i je absolutno pomembnejši od kriterija j
2,4,6,8	Vmesne vrednosti, na primer pri vrednosti 2 je kriterij i po pomembnosti med enako in rahlo pomembnostjo glede na kriterij j
Recipročne vrednosti: 1, 1/2, 1/3,	Meri povezavo kriterija j gleda na kriterij i

Za vsak i ($i = 1, 2, \dots, n$) velja $a_{ii} = 1$. Vrednost $a_{ij} = k$, $k > 1$ pomeni, da je kriterij i k -krat pomembnejši od kriterija j . Seveda pri tem velja načelo recipročnosti, torej $a_{ji} = k^{-1}$.

Označimo z w_i utež kriterija i . Vzemimo, da je odločanje v celoti dosledno, da se torej ravna po enakih (objektivnih) načelih. V tem primeru je matrika primerjave po parih takšna:

$$A = \begin{bmatrix} \frac{w_1}{w_1} & \frac{w_1}{w_2} & \dots & \frac{w_1}{w_n} \\ \frac{w_2}{w_1} & \frac{w_2}{w_2} & \dots & \frac{w_2}{w_n} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{w_n}{w_1} & \frac{w_n}{w_2} & \dots & \frac{w_n}{w_n} \end{bmatrix} \quad (2.01)$$

Vzemimo, da je za reševanje konkretnega problema znana matrika A . Iz te matrike dobimo vektor uteži $\bar{w} = [w_1 \ w_2 \ \dots \ w_n]$ kot netrivialno rešitev enačbe $A\bar{w}^T = b\bar{w}^T$ (Winston, 1994, Usenik, 2008).

Upoštevajmo možnost, da odločevalec pri kreiranju matrike morda ni popolnoma verodostojen/konsistenten. Naj bo tedaj b_{\max} največje število, pri katerem ima enačba $A\bar{w}^T = b\bar{w}^T$ netrivialno rešitev \bar{w}_{\max} . Če odločevalčeve primerjave niso močno napačne glede na idealno možnost, bi pričakovali, da bo b_{\max} blizu števila n in vektor \bar{w}_{\max} blizu vektorju \bar{w} . V tem primeru lahko kot rešitev namesto vektorja \bar{w} vzamemo kar njegov približek, to je vektor \bar{w}_{\max} . Da dobimo takšen približek \bar{w}_{\max} , pa uporabimo dvostopenjsko proceduro, ki poteka takole:

- prvi korak: matriko normaliziramo, kar pomeni, da delimo vsak element stolpca i te matrike z vsoto vseh vhodov v stolpec i , $i=1,2,\dots,n$ in s tem dobimo normalizirano matriko A_{NORM} .
- drugi korak: poiščemo približek \bar{w}_{\max} , ki ga bomo uporabili za napoved vektorja \bar{w} . V ta namen ocenimo vsak w_i , $i=1,2,\dots,n$, kot povprečje vhodov v stolpec i matrike A_{NORM} .

V zaključku procedure moramo še preveriti konsistenco odločitvenih primerjav, kar storimo v štirih korakih.

- prvi korak: izračunamo produkt matrik $A\bar{w}^T$,
- drugi korak: izračunamo število $N = \frac{1}{n} \sum_{i=1}^n \frac{i - \text{ti element v matriki } A\bar{w}^T}{i - \text{ti element v vektorju } \bar{w}^T}$,
- tretji korak: izračunamo indeks usklajenosti (konsistentnosti) CI po formuli $CI = \frac{N - n}{n - 1}$,
- četrti korak: primerjamo CI s slučajnim indeksom RI za pripadajoče vrednosti n , ki so podani v tabeli 3, (Winston, 1994).

Tabela 3: Vrednosti slučajnega indeksa RI

n	RI
2	0
3	0,58
4	0,90
5	1,12

Če je koeficient CI majhen, je odločevalčeva primerjava dovolj dosledna in izračunane uteži lahko brez zadržkov uporabimo. V splošnem velja empirično pravilo (Winston, 1994): ko je $\frac{CI}{RI} < 0,10$, je stopnja konsistence zadovoljiva, ko pa je $\frac{CI}{RI} > 0,10$, stopnja konsistence ni dobra in v nadaljevanju postopka lahko pride do neusklajenosti. Če je kvocient $\frac{CI}{RI}$ veliko večji od 0,10, pa moramo postopek ponoviti od začetka, torej ponovno ugotavljati uteži posameznih kriterijev in njihovo medsebojno odvisnost.

Ko je postopek končan, smo določili uteži za vsak kriterij. Metoda AHP je zaključena, v nadaljevanju moramo na tej osnovi rangirati izbor alternativ. V ta namen bomo uporabili metodo VIKOR (Teodorović, Vukadinović, 1998), (Moradi, Maleki, Pilehrood, 2015), ki temelji na primerjavi razlik vsake posamezne alternative od a) idealne najboljše možnosti in b) idealne najslabše možnosti.

Postopek VIKOR poteka tako, da matriki odločitev D najprej priredimo normalizirano odločitveno matriko D' :

$$D' = \begin{bmatrix} d'_{11} & d'_{12} & \cdots & d'_{1n} \\ d'_{21} & d'_{22} & \cdots & d'_{2n} \\ \vdots & \vdots & \cdots & \vdots \\ d'_{m1} & d'_{m2} & \cdots & d'_{mn} \end{bmatrix} \quad (2.02)$$

Elemente matrike D' izračunamo iz elementov matrike D po formuli

$$d'_{ij} = x_{ij} \cdot \left(\sum_{i=1}^m x_{ij}^2 \right)^{-\frac{1}{2}} \quad i = 1, 2, \dots, m; \quad j = 1, 2, \dots, n \quad (2.03)$$

V naslednjem koraku vsak stolpec v matriki D' pomnožimo z utežjo w_j ($j = 1, 2, \dots, n$), ki pripada posameznemu stolpcu in smo jo dobili po AHP metodi. Na ta način dobimo matriko V

$$V = \begin{bmatrix} w_1 d'_{11} & w_2 d'_{12} & \cdots & w_n d'_{1n} \\ w_1 d'_{21} & w_2 d'_{22} & \cdots & w_n d'_{2n} \\ \vdots & \vdots & \cdots & \vdots \\ w_1 d'_{m1} & w_2 d'_{m2} & \cdots & w_n d'_{mn} \end{bmatrix} \quad (2.04)$$

Metoda VIKOR sedaj zahteva, da določimo:

- 4 idealno najboljšo rešitev A^+ ,
- 5 idealno najslabšo rešitev A^-

in nato poiščemo povprečno vrednost obeh idealnih možnosti.

Če je za posamezno alternativo kriterij iskanje minimuma, je takšna alternativa ugodnejša, če idealna najboljša rešitev zavzame najmanjšo vrednost, idealna najslabša rešitev pa največjo, zato velja:

$$\begin{aligned} A^+ &= \left\{ \left(\min v_{ij} \mid j \in J \right) \mid i = 1, 2, \dots, m \right\} = \{v_1^+, v_2^+, \dots, v_n^+\} \\ A^- &= \left\{ \left(\max v_{ij} \mid j \in J \right) \mid i = 1, 2, \dots, m \right\} = \{v_1^-, v_2^-, \dots, v_n^-\} \\ J &= \{j = 1, 2, \dots, n \mid j \text{ zadošča kriteriju minimuma}\} \end{aligned} \quad (2.05)$$

Če pa je za alternativo kriterij iskanje maksimuma, je takšna alternativa ugodnejša, ko idealna najboljša rešitev zavzame največjo vrednost, idealna najslabša rešitev pa najmanjšo, zato velja:

$$\begin{aligned} A^+ &= \left\{ \left(\max_{j \in J} v_{ij} \mid j \in J \right) \mid i = 1, 2, \dots, m \right\} = \{v_1^+, v_2^+, \dots, v_n^+\} \\ A^- &= \left\{ \left(\min_{j \in J} v_{ij} \mid j \in J \right) \mid i = 1, 2, \dots, m \right\} = \{v_1^-, v_2^-, \dots, v_n^-\} \\ J &= \{j = 1, 2, \dots, n \mid j \text{ zadošča kriteriju maksimuma}\} \end{aligned} \quad (2.06)$$

Odmik S_i^+ alternative od pozitivne idealne možnosti je kot Evklidska razdalja dana z izrazom

$$S_i^* = \sqrt{\sum_{j=1}^n (v_{ij} - v_j^+)^2} = \sqrt{(v_{i1} - v_1^+)^2 + (v_{i2} - v_2^+)^2 + \dots + (v_{in} - v_n^+)^2} \quad i = 1, 2, \dots, m \quad (2.07)$$

Odmik S_i^- alternative od negativne idealne možnosti pa je

$$S_i^- = \sqrt{\sum_{j=1}^n (v_{ij} - v_j^-)^2} = \sqrt{(v_{i1} - v_1^-)^2 + (v_{i2} - v_2^-)^2 + \dots + (v_{in} - v_n^-)^2} \quad i = 1, 2, \dots, m \quad (2.08)$$

V optimalni rešitvi mora biti negativni odmik čim manjši, torej $S_i^- \rightarrow 0$. To pomeni, da bo povprečna razdalja C_i^* alternative A_i , $i = 1, 2, \dots, m$ takšna (Teodorović, Vukadinović, 1998), (Usenik, 2008):

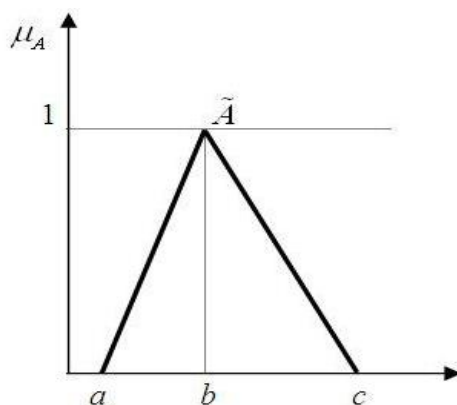
$$C_i^* = \frac{S_i^-}{S_i^+ + S_i^-}, \quad C_i^* \in [0, 1], \quad i = 1, 2, \dots, m \quad (2.09)$$

tem manjša, čim manjši bo S_i^- . To pomeni, da z uporabo kriterija (2.09) poteka rangiranje alternativ A_1, A_2, \dots, A_m glede na vrednosti števila C_i^* proporcionalno, torej večji vrednosti števila C_i^* ustreza višji rang alternative in obratno.

2.2 Mehke množice, mehka števila

Mehka logika je »stara« 50 let (Guerra, Sala, Tanaka, 2015). V tem času je dosegla neverjeten vzpon, ki temelji predvsem na njeni uporabnosti in zelo pogojno rečeno preprostosti. Osnovni element mehke logike je pojem mehke množice. Temeljna lastnost klasične množice A je ta, da nek element bodisi pripada ali pa ne pripada tej množici. Mehka množica se razlikuje od klasične množice v tem, da za njene elemente ne velja tako stroga zahteva, element lahko mehki množici pripada, lahko ji ne pripada, lahko pa ji pripada tudi nekoliko bolj ali nekoliko manj in podobno. Če označimo z $\mu(x)$ pripadnostno funkcijo, ki določa stopnjo pripadnosti elementa dani množici, potem je za klasično množico res le $\mu_A(x) = 0$ (ne pripada) ali pa $\mu_A(x) = 1$ (pripada). Pri mehki množici pa pripadnostna funkcija lahko zavzame vse

vrednosti med 0 in 1. Mehka množica \tilde{A} je množica urejenih parov $\tilde{A} = \{(x, \mu_{\tilde{A}}(x)) \mid x \in R\}$, kjer je x element mehke množice, ki zavzame vse vrednosti z vnaprej določenega definicijskega območja, $\mu_{\tilde{A}}(x)$ pa je pripadnostna funkcija (mehke) spremenljivke x . Ena od standardnih oblik pripadnostne funkcije je trikotna oblika (slika 1).



Slika 1: Trikotna pripadnostna funkcija mehke množice $\tilde{A} = (a, b, c)$

Analitični zapis takšne funkcije je:

$$\mu_{\tilde{A}} = \begin{cases} \frac{1}{b-a}x - \frac{a}{b-a} & \text{za } a \leq x \leq b \\ -\frac{1}{c-b}x + \frac{c}{c-b} & \text{za } b \leq x \leq c \\ 0 & \text{drugod} \end{cases} \quad (2.10)$$

3 Metoda

3.1 Odločanje po več lastnostih z mehkim pristopom

Problem odločanja po več lastnostih je definiran z odločitveno matriko D . Elementi matrike D so v konkretnih primerih konkretni podatki (npr. cena, dolžina, razdalja, čas in podobno) in so dani z nekim številom (npr. 10 EUR, 2 km, 20 minut,...). V vsakdanjem ravnanju pa so večinoma podatki le približni, nenatančni, lahko jih le opišemo z besedami, npr. poceni, drago, blizu, še kar dobro in podobno. Ti in podobni besedni opisi (termi) pa so ravno mehke množice, določene s pripadnostnimi funkcijami, ki jih kreiramo za posamezne primere.

V takšnih primerih elementi odločitvene matrike niso več zgolj ostra števila, pač pa za nekatere kriterije tudi opisni, torej mehke množice (Usenik, 2008), (Usenik, Turnšek, 2013).

Matrika D torej lahko poleg eksaktnih vrednosti (ostrih števil) vsebuje tudi mehke množice (mehka števila), opisane z besedami. Zaradi tega je seveda problem odločanja po več lastnostih, kjer se kot podatki pojavijo tudi mehke množice, potrebno modificirati.

Mehko odločanje po več lastnostih bomo reševali v dveh korakih: a) najprej bomo mehke izraze nadomestili z ostrimi števili, tako da bo odločitvena matrika D vsebovala le ostre številčne podatke, nato pa bomo b) problem reševali naprej po algoritmu, ki je opisan v točki 2.1 (AHP, VIKOR).

Načinov in metod, kako pretvorimo mehka števila v ostra števila, je več, načeloma gre za postopek rangiranja mehkih množic. V tem članku bomo v ta namen uporabili metodo Chena in Hwanga (Chen, Hwang, 1992). Po tej metodi dobimo iz mehke množice ostro število z uporabo dveh posebnih mehkih množic: mehki minimum in mehki maksimum, ki sta definirani s pripadnostnima funkcijama (3.01) in (3.03), prikazani pa na sliki 2.

$$\mu_{\max}(x) = \begin{cases} x, & 0 \leq x \leq 1 \\ 0, & \text{drugod} \end{cases} \quad (3.01)$$

$$\mu_{\min}(x) = \begin{cases} -x+1, & 0 \leq x \leq 1 \\ 0 & \text{drugod} \end{cases} \quad (3.02)$$

S pomočjo mehkih množic mehki minimum in mehki maksimum izračunamo levo $\mu_L(\tilde{A})$ in desno pripadnost $\mu_R(\tilde{A})$ mehke množice \tilde{A} .

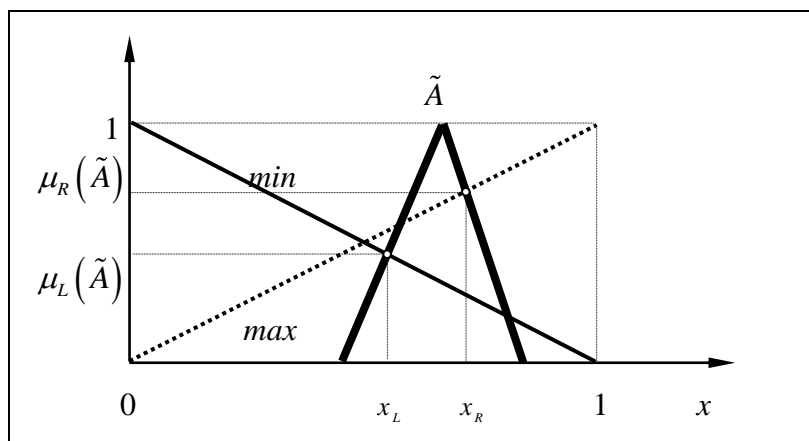
Leva in desna vrednost pripadnosti sta določeni z izrazoma (3.03) in (3.04).

$$\mu_R(\tilde{A}) = \max_x (\mu_{\tilde{A} \cap \max}(x)) = \max_x \{ \min [\mu_{\tilde{A}}(x), \mu_{\max}(x)] \} \quad (3.03)$$

$$\mu_L(\tilde{A}) = \max_x (\mu_{\tilde{A} \cap \min}(x)) = \max_x \{ \min [\mu_{\tilde{A}}(x), \mu_{\min}(x)] \} \quad (3.04)$$

Ti dve vrednosti skupno vsebujeta vse informacije, vsebovane v mehki množici \tilde{A} . Ker večji $\mu_R(\tilde{A})$ predstavlja večji desni del mehke množice, večja vrednost $\mu_L(\tilde{A})$ pa večji del levega dela trikotne mehke množice, je skupna vrednost (rang) mehke množice določena z izrazom (3.05).

$$\mu_T(\tilde{A}) = \frac{\mu_R(\tilde{A}) + (1 - \mu_L(\tilde{A}))}{2} \quad (3.05)$$



Slika 2: Desna ($\mu_R(\tilde{A})$) in leva ($\mu_L(\tilde{A})$) pripadnost mehke množice \tilde{A}

Število $\mu_T(\tilde{A})$ predstavlja ostro vrednost, ki jo v odločitveni matriki D priredimo posamezni mehki množici. Na ta način dobimo v matriki D sama ostra števila in nato lahko uporabimo postopek reševanja problema odločanja po več lastnostih, ki smo ga spoznali v prejšnjem poglavju.

3.2 Model določanja organizacijske oblike nove univerze

Vzemimo hipotetično situacijo, da želijo v nekem kraju (npr. v Novem mestu) ustanoviti univerzo. V tem kraju že deluje trenutno več visokošolskih zavodov, različno organiziranih, različno upravljanih in različno financiranih. Nekateri so zasebni zavodi s koncesijo, nekateri so zasebni zavodi brez koncesije, (vsaj) eden pa je državni zavod.

V članku (Usenik, 2012) je razvit mehki model, ki prikazuje možnosti in pasti ustanavljanja nove univerze, v tem članku pa se omejimo na to, kakšna naj bi bila nova univerza.

Skratka, odločevalci želijo ugotoviti, kakšno univerzo bi ustanovili da bodo v čim večji meri zadostili štirim kriterijem, ki jih v svojih dokumentih omenja NAKVIS (Merila NAKVIS, 2014). Kriterije bomo v nekaterih niansah dopolnili oziroma združili.

Kriterij X_1 je vpetost v okolje, kar pomeni:

- sodelovanje z gospodarstvom in negospodarstvom,
- ugotovljene zaposlitvene možnosti diplomantov.

Kriterij X_2 je delovanje in kakovost, kar pomeni:

- jasno poslanstvo in vizija,
- strategija vsebuje načrt in uresničevanje ciljev,
- iz načrta notranje organiziranosti so jasno razvidne pristojnosti, naloge in dolžnosti vodstva, vseh zaposlenih in študentov,
- opredeljena so področja: študijska po ISCED in KLASIUS, znanstvene discipline po FRASCATI,
- izkazano je znanstveno raziskovalno in strokovno delo,

- opredeljene so učne vsebine,
- načrtovana je kakovost izidov in kompetenc, ki bo omogočala zaposlitev,
- vzpostavljeno je znanstveno-raziskovalno sodelovanje z drugimi visokošolskimi zavodi, inštituti, podjetji in drugimi organizacijami, v Sloveniji in tujini,
- sklenjeni so dogovori s podjetji ter mentorji za izvajanje prakse,
- narejen je načrt za vzpostavitev notranjega sistema kakovosti zavoda,
- zagotovljeno bo redno zbiranje in analiza podatkov o učnih izidih študentov ter celotnega izobraževanja,
- vključevanje vseh zaposlenih in študentov v presojo kakovosti in ugotavljanje pomanjkljivosti,
- redno seznanjanje študentov in drugih deležnikov z ukrepi za izboljševanje kakovosti,
- načrtovanje periodičnih samoevalvacij z natanko določenimi postopki,
- visoka etičnost vseh zaposlenih in prenašanje tega na študente.

Kriterij X_3 predstavlja materialne pogoje in financiranje, kar pomeni:

- zagotovljeni so prostori in oprema,
- izdelana je ocena finančnih sredstev in predvideni viri financiranja,
- zagotovljena je sodobna informacijsko-komunikacijska oprema in druga oprema, potrebna za izvajanje študijskih programov ter znanstveno-raziskovalno delo,
- urejena je knjižnica,
- zagotovljen je stabilen in sistemski vir financiranja.

Kriterij X_4 pa so kadri in študenti, kar pomeni:

- ustrezno število in struktura visokošolskih učiteljev, znanstvenih delavcev ter visokošolskih sodelavcev z veljavnimi izvolitvami v naziv,
- osnutek meril za izvolitve v naziv mora upoštevati minimalne standarde,
- število učiteljev mora zadoščati za oblikovanje senata, v katerem morajo biti zastopana vsa študijska področja,
- struktura in število podpornih delavcev mora zadoščati kakovostni izvedbi,
- oseba, odgovorna za študentske zadeve, mora biti v delovnem razmerju,
- zagotovljeno je neposredno vključevanje študentov v strokovno, znanstveno-raziskovalno dejavnost in v organe upravljanja.

Alternative so različne organizacijske oblike morebitne univerze. Vzemimo, da imamo 5 različnih možnosti.

Alternativa A_1 je javna (državna) univerza, alternativa A_2 je zasebna univerza s koncesijo, alternativa A_3 je zasebna univerza brez koncesije, alternativa A_4 je kampus ene od obstoječih univerz in alternativa A_5 je rahla povezava obstoječih zavodov.

4 Rezultati

Kriterije X_1, X_2, X_3 ocenimo z lestvico ocen od 1 do 10, kriterija X_4 in X_5 pa naj bosta dana opisno, torej z mehкими množicami.

Kriterij »materialni pogoji in financiranje« predstavlja mehko spremenljivko, ki jo opišemo s štirimi opisi (mehkimi množicami). MATERIALNI POGOJI = {NEGOTOVI, SOLIDNI, STABILNI, ZELO_STABILNI}.

Kriterij »kadri« pa opišemo s tremi mehкими množicami, KADRI = {POVPREČNI, DOBRI, VRHUNSKI}.

Vse ocene so seveda subjektivne in se lahko spreminjajo. Pri kriteriju »vpetost v okolje« smo upoštevali, da je zasebna univerza brez koncesije eksistenčno odvisna od sodelovanja z gospodarstvom in negospodarstvom, zato ji tu pripišemo oceno 10. Podobno velja za kriterij »delovanje in kakovost«, kjer se mora nekoncesioniran zavod izjemno potruditi tudi na tem področju, medtem ko ostalim to v taki meri ni potrebno.

Vse ocene, subjektivne, kot rečeno, so vidne v tabeli 4.

Tabela 4: Podatki za mehko odločanje po več lastnostih

Kriteriji	X_1 - vpetost	X_2 - delovanje, kakovost	X_3 - materialni pogoji, finance	X_4 - Kadri
A_1 - javna univerza	7	9	ZELO_STABILNI	VRHUNSKI
A_2 - zasebna univerza s koncesijo	7	6	STABILNI	POVPREČNI
A_3 - zasebna univerza brez koncesije	10	10	NEGOTOVI	DOBRI
A_4 - kampus ene od obstoječih univerz	6	7	STABILNI	DOBRI
A_5 - rahla povezava zavodov	5	8	SOLIDNI	DOBRI

Matrika odločanja D je takšna:

$$D = \begin{bmatrix} 7 & 9 & ZELO_STABILNI & VRHUNSKI \\ 7 & 6 & STABILNI & POVPREČNI \\ 10 & 6 & NEGOTOVI & DOBRI \\ 6 & 7 & STABILNI & DOBRI \\ 5 & 8 & SOLIDNI & DOBRI \end{bmatrix} \quad (4.01)$$

V postopku reševanja moramo po metodi AHP najprej določiti uteži posameznih kriterijev. Vzemimo, da je medsebojna paroma primerjava kriterijev takšna, kot jo vidimo v tabeli 5.

Tabela 5: Medsebojna primerjava kriterijev

	vpetost	delovanje, kakovost	materialni pogoji, financiranje	kadri, študenti
vpetost	1	1/2	1/3	2
delovanje, kakovost	2	1	1/3	3
materialni pogoji, financiranje	3	3	1	2
kadri, študenti	1/2	1/3	1/2	1

Kriteriju »materialni pogoji, financiranje« smo pripisali največjo težo, saj je urejeno financiranje predpogoj za vsakršno delovanje, še zlasti za visoko kvalitetno. Temu kriteriju smo pripisali trikrat pomembnejšo vlogo od »vpetosti«, trikrat pomembnejšo od »delovanja« in dvakrat pomembnejšo od kriterija »kadri«.

Matrika medsebojnih povezav je

$$A = \begin{bmatrix} 1 & \frac{1}{2} & \frac{1}{3} & 2 \\ 2 & 1 & \frac{1}{3} & 3 \\ 3 & 3 & 1 & 2 \\ \frac{1}{2} & \frac{1}{3} & \frac{1}{2} & 1 \end{bmatrix} \quad (4.02)$$

V skladu z AHP metodo najprej izračunamo pripadajočo normalizirano matriko

$$A_{\text{NORM}} = \begin{bmatrix} 0,1538 & 0,1030 & 0,1542 & 0,2500 \\ 0,3077 & 0,2070 & 0,1542 & 0,3750 \\ 0,4616 & 0,6210 & 0,4611 & 0,2500 \\ 0,0769 & 0,0690 & 0,2305 & 0,1250 \end{bmatrix}$$

Elemente normalizirane matrike dobimo tako, da delimo vsak element v stolpcu j matrike A z vsoto vseh elementov stolpca j . Tako je npr. vsota vseh elementov v 1. stolpcu 6,5. Elemente 1. stolpca torej zapored delimo s 6,5 in dobimo elemente 1. stolpca v normalizirani matriki: 0,1538; 0,3077; 0,4616 in 0,0769. Na enak način dobimo elemente ostalih treh stolpcev. Vsota elementov po stolpcih je seveda 1.

Za prvo alternativo je povprečna utež:

$$w_1 = \frac{0,1538 + 0,1030 + 0,1542 + 0,2500}{4} = 0,16530$$

Podobno še:

$$w_2 = \frac{0,3077 + 0,2070 + 0,1542 + 0,3750}{4} = 0,26090$$

$$w_3 = \frac{0,4616 + 0,6210 + 0,4611 + 0,2500}{4} = 0,44845$$

$$w_4 = \frac{0,0759 + 0,0690 + 0,2305 + 0,1250}{4} = 0,12535$$

Vektor uteži je $\bar{w} = (0.16530, 0.26090, 0.44845, 0.12535)$. Vsota vseh uteži je seveda 1.

Kriteriju “vpetost” pripada delež 0,1653 glede na celotno utež, kriteriju “delovanje” pripada delež 0,2609 itd. Kriteriju “materialni pogoji” pripada največja utež, saj smo tako zastavili že primerjavo po parih v matriki A .

Sedaj moramo preveriti konsistenco naše medsebojno paroma določene primerjave. To storimo, kot je bilo že povedano, v štirih korakih.

1. korak: izračunamo $A\bar{w}^T$.

$$A\bar{w}^T = \begin{bmatrix} 1 & \frac{1}{2} & \frac{1}{3} & 2 \\ 2 & 1 & \frac{1}{3} & 3 \\ 3 & 3 & 1 & 2 \\ \frac{1}{2} & \frac{1}{3} & \frac{1}{2} & 1 \end{bmatrix} \begin{bmatrix} 0,16530 \\ 0,26090 \\ 0,44845 \\ 0,12535 \end{bmatrix} = \begin{bmatrix} 0,69585 \\ 1,11687 \\ 1,97742 \\ 0,51913 \end{bmatrix}$$

1. drugi korak: izračunamo N .

$$N = \frac{1}{n} \sum_{i=1}^n \frac{i\text{-ti element v matriki } A\bar{w}^T}{i\text{-ti element vektorja } \bar{w}^T} =$$

$$= \frac{1}{4} \left[\frac{0,69585}{0,16530} + \frac{1,11687}{0,26090} + \frac{1,97742}{0,44845} + \frac{0,51913}{0,12535} \right] = 4,2575$$

3. korak: izračunamo indeks usklajenosti CI .

$$CI = \frac{N - n}{n - 1} = \frac{4,2575 - 4}{3} = 0,085$$

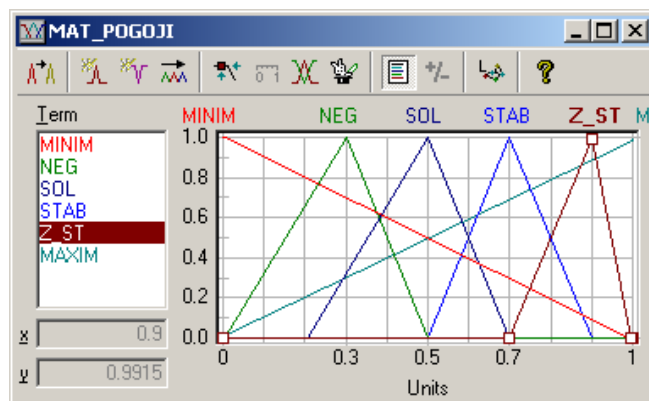
4. korak: primerjamo izračunani CI s slučajnim indeksom RI za določen n (v našem primeru je $n = 4$). Ker je kvocient $\frac{CI}{RI} = \frac{0,085}{0,90} = 0,094 < 0,10$, to pomeni, da so medsebojne primerjave parov primerne in uteži w_1, w_2, w_3, w_4 dobre za nadaljevanje postopka.

Vrnimo se na matriko odločanja (4.01).

$$D = \begin{bmatrix} 7 & 9 & ZELO_STABILNI & VRHUNSKI \\ 7 & 6 & STABILNI & POVPREČNI \\ 10 & 6 & NEGOTOVI & DOBRI \\ 6 & 7 & STABILNI & DOBRI \\ 5 & 8 & SOLIDNI & DOBRI \end{bmatrix}$$

Kriterija X_3 in X_4 sta mehka, zato ju moramo predhodno transformirati v ostra števila. V tem primeru bomo to storili s Chen & Hwangovo metodo (Chen, Hwang, 1994), (Usenik, 2008).

Začnimo z mehko spremenljivko MATERIALNI_POGOJI (slika 3). Pri tem smo uporabili programsko orodje FuzzyTech (FuzzyTech, 2002).



Slika 3: Pripadnostne funkcije mehkih spremenljivk MATERIALNI_POGOJI, MIN in MAX

Analični izrazi vseh mehkih množic so:

MINIMUM: $\mu_{MIN} = -x + 1$

MAKSIMUM: $\mu_{max} = x$

NEGOTOVI:
$$\mu_{NEGOTOVI} = \begin{cases} \frac{10}{3}x & 0 \leq x \leq 0,3 \\ -5x + \frac{5}{2} & 0,3 \leq x \leq 0,5 \end{cases}$$

SOLIDNI:
$$\mu_{SOLIDNI} = \begin{cases} \frac{10}{3}x - \frac{2}{3} & 0,2 \leq x \leq 0,5 \\ -5x + \frac{7}{2} & 0,5 \leq x \leq 0,7 \end{cases}$$

STABILNI:
$$\mu_{STABILNI} = \begin{cases} 5x - \frac{5}{2} & 0,5 \leq x \leq 0,7 \\ -5x + \frac{9}{2} & 0,7 \leq x \leq 0,9 \end{cases}$$

ZELO_STABILNI:
$$\mu_{STABILNI} = \begin{cases} 5x - \frac{7}{2} & 0,7 \leq x \leq 0,9 \\ -10x + 10 & 0,9 \leq x \leq 1,0 \end{cases}$$

Po formulah (3.03) – (3.05) dobimo range za vse mehke množice mehkega kriterija X_3 .

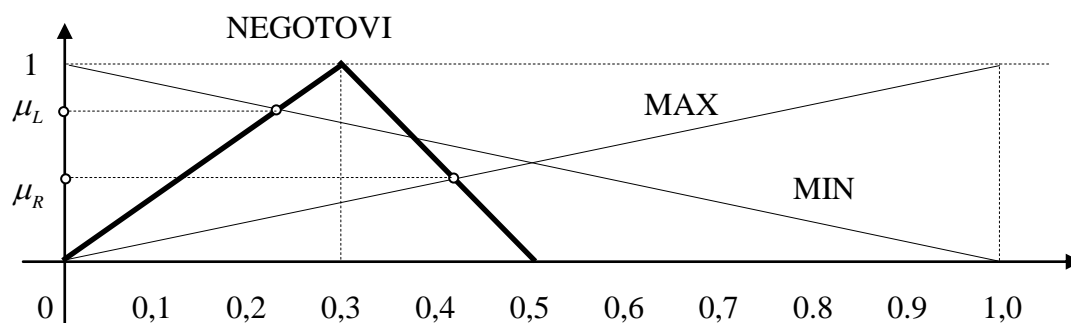
Mehka množica NEGOTOVI:

$$\mu_{MIN} = -x + 1$$

$$\mu_{max} = x$$

$$\mu_{NEGOTOVI} = \begin{cases} \frac{10}{3}x & 0 \leq x \leq 0,3 \\ -5x + \frac{5}{2} & 0,3 \leq x \leq 0,5 \end{cases}$$

Od tod sledi (glej sliko 4):



Slika 4: Določanje ranga mehke množice NEGOTOVI

Levi odsek:

$$-x_L + 1 = \frac{10}{3}x_L \Rightarrow x_L = \frac{3}{13} \approx 0,231 \quad \text{in} \quad \mu_L(NEGOTOVO) = \frac{10}{13} \approx 0,796$$

Desni odsek:

$$x_R = -5x_R + \frac{5}{2} \Rightarrow x_R = \frac{5}{12} \approx 0,417 \quad \text{in} \quad \mu_R(NEGOTOVO) = \frac{5}{12} \approx 0,417$$

Rang mehke množice NEGOTOVI je potem

$$\mu_T(NEGOTOVO) = \frac{\mu_R(NEGOTOVO) - \mu_L(NEGOTOVO) + 1}{2} = 0,3015$$

Na enak način dobimo še ostale range.

Za mehko množica SOLIDNO je

$$\begin{aligned}x_L(\text{SOLIDNO}) &= \frac{5}{13} \approx 0,385 & \mu_L(\text{SOLIDNO}) &= \frac{8}{13} \approx 0,615 \\x_R(\text{SOLIDNO}) &= \frac{7}{12} \approx 0,583 & \mu_R(\text{SOLIDNO}) &= \frac{7}{12} \approx 0,583\end{aligned}$$

$$\mu_T(\text{SOLIDNO}) = \frac{\mu_R(\text{SOLIDNO}) - \mu_L(\text{SOLIDNO}) + 1}{2} = 0,493$$

Za mehko množico STABILNO je

$$\begin{aligned}x_L(\text{STABILNO}) &= \frac{7}{12} \approx 0,583 & \mu_L(\text{STABILNO}) &= \frac{5}{12} \approx 0,417 \\x_R(\text{STABILNO}) &= \frac{9}{12} = 0,7500 & \mu_R(\text{STABILNO}) &= \frac{9}{12} = 0,750\end{aligned}$$

$$\mu_T(\text{STABILNO}) = \frac{\mu_R(\text{STABILNO}) - \mu_L(\text{STABILNO}) + 1}{2} \approx 0,667$$

Za mehko množico ZELO_STABILNO pa je

$$\begin{aligned}x_L(\text{Z_STABILNO}) &= \frac{9}{12} = 0,750 & \mu_L(\text{Z_STABILNO}) &= \frac{3}{12} = 0,25 \\x_R(\text{Z_STABILNO}) &= \frac{10}{11} \approx 0,909 & \mu_R(\text{Z_STABILNO}) &= \frac{10}{11} \approx 0,909\end{aligned}$$

$$\mu_T(\text{Z_STABILNO}) = \frac{\mu_R(\text{Z_STABILNO}) - \mu_L(\text{Z_STABILNO}) + 1}{2} \approx 0,828$$

Torej so rangi mehkih množic slučajne spremenljivke MATERIALNI_POGOJI naslednji:

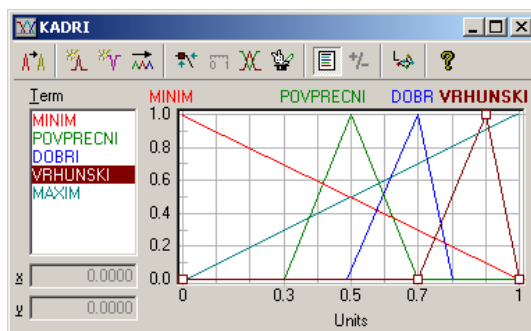
$$\mu_T(\text{NEGOTOVO}) = 0,302$$

$$\mu_T(\text{SOLIDNO}) = 0,493$$

$$\mu_T(\text{STABILNO}) = 0,667$$

$$\mu_T(\text{ZELO_STABILNO}) = 0,828$$

Na podoben način izračunajmo še range mehke spremenljivko KADRI (slika 5):



Slika 5: Pripadnostne funkcije mehkih spremenljivk KADRI, MIN in MAX

Enačbe mehkih množic so:

$$\mu_{POVPREČNI} = \begin{cases} 5x - \frac{3}{2} & 0,3 \leq x \leq 0,5 \\ -5x + \frac{7}{2} & 0,5 \leq x \leq 0,7 \end{cases}$$

$$\mu_{DOBRI} = \begin{cases} 5x - \frac{5}{2} & 0,5 \leq x \leq 0,7 \\ -10x + 8 & 0,7 \leq x \leq 0,8 \end{cases}$$

$$\mu_{VRHUNSKI} = \begin{cases} 5x - \frac{7}{2} & 0,7 \leq x \leq 0,9 \\ -10x + 10 & 0,9 \leq x \leq 1,0 \end{cases}$$

Sedaj izračunamo pripadajoče range.

Za mehko množico POVPREČNI je

$$x_L(POVPREČNI) = \frac{5}{12} \quad \mu_L(POVPREČNI) = \frac{7}{12}$$

$$x_R(POVPREČNI) = \frac{7}{12} \quad \mu_R(POVPREČNI) = \frac{7}{12}$$

$$\mu_T(POVPREČNI) = 0,500$$

Za mehko množico DOBRI dobimo

$$x_L(DOBRI) = \frac{7}{12} \quad \mu_L(DOBRI) = \frac{5}{12}$$

$$x_R(DOBRI) = \frac{8}{11} \quad \mu_R(DOBRI) = \frac{8}{11}$$

$$\mu_T(DOBRI) \square 0,655$$

In še za mehko množico VRHUNSKI

$$\begin{aligned}x_L(\text{VRHUNSKI}) &= \frac{9}{12} & \mu_L(\text{VRHUNSKI}) &= \frac{3}{12} \\x_R(\text{VRHUNSKI}) &= \frac{10}{11} & \mu_R(\text{VRHUNSKI}) &= \frac{10}{11} \\ \mu_T(\text{VRHUNSKI}) &= 0,830\end{aligned}$$

Rangi za mehko spremenljivko KADRI so torej

$$\mu_T(\text{POVPRECNI}) = 0,500$$

$$\mu_T(\text{DOBRI}) = 0,655$$

$$\mu_T(\text{VRHUNSKI}) = 0,830$$

Na ta način so vsi podatki ostra števila (tabela 6).

Tabela 6: Ostri podatki za mehko odločanje po več lastnostih

Kriteriji alternative	X_1 - vpetost	X_2 - delovanje, kakovost	X_3 - Finance, materialni pogoji	X_4 - Kadri
A_1 - javna univerza	7	9	0,828	0,830
A_2 - zasebna univerza s koncesijo	7	6	0,667	0,500
A_3 - zasebna univerza brez koncesije	10	10	0,302	0,655
A_4 - kampus ene od obstoječih univerz	6	7	0,667	0,655
A_5 - rahla povezava zavodov	5	8	0,493	0,655

$$D = \begin{bmatrix} 7 & 9 & 0,828 & 0,830 \\ 7 & 6 & 0,667 & 0,500 \\ 10 & 6 & 0,302 & 0,655 \\ 6 & 7 & 0,667 & 0,655 \\ 5 & 8 & 0,493 & 0,655 \end{bmatrix}$$

Po formulah (2.02) – (2.09) dobimo vse potrebne informacije za sprejem odločitve.

Najprej po formuli(2.03) izračunamo normalizirano odločitveno matriko D' .

$$D' = \begin{bmatrix} 0,4350 & 0,5518 & 0,5992 & 0,5563 \\ 0,4350 & 0,3679 & 0,4827 & 0,3351 \\ 0,6214 & 0,3679 & 0,2185 & 0,4390 \\ 0,3728 & 0,4292 & 0,4827 & 0,4390 \\ 0,3107 & 0,4904 & 0,3568 & 0,4390 \end{bmatrix}$$

Nato matriko D' pomnožimo z utežmi (elemente 1. stolpca množimo z utežjo w_1 , elemente 2. stolpca množimo z utežjo w_2 in tako do konca) ter dobimo matriko V . Ker so uteži zaporedoma $w_1 = 0,16525$, $w_2 = 0,26085$, $w_3 = 0,44842$, $w_4 = 0,12535$, dobimo

$$V = \begin{bmatrix} 0,07188 & 0,14394 & 0,26869 & 0,06973 \\ 0,07188 & 0,09597 & 0,21645 & 0,04200 \\ 0,10269 & 0,09597 & 0,09798 & 0,05547 \\ 0,06161 & 0,11196 & 0,21645 & 0,05547 \\ 0,05134 & 0,12792 & 0,16000 & 0,05547 \end{bmatrix}$$

Iz matrike V izračunamo idealno “pozitivno” rešitev A^+ in idealno “negativno” rešitev A^- .

Ker so v našem primeru vsi štirje kriteriji vezani na maksimum, dobimo iz

$$A^+ = \left\{ \left(\max v_{ij} \mid j \in J \right) \mid i = 1, 2, \dots, m \right\} = \{v_1^+, v_2^+, \dots, v_n^+\}$$

$$A^- = \left\{ \left(\min v_{ij} \mid j \in J \right) \mid i = 1, 2, \dots, m \right\} = \{v_1^-, v_2^-, \dots, v_n^-\}$$

tole:

$$A^+ = \{v_1^+, v_2^+, v_3^+, v_4^+\} = \{0,10269; 0,14394; 0,26869; 0,06973\}$$

$$A^- = \{v_1^-, v_2^-, v_3^-, v_4^-\} = \{0,05134; 0,09597; 0,09798; 0,04200\}$$

Zaradi

$$S_i^+ = \sqrt{\sum_{j=1}^n (v_{ij} - v_j^+)^2} = \sqrt{(v_{i1} - v_1^+)^2 + (v_{i2} - v_2^+)^2 + \dots + (v_{in} - v_n^+)^2} \quad i = 1, 2, \dots, m$$

$$S_i^- = \sqrt{\sum_{j=1}^n (v_{ij} - v_j^-)^2} = \sqrt{(v_{i1} - v_1^-)^2 + (v_{i2} - v_2^-)^2 + \dots + (v_{in} - v_n^-)^2} \quad i = 1, 2, \dots, m$$

dobimo:

$$S_1^+ = 0,03081; S_2^+ = 0,12366; S_3^+ = 0,17789; S_4^+ = 0,07512; S_5^+ = 0,12211$$

$$S_1^- = 0,18065; S_2^- = 0,12014; S_3^- = 0,05309; S_4^- = 0,12074; S_5^- = 0,07105$$

Efektivne oddaljenosti alternativ so po formuli $C_i^* = \frac{S_i^-}{S_i^+ + S_i^-}$ ($i = 1, 2, 3, 4$) naslednje:

$$C_1^* = 0,85430; C_2^* = 0,49278; C_3^* = 0,22985; C_4^* = 0,61646; C_5^* = 0,36783.$$

To pomeni, da alternative po primernosti rangiramo tako: A_1, A_4, A_2, A_5, A_3 .

Glede na dane podatke in predpostavke je najprimernejša alternativa A_1 , torej ustanovitev javne univerze.

5 Zaključek

V članku smo z uporabo mehke metode odločanja po več lastnostih primerjali primerne organizacijske oblike novo nastajajoče univerze. Takšnih variant, ki v našem primeru predstavljajo alternative za odločanje, je več, omenili smo 5 najbolj smiselnih. Vsaka alternativa ima več možnih kriterijev ocenjevanja in s tem v končni fazi sprejemanja odločitve. Ker je v konkretnem primeru govor o univerzi, smo v ta namen izbrali kar kriterije, ki jih uporablja Nacionalna agencija RS za kakovost v visokem šolstvu NAKVIS (Merila, 2014): vpetost v okolje, delovanje in kakovost, materialni pogoji in financiranje, kadri/študenti.

Po zahtevah teoretičnega matematičnega modela je potrebno pomembnost kriterijev paroma primerjati med seboj. To pa se pri vsakem konkretnem problemu pokaže kot prav posebna zadrega, ker je presoja, kaj je bolj (ali pa manj) in kolikokrat od nečesa drugega, zagotovo vsaj deloma subjektivna. Prav to je potrebno izpostaviti tudi v našem primeru. Matrika (4.02) prikazuje zamišljene močnostne odnose med posameznimi kriteriji. Kot najpomembnejši kriterij smo privzeli materialne pogoje in financiranje. Pri tem izhajamo iz temeljnega dejstva, da brez finančnih sredstev ne more delovati noben zavod, še najmanj univerza na začetku svoje poti. Brez denarja pač ne bo niti izvrstnih kadrov in s tem niti izvrstnih študentov. Vsekakor pa je žal možna ravno obratna situacija, ko tudi z denarjem tega ni, vendar to že spada na področje etike in akademskega ravnanja, predvsem vodstva akademske organizacije. Nikakor se ne sme zgoditi, da bi predavanja izvajali asistenti, vaje pa laboranti oz. demonstratorji, profesorji pa bi tačas opravljali donosne posle. Prav tako je za urejeno akademsko okolje nedopustno, da bi vodstvo zaposlovalo učitelje, asistente in ostale sodelavce le za nekaj mesecev, saj na ta način kontinuiteta in zlasti kvaliteta raziskovalnega in pedagoškega dela ne bo dobra. Skratka, zagotovljeno financiranje je kljub vsemu predpogoj za delovanje, zato smo mu v modelu pripisali izstopajočo utež.

Rezultat, ki ga dobimo, je vsekakor v največji odvisnosti od vhodnih podatkov, ki jih v modelu uporabimo, pa naj gre za ocenjevanje možnih alternative z ostrimi števili (mi smo vzeli lestvico od 1 do 10) ali pa za približno besedno ocenjevanje, torej z uporabo mehkih

množic. Sam algoritem je seveda matematično nevtralen in objektivni, robustnost in teža izhoda pogojuje kvaliteta in objektivna uporaba vhodnih podatkov. Vsekakor pa velja, tako kot vedno pri uporabi kvantitativnih metod kot pomoč pri odločanju, da so dobljeni rezultati zgolj dodatna pomembna informacija odločevalcu, nikakor pa niso edina in dokončna merila.

Če bi tako matriko A (moč kriterijev) kot matriko D (odločitvena matrika) spreminjali, bi lahko dobili tudi drugačen rezultat, kot je sedaj predstavljen v 4. poglavju. Vendar bi vsako precej različno uporabo ocen (ostrih in/mehkih) od te, predstavljene v našem modelu, kar težko zagovarjali. V morebitnem nadaljevanju raziskave, kjer bi se orientirali zlasti na robustnost ocen v matrikah A in D , bi bilo potrebno napraviti senzitivnostno analizo, s katero bi ugotovili intervale posameznih ocen, znotraj katerih se dobljene rešitve ohranjajo. Po drugi strani pa bi v nadaljevanju te konkretne raziskave o obliki nove univerze dobljeni model razširili s kakšnim novim dodatnim kriterijem ali s kakšno novo dodatno alternativo. Zelo zanimivo bi bilo tudi matematični model še bolj omehčati z večanjem število mehkih kriterijev vse do možnosti, da bi bili vsi kriteriji dani zgolj z opisnimi termi, to je z mehкими množicami. V modelu smo za mehke množice privzeli le trikotne pripadnostne funkcije, ker z njimi pač po definiciji najbolje opisujemo mehka števila. Mehka števila pa niso nujno te oblike (Zimmermann, 2001), njihove pripadnostne funkcije so lahko tudi trapezne oblike. Na ta način bi zagotovili še večjo fleksibilnost v mehkem odločanju, kar bi model obogatilo.

Ne smemo pa pozabiti, da je ustanavljanje univerze zahteven proces in da je podvržen tudi vsem aksiomom tekmovalnosti in konfliktov (Usenik, Turnšek, 2013).

Ob koncu lahko ugotovimo, da je mehko odločanje po več lastnostih matematično stabilno in da so rezultati v izbranem modelu univerze smiselni in tudi signifikantni. Vse navedene možnosti nadgradnje matematičnega modela pa bi pomenile kar velik in pomemben izziv nadaljevanja raziskave.

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Dr. Janez Usenik je redni profesor za področje “kvantitativne metode” (matematika, statistika, operacijske raziskave). Znanstveno in raziskovalno se ukvarja z metodami in postopki optimizacije v upravljanju sistemov. Zadnja leta intenzivno proučuje mehko logiko in nevronske mreže, kar uporablja kot znanstveno in metodološko orodje za raziskave na širokem področju aplikacij v sistemski teoriji. Napisal je preko sto znanstvenih člankov, ki jih je objavil doma in v tujini, je pa tudi avtor večjega števila univerzitetnih učbenikov in znanstvenih monografij.

Meta Vidiček je univerzitetna diplomirana pravnica in predavateljica za področje “pravo”. Je tajnik in prodekanja Visoke šole za upravljanje podeželja Grm Novo mesto in doktorska študentka na Fakulteti za organizacijske študije v Novem mestu.

Fuzzy multiple attribute decision making – university as an example

Abstract:

Research Question (RQ): The establishment of the university (in a certain place, it can also be University of Novo mesto) is time-consuming and extremely important process. A lot of criteria that influence on the decision as to what form of organization would be rational and advantageous should be taken into account. The question on which it will be answered is: is it possible to use quantitative methods to identify meaningful organizational structure of the University and how do we do that?

Purpose: The aim and objective of the research is to answer the above question and thereby give decision makers the possibility to use additional neutral informations.

Method: In the research the method of multiple attribute decision making is used. With the combination of AHP method and algorithm VIKOR a solution to the problem is given, when the input data are crisp numbers. However, since the input data are often, especially in the case of the University mainly descriptive and ambiguous terms, we have to use the principles (theorems) of fuzzy logic. Synthesis of the both methods is the fuzzy multiple attribute decision making method and used in this research.

Results: The results of the research show that scientific instruments that are used are meaningful and unambiguously answer the question. Of course, as with any quantitative method, it is necessary to take into account the robustness of the input data.

Organization: The research results can have a direct impact on the decisions of the organization of a possible new university.

Society: Impact of the research on society, social responsibility and the environment is direct, since with used algorithm these components are taken into account.

Originality: The study is original in (at least) two aspects: a) it defines the introduction of fuzzy sets in one of the methods of operation research and thus enables great flexibility in the use of partially imprecision and only in

words defined criteria / data and b) it applies an algorithm to the establishment of the University, which is new in the literature.

Limitations/Future Research: Limitations and also (paradoxically) the benefits of the research are in the interpretation and application of the input data. Continued research should go in the direction of use sensitive analysis of the results and the gradual introduction of an integrated fuzzy approach, in the final phase also in the upgrade of the algorithm with neurofuzzy learning.

Keywords: multiple attribute decision making, alternatives, criteria, fuzzy set, ranking, university.

Implementacija metode 5S v proces proizvodnje

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Povzetek:

Raziskovalno vprašanje (RV): Skozi raziskovalno nalogo smo želeli prikazati, kako uvedba metodologije dela 5S vpliva na sam proces proizvodnje, kje se kažejo največje spremembe v upravljanju zalog, delovnih pogojev ter urejenost delovnega mesta in kako se le-to odraža v kazalnikih uspešnosti.

Namen: Namen naloge je preučitev obstoječih metod in njihove uporabe v praksi in prikaz logičnosti ukrepov, ki jih s pomočjo metode 5S uvedemo v določen proces. Vse informacije smo poizkušali primerjati s praktičnim primerom iz podjetja X. Pridobljeni rezultati praktičnega primera so zagotovo osnova za nadaljnje izboljšave v preučevanem podjetju.

Metoda: Z metodo 5S smo dosegli pozitivne rezultate v izboljšavi delovnih mest in vzpostavljenega reda v podjetju ter s tem možnost za boljše upravljanje zalog.

Rezultati: Izredno pomembno je, v primeru, ko je edini cilj, ki ga zasledujemo, dobiček podjetja pri vnaprej znanih omejitvah, da prepoznamo vse ključne aktivnosti, ki so pomembne pri ustvarjanju dobička, vse ostale pa eliminiramo iz procesov.

Organizacija: Model 5S je uporaben na vseh nivojih organizacije, zato se ga lahko poslužujejo tudi najvišji nivoji menedžmenta pri vodenju podjetja.

Družba: Vpliv modela je zagotovo viden pri zaposlenih, saj jim tako ponudimo model, po katerem bodo delali dobro, hitro, varno, brez izgube časa, kar pa v današnjem svetu pomeni konkurenčno prednost.

Originalnost: Raziskovalna naloga predstavlja pomemben prispevek k implementaciji modela 5S v podjetje in pozitivnim dosežkom, ki jih prinaša.

Omejitve/nadaljnje raziskovanje: Raziskava kot študija primera je bila narejena v samo eni organizaciji, v kateri so bile implementirane vse faze metode. V smeri nadaljnjih raziskav je smiselno narediti kvantitativno analizo povečanja dobička, analizo povečanja zadovoljstva zaposlenih, ugotoviti zmanjšanje vpliva na okolje, itd.

Ključne besede: metoda 5S, implementacija 5S, vpliv 5S na uspešnost organizacije, snemanje delovnih procesov, vzpostavitev reda, mali koristni predlog, urejenost delovnega mesta.

1 Uvod

Glede na razmere na trgu v času gospodarske krize je izjemno pomembno, da prepoznamo vse priložnosti, ki bi kakorkoli povečale učinkovitost proizvodnje. Vsaka priložnost, s katero bi dosegli boljše rezultate, je pomembna, zato se je moramo lotiti s posebno pozornostjo. Vsaka prednost pred konkurenco, ki jo znamo izkoristiti, je dobra za podjetje in nam omogoča obstanek na trgu. Glede na to, da je proizvodni proces v podjetju X dokaj kompleksen, proizvodni prostori so veliki in v njem se izdelava ogromno različnih produktov. Glede na tako veliko število različnih modelov, ki jih podjetje izdeluje, je pomembna dobra organiziranost oziroma je pomembno, da je vzpostavljen red, ki zagotavlja, da se sestavni deli ne pomešajo, da ne iščemo sestavnih delov, pomembna pa je tudi hitrost izdelave. Ena od možnosti, ki jo lahko uporabimo za zmanjšanje stroškov je odstranitev nepotrebnih izgub v proizvodnem procesu. Nepotrebne izgube v proizvodnem procesu so vse tiste aktivnosti, ki proizvedu ne prinašajo dodane vrednosti. Ena težjih nalog pa je prepoznati te izgube.

*Korespondenčni avtor

Prejeto: 13. december 2015; revidirano: 6. januar 2016; sprejeto: 10. januar 2016.

Cilji raziskave so bili naslednji:

- pregled proizvodnega sistema v podjetju X,
- analiza stanja v proizvodnji podjetja,
- teoretična predstavitev metode 5S,
- predstavitev uporabe metode 5S v podjetju,
- ohranjanje novega stanja v proizvodnji.

Cilj članka je predstaviti organizacijo proizvodnje po sodobnih načelih, ki naj bi omogočila, da bi proizvedli več proizvodov boljše kakovosti in z zmanjšanimi stroški. Ko podjetje stabilno posluje, si nadaljnje želi napredka, izboljšav delovnega okolja, več kakovostnejših proizvodov s čim manj izmeta, kar vse je podlaga za uvedbo 5S.

Raziskava je bila pomembna, ker je omogočila podrobni opis prvotnega stanja v podjetju in katere izboljšave, zakaj in kako so bile uvedene v proces proizvodnje ter kakšno prednost so prinesle. Vsebina je zagotovo aktualna v razmerah krize, ko smo omejeni s finančnimi sredstvi, želimo pa, da bi v podjetju prišlo do določenih izboljšav in boljše učinkovitosti sredstev, ki jih imamo.

2 Opis trenutnega stanja

Metoda 5S je ena od številnih metod za doseg tako imenovane vitke proizvodnje (ang. *Lean Manufacturing*). Metoda 5S ne govori o tem, kako moramo imeti pospravljeno oziroma organizirano delovno mesto. Pomeni, da vse aktivnosti, ki so nepotrebne in nam povzročajo stroške ali nam odvzemajo čas, eliminiramo iz delovnega procesa. 5S je metoda, ki ni nikoli dokončana, saj vpeljuje aktivnosti vzdrževanja določenega doseženega izboljšanega stanja, se pravi, da je kontinuirana metoda, s katero nepretrgano izboljšujemo obstoječe procese. (Bain, 2010, str. 5)

5S koncept je ustvaril Hiroyuki Hirano. Mnogi strokovnjaki na področju vitkosti vidijo uvedbo metode kot najbolj pomemben korak za izboljšanje produktivnosti. (Lanigan, 2004, str. 70)

Mnogi strokovnjaki se poslužujejo različnih tehnik prepoznavanja potrat v podjetju in prepoznavanja potrebe po uvajanju metode 5S. Shoemalter (2011, str. 60) v svojem članku navaja način preverjanja stanja v podjetju glede potrat tako, da se počasi sprehodi skozi proizvodnjo in opazuje zaposlene, predvsem tehnike in kaj vse imajo na delovnem mestu.

Pri dvanajstmesečnem programu uvedbe 5S pri enem od EMS podjetij (electronic manufacturing services) so zabeležili naslednje izboljšave (Lanigan, 2004, str. 70-71):

- dodelava in popravila proizvodov v procesu so se zmanjšala za 60%
- čas proizvodnje je zmanjšan za 70%
- časi menjav (stroji, orodja) so zmanjšani za 40%
- output na zaposlenega se je zvišal za 11%
- boljše upoštevanje urnikov – izboljšanje za 60%

- sprostitev za 4000 sq. ft (cca. 370 m²) proizvodnega prostora za nadaljnje projekte.

Vzpostavljen sistem 5S izboljša kakovost, varnost, zagotavlja učinkovito organizacijo in se osredotoča na poenostavljenje delovnega okolja in minimizacijo odvečnih aktivnosti. Izražena je s petimi japonskimi besedami, ki izražajo čistost in red v organizaciji in sprejetje takšnega sistema. (Korkut, Ceklcler, Erdinler, Ulay, & Dogan, 2009, str. 1721) Te besede so:

- SEIRI – sortiraj (ang. *sort*)
- SEITON – organiziraj (ang. *set in order*)
- SEISO – očisti (ang. *shine*)
- SEIKETSU – standardiziraj (ang. *standardize*)
- SHITSUKE – vzdržuj (ang. *sustain*)

Z metodo 5S lahko zagotovimo čisto in na delo pripravljeno okolje, ki ima pozitiven vpliv na to, da delamo varno, kakovostno in učinkovito. Posredno dosežemo red in disciplino v podjetju in si zagotovimo pregled tudi nad najmanjšim detajlom v procesu. Skozi prve tri korake 5S pripravimo okoljske pogoje tako, da zmanjšamo delovne postopke, skozi zadnja dva koraka pa zagotovimo, da se ti postopki standardizirajo in uporabljajo naprej. (Korkut, Ceklcler, Erdinler, Ulay, & Dogan, 2009, str. 1721)

Eden od prav tako pomembnih faktorjev vpliva na uspeh je zagotovo, da se metoda dobro implicira v delovne procese, da se zaposleni navadijo, sprejmejo, vidijo pozitivne stvari pri uvedbi metode, ter da jo potem uporabljajo! Bistveno je, da se ne vrnemo v prvotno stanje in ključni dejavnik pri tem so zaposleni. V primeru nedelovanja v skladu s to filozofijo, se izboljšave v celoti ne bodo obdržale.

Večina strokovnjakov meni, da je peta faza najtežja faza uvedbe metode 5S. V tej fazi naj bi filozofija 5S predstavljala način našega razmišljanja, dela, življenja. Pomembno je, da nove delovne navade sprejmemo, do tiste meje, ko postanejo že rutina – nova rutina. (Howell, 2009, str. 19)

Glavni cilj učinkovitega očiščevalnega programa podjetja je sprejetje vseh zaposlenih, da je pospravljeno in očiščeno delovno mesto njihovo delo. Z vzpostavitvijo dnevnega čiščenja se lažje identificirajo izgube. (Becker, 2001, str. 30)

Kaj pa so pravzaprav prednosti uvedbe metode 5S? Podjetje, ki je po uvedbi metode 5S podrobno analiziralo stroške kakovosti (COQ – cost of quality) je ugotovilo letno zmanjšanje stroškov za povprečno 7% letno. Rezultat predstavlja velik uspeh in korak k vitkosti. (Steven, 2011, str. 32)

Ena od prednosti uvedbe metode 5S je vsekakor tudi varnostna komponenta. Z očiščenjem delovnega mesta, tako lažje odkrijemo morebitne napake, poškodbe,.. (Hough, 2008, str. 45)

Najbolj učinkovita metoda za ustvarjenje dobrega temelja za vitkost je dobro vidna proizvodnja, ki smo jo dosegli z implementacijo 5S (pravila petih stebrov).

V tabeli 1 je jasno predstavljen pomen faz metode 5S, zakaj je njihova uvedba pomembna ter izhodišča, ki jih z metodo 5S izboljšujemo.

Tabela 1. Prikaz faz metode 5S s prednostmi in slabostmi in izhodišči za izboljšave.

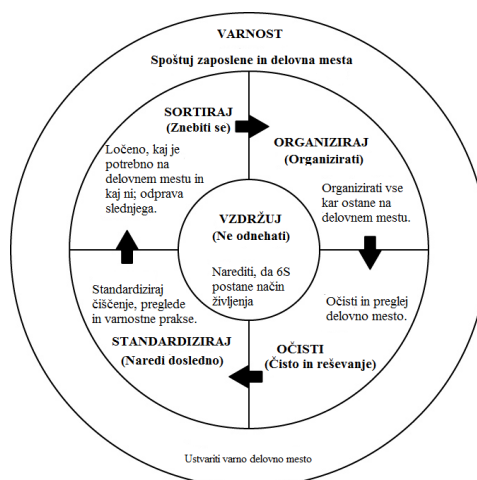
Steber	Kaj pomeni?	Zakaj je pomemben?	Katerim problemom se izognemo?
Sortiranje	<ul style="list-style-type: none"> odstranitev vseh predmetov, ki se jih v proizvodnih aktivnostih ne potrebuje ostanejo le še najnujnejše osnovne funkcije (če si v dvomih glede predmeta ga zavrzi in ne shranjuj!) 	<ul style="list-style-type: none"> učinkovitejša raba prostora, časa, finančnih sredstev, energije in ostalih resursov zmanjšanje problemov tekom proizvodnega procesa izboljšanje komunikacije med zaposlenimi večja kakovost proizvodov večja produktivnost 	<ul style="list-style-type: none"> v proizvodnji je gneča, zaradi tega je delo oteženo zaloge nepotrebnih stvari otežujejo komunikacijo porabljen čas za iskanje materiala in orodja neuporabljen material, orodja in stroji so dragi za vzdrževanje dodatne zaloge skrivajo probleme v proizvodnji nepotreben material in oprema nam otežujejo delo in onemogočajo da bi izboljšali tok procesa
Organiziranje	<ul style="list-style-type: none"> ureditev potrebnih elementov za lažjo uporabo označitev elementov, da jih vsak zaposleni lahko najdi in nato tudi pospravi 	<p>Eliminacija različnih izgub:</p> <ul style="list-style-type: none"> izguba časa za iskanje elementov izguba časa zaradi težave pri uporabi elementov izguba časa zaradi vračanja elementov 	<ul style="list-style-type: none"> izgubi časa za gibanje izgubi časa za iskanje izgubi človeške energije izgubam, ki jih povzročijo dodatne zaloge izgubi zaradi proizvodov z napako izgubi zaradi nevarnih pogojev dela
Očiščenje	<ul style="list-style-type: none"> vsakodnevno očiščenje delovnega mesta 	<ul style="list-style-type: none"> sprememba delovnega okolja v čist prostor, kjer zaposleni z veseljem delajo obdržati elemente na določenih mestih, da jih lahko hitro najdemo in uporabimo, ko jih potrebujemo 	<ul style="list-style-type: none"> zmanjšanje sončne svetlobe lahko vodi v znižano moralno in neučinkovito delo napake so manj opazne madežem olja in vode, ki povzročajo padce in poškodbe stroji, ki niso redno vzdrževani se lahko pokvarijo in povzročijo napake
Standardiziranje	<ul style="list-style-type: none"> integriranje vseh treh korakov v proizvodni proces 	<ul style="list-style-type: none"> izvajanje prvih treh faz in zagotovitev pogojev, da se ne vrnemo v začetno stanje 	<ul style="list-style-type: none"> pogoji za delo se vrnejo na prvotno raven delovni prostori so umazani in neurejeni skladišče orodja postane neorganizirano in s tem se izgublja čas za iskanje le-tega nered se sčasoma kopiči pojavi se nazadovanje
Vzdrževanje	<ul style="list-style-type: none"> vzdrževanje pravilnih postopkov, da postanejo rutina vzdrževanje discipline, s čimer se izognemo nazadovanju 	<ul style="list-style-type: none"> posledice neobdržanja uvedenega so večje kot rezultati, če se uvedeno vzdržuje 	<ul style="list-style-type: none"> neuporabne stvari se kopičijo orodje in šablone se ne vrnejo na označena mesta ni važno kako umazana je oprema, nič se ne naredi, da bi jo očistili predmeti so puščeni tako, da so potencialno nevarni temen, umazan in neurejen delovni prostor se kaže v nižji morali zaposlenega

Opomba. *: Povzeto in prirejeno iz *5S workplaces: when safety and lean meet*. *EHS Today*, 5(6), (str. 48), po Grover, J., 2012.

Casey (2013, str. 19-21) v svojem članku navaja vzroke za neuspeh implementacije 5S. Podjetja iz Severne Amerike so uvajala metodo 5S in z njo dosegla velik napredek glede urejenosti in čistoče, vendar se je pri večini neurejenost vrnila v nekaj mesecih. Enega od vzrokov za neuspeh avtor pripisuje kulturnim razlikam med Američani in Japonci, ki so metodo ustvarili in jo učinkovito uporabljajo že desetletja. Druga težava, ki jo izpostavlja je velika tekmovalnost Severnoameričanov, neprilagodljivost in želja po zmagi ne ozirajoč se na okolje, nasprotno pa je metoda 5S naklonjena prijazni tekmovalnosti. Tretja skrivnost neuspeha pa je začetek uvedbe modela z napačno fazo 5S.

Filozofijo 5S številni avtorji in strokovnjaki nadgrajujejo še z šesto komponento – varnostjo, zato model poimenujejo kar 6S. Menijo, da je varnost ena ključnih komponent, ki je pomembna za doseg učinkovitejšega proizvodnega procesa, zato je pri uvajanju metode potrebno upoštevati še varnostni vidik.

Na sliki 1 so shematično prikazani ciklusi uvajanja metode 5S + varnost = 6S. Faze metode si sledijo po modelu.



Slika 1. ZDA Environmental Protection Agency- šest stebrov 6S. Povzeto iz »EPA United States Environmental Protection Agency«.

Ključni komponenti filozofije sta urejenost in varnost, pri čemer je varnost intergrirana v prvih treh fazah metode 5S in se povezuje z okoljem, ki ga predstavlja 6.S. Standardizacija in vzdrževanje pa sta tisti dve fazi, ki poskrbita, da se varnost in vzpostavljen red glede urejenosti in čistoče obdržita (Grover, 2012, str. 47).

Grover (2012, str. 49) v svojem članku prepoznava varnost (safety) kot pomemben člen vitkosti, zato ga je poimenoval kar šesti S. Varnostni ukrepi, evidentirani na standardnih delovnih listih, so navadno odraz vrednotenja tveganj procesa, pri katerem gre za strukturiran pristop s katerim uredimo razvrstitveni seznam tveganj za vsako dejavnost. Z različnimi dejavnostmi, kot npr. zagotavljanjem osebne zaščitne opreme preprečujejo izpostavljenost tveganju (boljši izraz od tveganja je riziko, kajti tveganje je po definiciji v verjetnostnem računu tudi sama verjetnost, da se nek dogodek ne zgodi).

3 Analiza vpeljave 5S v podjetju X

Raziskovalna naloga je temeljila predvsem na implementaciji modela v praksi, članek pa predstavlja rezultate te raziskave. Ključna metoda, ki smo jo uporabili je metoda opazovanja, pogovori z zaposlenimi, z vodjo projekta pri analizi pa smo poskušali objektivno oceniti realno stanje po uvedbi prvih treh korakov, ter oceniti možnosti za vzdrževanje doseženega stanja.

Merilni inštrument je bil »snemanje« delovnih procesov in metoda opazovanja z udeležbo. Uporabili smo ga za analizo stanja prej/potem, se pravi pred uvedbo 5S in po uvedbi 5S. Razlike so bile takoj opazne. Velik napredek je bil viden predvsem pri boljšem upravljanju zalog, ki se tako odraža v bolj urejenem delovnem mestu.

Da smo razumeli sam proces proizvodnje, je smiselno, da smo spoznali samo organiziranost proizvodnje v podjetju X. V proizvodnji imajo več tekočih trakov oz. montažnih linij za sestavo različnih produktov. Vzporedno s proizvodnjo, da je omogočen lažji pretok in dostava materiala, poteka skladiščenje materiala za potrebe montažne linije.

1 faza metode »5S«

Vodja linije je pred začetkom uvedbe modela seznanil svoje sodelavce o modelu 5S, kako bo implementacija modela potekala, kakšne so vloge zaposlenih pri tem, ter kaj je namen uvedbe projekta. Z uvedbo sistema 5S smo začeli septembra 2011, pri njegovi implementaciji pa sodelujejo vsi zaposleni glede na funkcije in odgovornosti, ki jo imajo. Za boljšo učinkovitost smo na začetku formirali delovne skupine, v katero je bila vključena tudi logistika s svojim akcijskim načrtom. Za pridobitev določenih podatkov je bila izvedena delavnica za snemanje delovnih mest in aktivnosti, ki potekajo. Izvajanje sistema 5S se izvaja za sleherno delovno mesto posebej na različne načine. Poglavitni del sistema je obsegal tako imenovano snemanje delovnih operacij, pogovori z delavcem o izboljšavi in vključevanje delavca v izboljšavo del. postopkov,... Del tega je bilo tudi sistematično spodbujanje delavcev k inovativnim rešitvam v delovnem procesu, kar priča tudi neverjeten porast inovacij po izboljšavah, ki jih podajajo zaposleni. Sistem inovacij je v podjetju vzpostavljen tako, da je glede na ocenjen prihranek določena tudi sorazmerna denarna nagrada delavcu. Prav tako so bili na podlagi snemanih, pregledanih in analiziranih filmov pripravljene prvi koristni predlogi. Skozi predloge je bilo vrisanih večina talnih oznak in realiziranih 30% koristnih predlogov od septembra 2011. Sortiranje kot prvi korak modela 5S je bilo v proizvodnji prisotno že pred uvedbo modela. Po načrtu vrhunske prakse pa je bila zadeva dodatno izpopolnjena in nadgrajena s strani **zunanjega izvajalca in vodje projekta v podjetju X**, ki je odgovoren za uvajanje vrhunske proizvodne prakse. Da bi v podjetju lahko izvedli aktivnost sortiranja in organiziranja se je izvedlo snemanje delovnih operacij s katerim smo ugotovili katere stvari in aktivnosti so odvečne in povzročajo dodatno delo a nobene dodane vrednosti.

Proces sortiranja je potekal zelo natančno in se je začel pri sortiranja spojnih elementov oz. vijakov. Sprememba je bila več kot očitna. V preteklosti je seveda obstajal sistem sortiranja vijakov, ki se je z leti dopolnjeval. V sistemu 5S pa je bil dovršen do popolnosti. Oblikovali

so se tako imenovani otoki (polic), ki so razporejeni vzdolž linije in postavljeni glede na izvedeno študijo, bližje določenim delovnim skupinam. Na teh policah se dobavlja vijake značilne za določen krog monterjev, ki se jih sortira po velikosti in namembnosti. Prav tako je opažena sprememba pri dostavi lesnih-sestavnih delov pohištva. Prvotno so prihajali na videz preobremenjeni vozički, nesmiselno naloženi, s številnimi delovnimi nalogi. Pri tem je monter izgubil ogromno časa za iskanje določenega delovnega naloga in tudi za prelaganje, da je našel določen material. Sedaj je material transportiran za določene naloge posebej, s tem pa se izniči faza iskanja elementov (boljša preglednost) in zmanjša možnost poškodovanja sestavnih elementov še pred sestavo.

V proizvodnem prostoru so označene tudi transportne poti, ki ustrezajo standardom o varnosti in zdravju pri delu. Označeno je območje gibanja zaposlenih, ter območje transporta. Osrednja cona gibanja je tako razdeljena na območje transporta (viličarji), območje za prehode zaposlenih ter območje za delo (ob delovnem mestu). Označbe so tako talne, kot stenske v barvah rumene in pohodne zelene barve. Označbe so zelo pomembne, saj definirajo, kje se lahko zaposleni gibljejo, da je poskrbljeno za njihovo varnost.

2 faza metode »5S«

V procesu proizvodnje se je spremenil tudi način dostave materiala na delovno mesto, ki prihaja v zložljivih lesenih evro zabojih. Pri snemanju procesov so bile ugotovljene tudi določene izgube časa pri transportiranju zaradi načina embaliranja. Material prihaja na delovno mesto po sistemu JIT (ang. *Just in time*), kar pomeni, da je material dostavljen, ko ga delavec potrebuje in tako ne predstavlja zasičenosti delovnega prostora. Običajno je bilo potrebno za iskanje vijakov, kar nekaj časa. Sedaj so vijaki sortirani v zabojčkih, ločeni po obliki in velikosti, na točno določenim mestu, v točno določenem zabojčku, ki je predviden in označen (kataloška številka in dimenzija vijaka) za določen tip vijaka. Interni logisti, ki dobavljajo te vijake, pa vzdržujejo že vzpostavljen red.

Pri urejanju delovnih mest je bil v podjetju vzpostavljen določen sistem postavitve oz. dostavljanja materiala na paletah in zabojih na določeno mesto, označen s talnimi označbami (z rumenimi črtami). Pri vzpostavitvi sistema je bilo upoštevano, da so materiali in delovne mize postavljeni čim bolj ergonomsko in materiali za vgradnjo bližje in smiselno razporejeni izvajalcu naslednjih operacij. Posledica vpeljave sistema je tudi reorganizacija dela, s katero dosežemo racionalizacijo proizvodnega procesa. Poglavitno je, da se lahko dela hitreje, učinkoviteje, brez odvečnih izgub. Pri implementaciji je sodelovalo zunanje podjetje, ki naj bi podjetju predstavilo drugačen pogled na organizacijo, z določeno distanco, neobremenjeni in brez predsodkov.

3 faza metode »5S«

Sistem 5S je prinesel novosti na področju čiščenja delovnega prostora. Po temeljiti presoji so se vzpostavili tako imenovani otoki, ki imajo svojega skrbnika, ki je običajno skupinovodja. Na otokih je vzpostavljen red ločevanja odpadkov in ostalih čistilnih sredstev. Čiščenje delovnega prostora običajno poteka skozi dan po potrebi, da se zagotovi čisto delovno okolje

oz. najmanj enkrat dnevno ob koncu delavnika. Vsakodnevnega čiščenja se sedaj loteva le peščica delavcev, zato bi bilo smiselno uvesti določene ukrepe za tiste, ki ne spoštujejo pravil. Pravilnik o čiščenju oz. urnik med delavci bi tako vnesel red v proizvodnjo, da čiščenje ne bi opravljali samo nekateri delavci. V stalnem zagotavljanju in vzdrževanju reda na delovnem mestu ni bistvene porabe časa, ki se ta razdeli v medfazne operacije. Za dnevno čiščenje pa zaposleni porabijo običajno petnajst minut. Za vzdrževanje čistoče je določen vodja linije, kateri tudi izvaja ocenjevanje delovnih mest. Vodje linij skozi formularje 5S ocenjujejo in spremljajo dosežene rezultate oziroma zastavljene cilje.

Podjetje ima vzpostavljen standard ISO 14001, ki opredeljuje kakovost ravnanja z okoljem. V skladu s standardom v fazi sortiranja zagotavljajo, da se odpadki ločeno zbirajo. Nevarni odpadki (laki, razredčila, ...), ki se ne uporabljajo več, so ločeni od vseh ostalih, tudi zabojniki za tovrstne odpadke so standardizirani (primerni za nevarne snovi, da se ne uničijo). Ostali odpadki so ločeni, tudi zaradi večje možnost recikliranja.

4 faza metode »5S«

Za obveščanje zaposlenih je poskrbljeno z oglasni panoji, na katerih se zaposlene dnevno ali tedensko obvešča o aktivnostih projekta, vzpostavljenemu sistemu ocenjevanja, dogovorjenih aktivnostih in vseh ostalih zadevah za kakovostno izvajanja dela in informacij, ki so zato potrebne. V četrti fazi 5S so se uvedeni postopki standardizirali. Do sedaj pripravljene standardi znotraj projekta WCM (world class manufacturing – vrhunska proizvodnja praksa) se uskladijo z drugimi internimi standardi in ISO standardi.

5 faza metode »5S«

Cilj zadnje faze je bila vzpostavitev končnih, stalnih postopkov in sledenje le tem, ter prehod v fazo aktivne uporabe (vzdrževanje reda, redno ocenjevanje). Uporaba kazalnikov MKP (mali koristni predlogi) preide v aktivno fazo. Akcijski načrti pa so postali redno vodstveno orodje. Snemanje in analiza postopkov s pomočjo snemanja filmov so postali del redne prakse za odpravljanje ozkih grl in odpravljanje rezerv v procesih. Ob koncu se je izvedla zaključna ocena in podelitev 5S certifikata za tiste delovne skupine, ki so pokazale ustrezne rezultate. Podatki o izboljšavah so opisni, kažejo pa se kvalitativne izboljšave v procesu, saj je učinkovitost proizvodnje večja kot pred uvedbo modela. Čez čas pa pričakujemo, da se bodo rezultati odražali tudi skozi finančne kazalnike.

4 Prihranki in pridobitve

V podjetju je uvedena metoda 5S. Prepoznane so bile naslednje koristi:

- Krajši pretočni časi (ocenjen 2% dvig produktivnosti kot neposreden vpliv uvedbe metode),
- povečanje prostora za delo:
 - Pred uvedbo je bilo na delovnih mestih za pet delovnih nalogov (DN) materiala, sedaj za en DN ali manj.
 - Pred uvedbo je bila celotna pred montaža na tekočem traku, sedaj ločena od tekočega traku.

- možnost kreativnega sodelovanja vseh zaposlenih (oddanih MKP in IP):
 - V prvem letu uvedbe metode 340% porast v primerjavi s predhodno inovativno dejavnostjo.
 - Drugem letu uvedbe porast za 37% v primerjavi s prvim letom uvedbe.
 - Tretjem letu uvedbe upad za 29% v primerjavi s drugim letom uvedbe.

Po končani uvedbi metode so bile opazne tudi številne druge prednosti, ki jih ni bilo mogoče meriti. Številne izmed teh pridobitev so se nanašale na boljše delovne pogoje zaradi čistega delovnega okolja.

S sortiranjem in odstranitvijo odvečnih stvari iz delovnih prostorov smo povečali prostor za delo cca 20%. Vse to omogoča boljše delovne pogoje in večjo učinkovitost delovnih skupin. Ker so delovni prostori urejeni in določeni so prostori za material, zaloge in ostale pripomočke, so pretočni časi krajši za ocenjenih 2%. Metoda je zastavljena tako, da spodbuja zaposlene h kreativnemu sodelovanju pri vzpostavljanju večjega reda v proizvodnji motivira zaposlene, da predlagajo koristne predloge, ki se tudi denarno nagradijo. Finančna motivacija pa je običajno med najbolj priljubljenimi med zaposlenimi.

V podjetju so ponovno uvedli kar nekaj postopkov oziroma aktivnosti, ki naj bi bile pripomoček za dobro uvedbo 5S. Podjetje motivira svoje zaposlene za pripravo MKP (mali koristni predlogi), ki bi kakorkoli pripomogli k izboljšavi proizvodnega procesa. Prednost malih koristnih predlogov je, da se že znotraj tehničnega sektorja pregleda kateri predlogi so primerni za realizacijo in kateri ne. V okviru pristojnega sektorja se dogovori, kdo bo realiziral predlog. V kolikor gre za večje predloge, za katere je potrebno mnenje strokovnih služb, pa gre predlog še vedno v kadrovske splošni sektor in nato na obravnavo komisiji za inovacije.

Uvedeni so bili tudi EKO kotički, za sortiranje odpadkov v podjetju. S tem so tudi pripomogli k boljšem ločevanju in recikliranju nekaterih materialov. Skozi celoten proizvodnji proces poteka na osnovi akcijskega načrta ocenjevanje 5S, s katerim nadrejeni preverjajo ali zaposleni dosledno spoštujejo uvedena pravila. Vse koristne informacije v zvezi projektom 5S, so na panojih pri vsakem oddelku in seznanjajo zaposlene o vseh koristnih informacijah, ki jih pri delu potrebujejo. Regali za hrambo šablon so ločeni. Oskrbna mesta z materiali so tako imenovani »otočki«, ki jih oskrbujejo logisti.

Število oddanih MPK in IP (inventivnih predlogov) je v fazah implementacije 5S vedno večje, podjetje pa stremi, da bi koristne tudi uporabilo. V letu 2011 z uvedbo metode 5S smo beležili izjemen porast MPK in IP iz 77 predlogov v letu 2010 na 339 predlogov. Njihovo število je vztrajno rastlo tudi v letu 2012 s 466 oddanimi predlogi, kjer dosežejo vrhunec v številu oddanih predlogov. V letu 2013 smo beležili upad na 332 oddanih predlogov. Snemanja delovnih operacij so najbolje prikazala realno stanje, na podlagi teh pa je podjetje pripravilo koristne predloge. Več prostora in boljša urejenost sta pokazala prve pozitivne učinke na proizvodnem procesu.

Proizvodnja je sedaj bistveno bolj sistematično urejena, ni prenatrana, nasičena z materiali. Delovna mesta so prilagojena tako, da je vse manj nepotrebnih gibov, ta pa so čim bližje delovnim mestom v naslednji operaciji. Novost uvedbe pred montažne linije, kot samostojne enote je, da se transportira na montažo že gotove polproizvode. Razbremenitev montažne linije tako prinese bistvene prednosti pri organizaciji dela in tudi kakovosti.

Izboljšave, ki so bile narejene, so v proces vnesle veliko reda v sam delovni postopek in v organizacijo dela. Izboljšave so zajele celoten proizvodni proces vse od začetne do končne faze (dobava materiala v skladišče do proizvedenega končnega produkta).

Pri prvem koraku je zanimivo to, da pri nekaterih zaposlenih ni bilo potrebno uvesti nobenih sprememb pri sortiranju in organiziranju delovnega prostora. To kaže predvsem na to, da je sama osebnost zaposlenega prav tako ključna in pomembno vpliva za vzpostavljanje določenega reda v proces. Gre za lastnost, ki jo ima posameznik in je zanj nekaj samoumevnega, vsakdanjega. Če te lastnosti nima, jo za boljše delovanje procesa lahko priučimo, pomembno pa je, da jo obdržimo.

Ko smo iz delovnega prostora odstranili vse odvečne stvari, smo povečali preglednost nad prostorom, kar je zaposlenemu pripomoglo k hitrejšemu delu. Skozi analizo smo tudi potrdili, da čisto in urejeno delovno okolje omogoča zaposlenim boljše delovne pogoje. Vzpostavljen red pa nam tako omogoča boljši pregled nad zalogami in s tem omogoča boljše upravljanje letih. Lahko pa se hitro zgodi, da red ne bo vzdrževan in bodo zaposleni zopet prešli na svoje stare navade. V tem primeru je tudi motivacija ključnega pomena, da se vse dosežene izboljšave obdržijo.

Zagotovo gre za metodo, ki je brez velikih sredstev lahko uporabljena v vseh procesih določene organizacije, bodisi proizvodnje ali storitvene organizacije. Ključni element v sami implementaciji 5S v proces je delovni kolektiv, ki je sam izvedel prve tri faze, vodstvo pa jim je potem skozi zadnja dve pomagalo pri vzdrževanju določenega in že vzpostavljenega reda. Delavec je kot člen v procesu, ki najboljše ve kaj pri delovnih operacijah potrebuje in kaj ima na delovnem mestu za primer slučaja. Metoda je določene izboljšave pokazala takoj, vidni so vsi pozitivni vplivi na delovno okolje in zaposlene, ki v njem delajo.

5 Analiza raziskave s pomočjo ankete

Na osnovi pozitivnih učinkov na proizvodnjo po uvedbi metode 5S (tabela 2) so vodje skupin kot vodje linij ocenjevali prednosti in spremembe na tem področju. Za ocenjevanje strinjanja s trditvijo smo uporabili petstopenjsko Likertovo lestvico od 1 do 5, pri kateri je ocena 1 – sploh se ne strinjam, 2 – ne strinjam se s trditvijo, 3 – niti se strinjam niti ne strinjam, 4 – strinjam se, 5 – popolnoma se strinjam. Iz zbranih podatkov in podanih ocen smo nato izračunali povprečno oceno posamezne trditve, posamezne skupine vprašanih in skupno povprečno oceno sklopa vprašanj.

Tabela 2. Metoda 5S

	METODA 5S	Vodje skupin	Vodje linij	Skupaj
01	Podjetje je čisto in v njem ni nepotrebnih materialov, nepotrebne opreme in izmetnih izdelkov.	3,6	3,7	3,65
02	Transportne poti so jasno označene, čiste in brez ovir.	4	4,6	4,3
03	Talne oznake jasno razmejujejo delovne površine, transportne poti in odlagalne prostore za materiale (vključno s skladišči).	4,2	4,3	4,25
04	Zaboji z materialom so jasno označeni (vhodni material, vmesne zaloge, končni izdelki, lepila...).	3,9	3,7	3,8
05	Vsi zaposleni so dnevno vključeni v čiščenje delovnega okolja.	4,1	4,3	4,2
06	Zaposleni ne izgubljajo časa z iskanjem stvari na delovnem mestu, prenašanje tovora je minimalno.	3,2	3	3,1
07	Transportni vozički z materiali se dostavljajo za vsako delovno mesto posebej.	3,2	3,5	3,35
08	Nameščenost pripomočkov za delo je zadovoljiva in zadostna.	3,9	3,5	3,7
09	Zaposleni uporabljajo osebno varovalno opremo.	4,2	4,8	4,5
10	Omare za nevarne snovi so urejene in odpadki pravilno ločeni.	4	4,6	4,3
11	Oglasne table in navodila so urejeni, razvrščeni in na svojih-predvidenih mestih.	4,1	4,6	4,35
	Skupaj:	3,85	4,05	3,95

Na podlagi uvedbe metode 5S in pozitivnih učinkov na proizvodnjo (tabela 2) so vodje skupin kot vodje linij skoraj enotnega mnenja in sicer ocenjujejo stanje s povprečno oceno 3,95. Nobena povprečna ocena ni nižja od 3,00 zato lahko na podlagi pridobljenih rezultatov le pohvalimo prizadevanja vodstva, da se ta metoda ne le dobro uvede ampak, da jo zaposleni sprejmejo kot samoumevno dejstvo (sprejmejo kot način razmišljanja in tako istočasno prestopimo mejo naučenega s tem, da navade sprejmemo za svoje), da tako pač morajo biti stvari urejene, saj nam prinašajo izključno samo prednosti. Da je skupna ocena tako dobra, lahko sklepamo tudi, da se zaposleni zavedajo vseh prednosti uvedbe navedene metode. Povprečne ocene vodij linij so nekoliko višje kot ocene vodij skupin. Menimo, da slednji še prepoznajo določene rezerve za izboljšave na operativni ravni.

S povprečno oceno 4,6 so vodje linij ocenili stanje glede transportnih poti (točka 02), ki so jasno označene, čiste in brez ovir, urejenost omar za nevarne snovi in pravilno ločevanje odpadkov ter urejenost in razvrščenost oglasnih tabel in navodil. Z najvišjo povprečno oceno 4,8 so ocenili dejstvo, da zaposleni pri delu uporabljajo osebno varovalno opremo (točka 09). Z oceno nad 4 (vključno z oceno 4) so ocenili tudi naslednja področja: jasne talne oznake, ki razmejujejo delovne površine, transportne poti in odlagalne prostore in vključenost vseh zaposlenih v čiščenje delovnega okolja.

Z najvišjo povprečno oceno 4,2 (točka 03) pa so vodje skupin ocenili stanje transportnih poti, katere so jasno označene, čiste in brez ovir, ter dejstvo, da zaposleni uporabljajo osebno varovalno opremo (točka 09). Glede uporabe osebne varovalne opreme menimo, da je ocena

sicer visoka, vendar bi bilo za podjetje in zaposlene najboljše, da bi bila ta ocena 5. Smiselno bi bilo razmisliti o alternativah na tistih področjih, kjer se ta problematika pojavlja. Nesreče, ki se lahko zgodijo zaradi morebitnih poškodb na delovnem mestu zaradi neuporabe osebne varovalne opreme, vplivajo predvsem osebno na zaposlenega, vendar posledično tudi na podjetje, saj je zanj odgovorno. Z oceno nad 4 (vključno z oceno 4) so ocenili tudi naslednja področja: jasne talne oznake, ki razmejujejo delovne površine, transportne poti in odlagalne prostore, vključenost vseh zaposlenih v čiščenje delovnega okolja, urejenost omar za nevarne snovi in pravilno ločevanje odpadkov ter urejenost oglasnih tabel.

Najnižjo povprečno oceno so vprašani pripisali trditvi, da zaposleni ne izgubljajo časa z iskanjem stvari na delovnem mestu ter, da je prenašanje tovora minimalno (točka 06). Problematika transporta se pojavlja že na predhodnih področjih, zato je primerno, da navedeni tematiki posvetimo večjo pozornost, predvsem pa iskanju vzrokov za takšno stanje.

Podjetje ima motivacijo po nenehnem izboljševanju, zato poskuša z različnimi metodami izboljšati obstoječe stanje. Vodstvo je tudi dovzetno za predloge in spremembe, ki bi pozitivno vplivale na delo v podjetju, hkrati pa na različne načine spodbuja delavce k inovativnosti.

6 Zaključek

Rezultati, ki so se pokazali v delu zaposlenih so pozitivni tako za zaposlene kot za podjetje. Sinergija je tista, ki vse spodbuja tako, da bi bili še boljši. Na nekatere dejavnike uspešnosti težje vplivamo, na nekatere sploh ne, če pa lahko s spremenjenim načinom dela pripomoremo k boljšim rezultatom je to zelo velikega pomena.

Opisan praktični primer uporabe določenega modela za izboljšanje učinkovitosti procesov je koristen, saj lahko služi kot osnova oz. primerjava podjetjem, ki se za to šele odločajo. Pri odločitvi za nekaj novega je po navadi prisotna tudi določena negotovost, zato je vsak tak študijski primer dobre prakse za organizacije koristen. Tako iz zornega kota podjetja, ki je določen model uporabil spoznajo njihove prednosti, ki so jih pridobili, prav tako pa tudi napake, ki se jim bodo mogoče uspeli izogniti, ko model uporabijo za svoje podjetje.

Vse predlagane izboljšave so uporabne, hkrati pa nobena od njih ne zahteva večjih finančnih sredstev. Nekatere rešitve zahtevajo določene spremembe v samem sistemu organizacije proizvodnje, ki pa niso drastične in nam ne povzročijo stroškov. Uporabnost raziskave, ter aktualnost obravnavane teme je bila v času recesije zelo široka. Namen raziskave je bila analiza stanja po uvedbi metode 5S v določenem podjetju, ki lahko služi kot vzorčni primer.

Na okolje ima model lahko velik vpliv, če ga le ta prepozna kot koristnega v vsakdanjem življenju. Veliko je aktivnosti, ki jih sami prepoznamo kot odvečne, a ne naredimo nič, da bi jih odstranili. Aktivna vloga je tako zelo pomembna, da bi dosegli dobre rezultate in jih tudi obdržali.

Ker je 5S metoda, ki zahteva nenehno izboljševanje oziroma tudi prizadevanje, da se vse izvedene izboljšave obdržijo je področij za nadaljnje raziskovanje veliko:

- narediti kvantitativno analizo povečanja dobička zaradi 5S,
- narediti kvalitativno ali kvantitativno analizo povečanja zadovoljstva zaposlenih,
- ugotoviti zmanjšanje vpliva na okolje,
- uvedba 5S v terciarnih dejavnostih (npr. v informatiki, nabavi, ...),
- ergonomska ureditev delovnih mest.

Vzpostavljen red v določenem procesu je tako lahko dobra osnova za druge izboljšave.

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Alojz Gorše se je po končani srednji lesarski šoli v Novem mestu zaposlil kot predelavec v lesarskem izvoznem usmerjenem podjetju. V želji po novih izzivih je nadaljeval svojo službeno pot v enem izmed najuspešnejših podjetij v slovenskem prostoru. V podjetju je deloval na različnih področjih in tako pridobil neprecenljive izkušnje. Strokovna znanja v proizvodno-tehničnem sektorju, še posebej pa v razvojno-tehničnem sektorju, so mu nudila osebnostni in karierni razvoj, ki ga sedaj nadgrajuje v kadrovske službi, kjer opravlja delo izobraževalca zaposlenih. Težnje k perfekcionizmu so ga privedle, da je končal višjo ekonomsko šolo, nato je zaključil visokošolski študij na Fakulteti za organizacijske študije v Novem mestu, kjer sedaj nadaljuje izobraževanje na podiplomskem študijskem programu Menedžment kakovosti. Njegovo nenehno izboljševanje kakovosti se kaže skozi nenehno izobraževanje po različnih certificiranih programih, kot so NLP Diploma, notranji presojevalec sistema vodenja kakovosti ISO 9001:2008, Projektni menedžment in pridobivanje EU sredstev, itd.

Implementation of 5S method in the production process

Abstract:

Research Question (RQ): The following research tries to show how the introduction of 5S methodology of work affects the production process itself, where the greatest changes are shown and how they are reflected in performance indicators.

Purpose: The purpose of this project is to examine the existing methods and their application in practice as well as show the logic of actions we introduce in a particular process by using the 5S method. We will try to compare all the information using a practical example of company X. The results obtained are the basis for further improvements in an analyzed company.

Method: We expect positive results in terms of certain improvements in the working environment within the company, as well as the opportunity for improvement in terms of increased efficiency and, consequently, more profit.

Results: The results can represent the basis for achieving even better work in other processes in the studied company. It is very important to identify all the key activities that are important in generating profits while all the rest are eliminated from the process.

Organization: The 5S model is applicable to all levels of the organization so it can be experienced by the highest levels of management in running a business.

Society: The impact of the model will surely be seen by employees as they are offered a model after which they will work well, quickly, safely and without loss of time, which in today's world means competitive advantage.

Originality: The research work represents an important contribution to the implementation of the 5S model in the company and to the positive things it brings.

Limitations/Future Research: The survey as a case study was done in only one organization, in which they were implemented all phases of the method. In the direction of further research it is reasonable to make a quantitative analysis of the increase in profit, increase employee satisfaction analysis, to determine the reduction of the environmental impact, etc.

Keywords: 5S method, 5S implementation, recording of work processes, establishing order, little useful proposal, 5S impact on the performance of the organization, regulation of workplace.

Etični dvom pogajanj s sindikati v podjetju Moje podjetje d.o.o.

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Povzetek:

Raziskovalno vprašanje (RV): V študiji primera obravnavamo relacije med poslovnim subjektom in njegovim družbenim okoljem v luči spoštovanja etičnih načel. Uporabili smo konkreten primer pogajanja sindikata z vodstvom podjetja Moje podjetje d.o.o., kot tipičen primer iz menedžerske prakse.

Namen: Namen naše študije je izpostaviti primer pristopa poslovnih subjektov k reševanju tipičnih menedžerskih problemov pri vsakdanjih opravilih. Pri tem želimo pristopiti k pojasnjevanju vseh relevantnih razlogov katere menedžer upošteva pri sprejemanju odločitev in jih ocenjevati skozi očala spoštovanja etičnih načel.

Metoda: Pri pisanju študije smo sistematično pregledali dosežke eminentnih strokovnjakov na raziskovanem področju. Uporabili smo tudi metodo opazovanja z udeležbo.

Rezultati: Kot rezultat raziskave predstavimo razrešitev menedžerskega dvoma, opišemo etična protislovja, ki spremljajo izbrano menedžersko odločitev in razložimo katere so možne alternative izbrani rešitvi menedžerskega dvoma.

Organizacija: Poslovni subjekti so pri svojem vsakdanjem delovanju pogosto na izkušnji da z etično dvomljivimi odločitvami hitreje uveljavljajo svoje smotre. Dolgoročno se tako početje ne obnese.

Družba: Sprejemanje etično spornih odločitev v podjetjih in pasivnost okolja v katerem podjetje deluje vedno hitreje zvišuje toleranco do takih dejanj. S podobnimi študijami pripomoremo k ozaveščanju družbe in spodbujamo posameznike k dejanjem ki bodo v prihodnje vplivala na zmanjševanje nastanka etično spornih dejanj.

Originalnost: V strokovni literaturi nismo zasledili podobnega konkretnega primera. Naša študija lahko spodbudi kritično ocenjevanje dosežkov pogajanj med sindikati in vodstvom podjetij.

Omejitve/nadaljnje raziskovanje: V študiji smo se omejili samo na eno organizacijo, v prihodnje bi bilo dobro narediti podobno študijo še v kakšnem podobnem podjetju in primerjati pridobljene rezultate z našimi.

Ključne besede: etičnost, dvom, utilitarizem, menedžer, pogajanja, etika, odločitev.

1 Uvod

Vprašanje spoštovanja etičnih načel pri poslovanju je staro enako toliko kot je staro poslovanje. Verjetno lahko trdimo, da je cilj poslovanja od samih njegovih začetkov do danes ostal nespremenjen, torej ustvarjanje profita na takšen ali drugačen način, etična načela pa so se skozi zgodovino spreminjala. Ob tem se ponudi sama od sebe misel, da so etična načela na nek način dozorevala s časovnimi, kulturnimi, družbenimi, socialnimi in geografskimi vplivi na njih. Razmerje med poslovanjem in etičnimi načeli je ostalo nespremenjeno do danes. Od poslovnih subjektov se je vedno in se tudi danes pričakuje spoštovanje etičnih načel, ki

* Korespondenčni avtor.

veljajo v danem trenutku. Etična načela pa so se, kot smo rekli, skozi zgodovino spreminjala. Splošno definicijo etike podaja Juhant:

»Etika je panoga, ki skrbi za dobro (človeka), je veda, ki skrbi za vrednote, določa človekove drže oziroma človeku narekuje, kaj naj dela, da bo življenje posameznika in skupnosti potekalo urejeno. Po svoji simbolni spretnosti človek oblikuje pravila oziroma urejevalne mehanizme za življenje na tem svetu. Take mehanizme poznajo vse kulture od najstarejših časov do danes.« (Juhant, 2003, str. 6).

Definicija etike Jelice Šumič-Rihter, pa nam se zdi primerna za tematiko katero obravnavamo:

“Etika se začne torej z zahtevo, da subjekt prostovoljno vzame nase identifikacijo s tujo voljo, da v svoji najbolj intimni notranjosti prepozna kot gibalo svoje volje nekaj, kar uhaja njegovi oblasti.” (Šumič, 2002, str. 181)

Ko govorimo o spreminjanju etičnih načel v luči različnih zgodovinskih obdobjih in njihovem odnosu do poslovnih subjektov, lahko kot primer izpostavimo odnos, ki ga je imela do poslovnih subjektov stara Grčija, potem odnose do poslovnih subjektov v srednjem veku in na koncu začetek industrijske dobe ter postindustrijske dobe. Med poslovnimi subjekti in družbo je vedno bila prisotna enaka stalnica; družba je narekovala in pričakovala spoštovanje etičnih načel od poslovnih subjektov. Sankcije za nespoštovanje etičnih načel so se spreminjale in bile manj ali več rigorozne, odvisno od zgodovinskega obdobja. Z druge strani imamo poslovni subjekt in v njemu menedžerja kot najbolj izpostavljenega predstavnika poslovnega subjekta, ki se mora pri svojem vsakdanjem delu odločati. Prav pri tem odločanju se porajajo vsakič znova etični dvomi, na katera je potrebno dati odgovore »v hođu«. Kljub temu pa se mora menedžer zavedati svoje vloge:

»Vloga managerjev pri ustvarjanju etičnega okolja je posebej pomembna. S svojo močjo in zgleodom ustvarjajo merila etičnega ravnanja svojih sodelavcev. Vodja, ki ni pošten do drugih, težko to pričakuje od svojih sodelavcev.« (Markič, 2010, str. 43)

Namen naše študije je izpostaviti primer pristopa poslovnih subjektov k reševanju tipičnih menedžerskih problemov pri vsakdanjih opravilih. Pri tem želimo pristopiti k pojasnjevanju vseh relevantnih razlogov katere menedžer upošteva pri sprejemanju odločitev in jih ocenjevati skozi očala spoštovanja etičnih načel. S tem v vezi Dujanić navaja:

»Poslovna etika je kodeks obnašanja ki so ga poslovneži sprejeli kot pravilen način komunikacije v družbenem in poslovnem okolju.« (Dujanić, 2003, str. 53).

2 Teoretična izhodišča

V antični Grčiji so trgovce prezirali in niso bili cenjeni pripadniki družbe, čeprav so bili gonilna sila ekonomskega razvoja takratne družbe. Že v samem bistvu se je trgovanje, torej služenje denarja, dojemalo kot nekaj etično oporečnega. Trgovci so bili na družbeni lestvici le na malo večji stopnji od sužnjev. Razvoj duha je bila najbolj cenjena vrednota v antični Grčiji. Družbeni interesi so bili pred interesi poslovnih subjektov. Na tem mestu moramo

pripomniti, da je razvoj duha, kot najbolj cenjena vrednota v antični Grčiji, bil rezerviran za elitni del družbe, ki si je takratna etična načela postavljala in razlagala ozko v luči svojih potreb in interesov. Če bi le-ta kritično ocenjevali s sodobnimi etičnimi merili, ki veljajo danes, bi zagotovo lahko trdili brez dvoma, da so etična načela v antični Grčiji bila "neetična". Podobnih primerov v zgodovini je ogromno in nam ni treba iti tako daleč nazaj. Najbolj svež primer je mogoče Južna Afrika s svojimi etičnimi načeli, ki so veljali v času apartheida, torej rasne diskriminacije. V obeh primerih, v antični Grčiji in v Južnoafriški republiki imamo diskriminacijo, časovno obdobje med obema pa 2500 let. V tem obdobju pa imamo etična načela, ki so glede zastavljenih načel daleč od zgoraj navedena dva primera, neka druga pa niti ne. To vse govori v prilog "elastičnosti" etičnih načel in njihovi časovni, kulturološki, socialni in geografski determiniranosti. Če gremo naprej skozi kratek zgodovinski pregled odnosov med družbo in poslovnimi subjekti v luči zahtevanih etičnih načel, v srednjem veku (do leta 1500), poslovni subjekti niso nič bolje obravnavani s strani družbe.

"Trgovec redko ali nikoli ne zadosti Bogu. Tudi Tomaž Akvinski je bil mnenja, da poslovne dejavnosti upravičujejo svoj obstoj, le če so v dobro skupnosti. Poslovnež naj bi bil neizmerno pošten, njegove obveznosti pa so bile tudi neizmerne – do soljudi in Boga." (Berlogar, 2000, str. 20-21)

Omembe vreden premik v razmerju družba – poslovni subjekt glede zahtev za spoštovanje etičnih načel prihaja v obdobju 1500-1800 leta. Država začne podpirati poslovne subjekte, ki naj bi delovali v njenem interesu in pod njenim strogim nadzorom. V tem obdobju zaradi, z ene strani dopuščanja več podjetniške svobode, z druge strani pa jasno definiranih pravil etičnega obnašanja poslovnih subjektov, že prihaja do močnih nasprotjih med etičnimi in poslovnimi načeli. Kršenje etičnih načel poslovnih subjektov je bilo strogo kaznovano, z druge strani ista ta družba dovoljuje suženjstvo, kar lahko vzamemo kot ilustracijo in dokaz o »elastičnosti« etičnih načel skozi različna zgodovinska obdobja in do različnih skupin populacije družbe, kar smo že omenili. Naslednje obdobje je obdobje industrijske revolucije, kjer poslovni subjekti dobijo maksimalno svobodo in postanejo utelešenje vrlin. Prihaja do degradacije zahtev družbe do poslovnih subjektov, s tem tudi do družbene odgovornosti podjetij, kar rezultira z veliko depresijo v tridesetih letih.

"Depresija tridesetih let tega stoletja (misli se na 20. stoletje op. av.) je višek družbene neodgovornosti ter zanemarjanja etike podjetij in obenem zlom ekonomskega sistema. Špekulacije glede vzročne povezave enega in drugega so številne, najbolj kritični pa stanje vendarle razlagajo tudi z razmerji moči, politiko in ne zgolj z apriorno pokvarjenostjo podjetij." (Berlogar, 2000, str. 21)

V zadnjem obdobju pa imamo spet pritisk družbe na poslovne subjekte, ki zahteva spoštovanje etičnih načel. Za to obdobje je značilen razcvet tako imenovanega političnega utilitarizma.

“Ne more biti bolj res, kot je res to, da je praksa managerske etike neka situacijska etika, etični relativizem in etika preživetja, ki jo sami imenujemo politični utilitarizem.” (Berlogar, 2000, str. 20-21)

Omenili smo že utilitarizem, ki skupaj z etičnim egoizmom sodi v pristop etiki, ki ga imenujemo teleološki pristop. V nadaljevanju navajamo na kratko splošno delitev etike, v obsegu za katerega menimo, da je nujen zaradi lažjega razumevanja teoretske podlage študije primera, ki ga obravnavamo.

“Teleološki pristopi obravnavajo koristne ali škodljive posledice obnašanja (gr. telos – namen, cilj). Za presojanje etičnosti so odločilni izidi dejanja. Dejanja presojamo po posledicah, ne po prepričanju po namenih odločevalca.” (Tavčar, 2002, str. 43)

V strokovni literaturi avtorji najpogosteje omenjajo še dva pristopa: deontološki pristop in mešani pristop.

“Velja naj da sta pravičnost in dolžnost pred koristmi (gr. deon – dolžnost). Dejanje je moralno ne zaradi izidov, ki jih obeta, temveč zaradi značilnosti tega dejanja ali pravil, po katerih se ravna.” (Tavčar, 2002, str. 44)

“Mešani pristopi povezujejo utilitaristično in deontološko ter iščejo boljše skladje z običajnimi etičnimi normami in osebnimi zaznavami; zato se odpovedujejo samo enemu ali dvema praviloma.” (Tavčar, 2002, str. 45)

Ne moremo mimo dejstva, da spoštovanje etičnih načel poslovni subjekt stane. Učinek spoštovanja etičnih načel pa ni viden takoj. Enako tako niso zahteve družbe in pritiski na njihovo spoštovanje vedno enaki. V tem smislu Berlogar navaja:

“Kot bi verjeli drugače, je vendarle res, da etika podjetjem lahko tudi škodi. Privošči si jo lahko močno podjetje (ki pa za to nima prave potrebe) in le tu je etika lahko predmet apriorne odločitve. Vsa druga podjetja enostavno, in žal, ne morejo čakati dolgoročnih učinkov svojih etičnih in družbeno odgovornih odločitev. Niso sicer nujno neetična in neodgovorna, ravnavo pač tako, kot so prisiljena ali jim vsakokratna situacija dopušča.” (Berlogar, 2000, str. 17)

Zaradi lažjega razumevanja konflikta, ki nastane ob dvomu menedžerja, ki je najbolj izpostavljen v poslovnem subjektu pri tveganju kršenja etičnih načel, lahko povemo, da je menedžer vedno v dvomu ali zadovoljiti po najbližji poti zahteve uprave pri doseganju profita ali pri tem tudi upoštevati zahteve vseh drugih deležnikov (družbenih subjektov, lokalnih skupnosti in podobno), ki najpogosteje direktno vplivajo na zmanjšanje profita, s tem tudi na menedžerjevo uspešnost.

“Odločitev za karkoli ponavadi niti ne bo samo njihova, avtonomna, ampak predvsem odvisna od vrste in moči zahtev deležnikov, lastnih možnosti ipd., še najmanj bo to najbrž posledica moralne, značajske pokvarjenosti managementa.” (Berlogar, 2000, str. 60)

Namen naše študije primera je izpostaviti pristop menedžerja k reševanju tipičnih menedžerskih problemov pri vsakdanjih opravilih. Pri tem želimo pristopiti k pojasnjevanju vseh relevantnih razlogov katere menedžer upošteva pri sprejemanju odločitev in jih ocenjevati skozi očala spoštovanja etičnih načel.

»Etično odločanje je enostavno, kadar gre za črno-bele odločitve, kjer je jasno, kaj je pravilno in kaj ne. Veliko se govori in piše o korupciji, ki pa ni edini izziv in najbrž tudi ne največji. Večinoma pa gre za dileme, kjer je ena odločitev boljša od druge, ali kje izbiraš manjše zlo.« (Bauer, Kralj, Mihelič, Škafar, & Vorina, 2009, str. 57)

V naši študiji primera bomo obravnavali konkreten primer dogovora predsednika sindikata z direktorjem podjetja Moje podjetje d.o.o. o privolitvi predsednika sindikata v enomesečni 12-urni delavnik. Ker v naši študiji nastopa tudi predsednik sindikata kot eden od nosilcev etičnega dvoma, bomo na kratko o vlogi sindikata v njegovem doprinosu razvoja delovanja poslovnih sistemov. Obstoje sindikata v poslovnem subjektu je zaželen in dobrodošel. Če sindikat zdravo deluje, lahko bistveno pripomore poslovnemu subjektu za ostvaritev poslovnih ciljev v dobro obojih. Država je tudi na tem področju definirala zakonske okvirje delovanja. Podobno kot je to pri delovanju poslovnih subjektov, oziroma menedžerjev, kot njihovih najbolj izpostavljenih predstavnikov je tudi pri delovanju sindikatov nekaj sivega področja, ki ni pokrit z zakonskimi predpisi. V dobro vseh strani je, pri pogovorih sindikatov na eni strani in menedžmentom na drugi, upoštevati primere dobre prakse ter okoliščine v katerih se strani pogovarjata. Pri navedenem je verjetno sprejemljivo, da se pri konkretnih pogajanjih med sindikati in menedžerji uporabi situacijska etika, podobno kot je to primer pri zgoraj navedenem političnem utilitarizmu pri odločanju menedžerjev. Zakonski okvirji pa lahko ostanejo kot izhod v sili, v primeru potrebe. O tem govore naslednji viri:

“Union - Management je izraz, ki je bil uporabljen za opredelitev dejavnosti sodelovanja med sindikati in delodajalci, katerega cilj je izboljšati organizacijsko učinkovitost in zmanjšati stroške. Pričakovanje sodelovanja je, da oboji, sindikat in management imata več koristi od njihovega odnosa s sodelovanjem kot bi lahko dosegli brez njega.” (Ostrowsky, 2005)

“Menedžerji in funkcionarji sindikatov opozarjajo, da je prišlo do spremembe v odnosu zaradi zunanjih dejavnikov (vlada, zakonodaja), notranji opredeljeni dejavniki pa so ostali nespremenjeni. Notranji dejavniki kot so: zaupanje in komunikacija med obema stranema, glas zaposlenih, kjer vsi spoštujejo pravila in strokovno verodostojnost so rezultat dolgoročnega fer odnosa med managerji in sindikati.” (Brown, Townsend, & Yarrington, 2014)

Hipoteza:

Etičnost nekega dejanja se ne more oceniti kot manj ali več etična, tudi najmanj škodljiva, pa kljub temu neetična dejanja, povzročijo dvig tolerance pri opazovanju družbe skozi očala etičnih načel.

3 Metoda

Pri pisanju študije primera smo sistematično pregledali dosežke strokovnjakov na raziskovanem področju. Dognanja prebranih avtorjev (Ambrož & Colarič-Lekše, 2015, Bauer, Mihelič, Kralj, Škafar, & Vorina, 2009, Berlogar, 2000, Brown, Townsend, & Yarrington, 2014, L.M., Dujanić, 2003, M., Juhant, 2003, Markič, 2010, Ostrowsky, 2005, Tavčar, 2003, Šumič-Riha, 2002) smo potem uporabili v teoretičnem delu.

Uporabili smo tudi metodo opazovanja z aktivno udeležbo. Menimo da to dejstvo daje obravnavani študiji dodatno kakovost.

4 Rezultati

Podjetje Moje podjetje d.o.o. je v postopku pridobitve strateškega kupca. Zaradi nezadostnih kapacitet in kratkega dobavnega roka, ki ga pogojuje kupec, se odloči za uvedbo 12-urnega delavnika. Direktorju se zdi pomembno, da pridobi na svojo stran sindikat in delavce, ker se zaveda, da je to ključnega pomena za izpolnitev zahtev kupca. Ob predstavitvi problema predsedniku sindikata, direktor podjetja dobi neetičen predlog z njegove strani. Predsednik sindikata želi, da direktor podjetja zaposli njegovo ženo v zameno za uspešno končanje pogajanj. To je dvom direktorja podjetja, ki je tudi osrednji etični dvom študije primera, katero obravnavamo. Poleg teh smo identificirali še tri etična dvom: dvom vodje proizvodnje v zvezi z etičnostjo predstavitve dejstev delavcem na zboru delavcev, dvom predsednika sindikata glede sprejetja predloga o 12-urnem delavniku in na koncu še dvom predsednika sindikata, ki se porodi ob njegovi zahtevi direktorju podjetja Moje podjetje d.o.o., da zaposli njegovo ženo v zameno za uspešen zaključek pogajanj.

Potencialno naročilo je bilo s stališča izhoda podjetja iz trenutnega položaja zelo dobrodošlo. Odpiralo je kup potencialnih priložnosti za podjetje, njegove zaposlene in lokalno skupnost. Kupec je postavil zeleni termin dobave naročila, katerega podjetje Moje podjetje d.o.o. z obstoječim številom zaposlenih ni moglo zadovoljiti. Podjetje je delalo v dveh izmenah, za zadovoljitev zelenega termina naročnika to ni bilo dovolj. V ta namen je bilo nujno sprejeti nove delavce, ali začasno podaljšati zaposlenim delovnik.

Vodstvo podjetja se je odločilo za uvedbo 12-urnega delovnika. Direktor podjetja je nase prevzel nalogo, da obvesti sindikat o nameravani potezi, vodja proizvodnje pa je moral dobiti soglasje od delavcev. S tem namenom je vodja proizvodnje sklical vse delavce v obeh izmenah in jih obvestil o trenutnem stanju v podjetju. Apeliral je na delavce, da sprejmejo 12-urni delavnik za obdobje enega meseca. Delavcem so predstavljene vse pozitivne pridobitve do katerih bi prišlo. Odziv delavcev je bil mešan. Približno polovica se je takoj strinjala z predlagano rešitvijo, druga polovica pa je želela pridobiti mnenje sindikata. Na sestanek niso bili vabljeni predstavniki sindikata, ker je obveščanje vodje sindikata o nameravani ukrepu prevzel direktor podjetja. Po tem prvem narejenem koraku je sledil sestanek direktorja podjetja in predsednika tovarniškega sindikata. Čas za pogajanje je bil omejen, ker je kupec zahteval odgovor v določenem roku. Predsednik sindikata je brez razmišljanja zavrnil svojo

privolitev za 12-urni delovnik in zagrozil s stavko, če vodstvo podjetja sprejme to odločitev. Direktor bi lahko šel v konflikt s predsednikom sindikata in vseeno odločil o uvedbi spremenjenega delovnika, vendar je to bilo preveč rizično. V nadaljnjih pogajanjih je predsednik sindikata indirektno povedal pod katerimi pogoji je pripravljen »prepričati« svoje članstvo, da sprejme novi delovnik za obdobje enega meseca. Povedal je, da je njegova žena pred kratkim ostala brez službe in da bi njena zaposlitev v podjetju Moje podjetje d.o.o. vplivala zelo ugodno na njihova pogajanja. Direktor podjetja je takoj privolil. S tem je računal, da je obdobje dolgih mukotrpnih pogajanj s sindikatom zaključeno, ker sedaj »ima« sindikat na svoji strani.

5 Razprava

Primer odpira štiri etične dvome:

- Etični dvom 1: Etični dvom vodje proizvodnje; Kako predstaviti delavcem potrebo po uvedbi 12-urnega delavnika, da bi najlažje sprejeli predlog. Vodja proizvodnje se lahko odloči in pove samo pozitivne plati predloga, kot so pridobitev novega kupca, potencialno odpiranje novih delovnih mest, dodatni zaslužek ob oddelanih dodatnih urah in podobno, izogne se pa predstavitvi manj ugodnih dejstev, kot so utrujenost delavcev, tveganju odpovedi naročila s strani kupca, možnost, da se nadurno delo ne izplača temveč koristi itn., ki spremljajo predvideno uvedbo 12-urnega delavnika.
- Etični dvom 2: Etični dvom predsednika sindikata 1; Ali na podlagi slabih dosedanjih izkušenj zavrne predlog direktorja podjetja o podaljšanem delavniku brez razmišljanja, ali pa zaupa direktorju in sprejme predlog. Podjetje je šlo skozi težko tranzicijsko obdobje, kjer je pogosto prihajalo do obljub s strani vodilnega menedžmenta, ki se niso mogle izpolniti zaradi turbulentnih in pogostih sprememb poslovnega okolja. V primeru zavrnitve dogovora predsednika sindikata s direktorjem bi se lahko javnost obrnila proti njem in bi se tudi sam moral nositi z bremenom zaviranja rasti in izhoda podjetja iz kriznih razmer.
- Etični dvom 3: Etični dvom predsednika sindikata 2; Ali izkoristiti pozicijo predsednika sindikata in moč, ki jo ima zaradi številčnega članstva in zahtevati zaposlitev svoje nezaposlene žene, ali pa bi to bilo preveč tvegano za njegovo pozicijo, ker v primeru, da se izve za njegovo početje, bi to pomenilo konec njegove funkcije v sindikatu. Predsednik sindikata ima za sabo težko in dolgo obdobje zastopanja delavskih interesov. Meni, da ni nikoli ustrezno nagrajen in da ni imel velik koristi od dosedanje borbe za pravice zaposlenih. Ker ima doma težko finančno situacijo, bi mu zaposlitev žene zelo dobrodošla. Razmišlja tudi o opustitvi sindikalnega delovanja.
- Etični dvom 4: Etični dvom direktorja podjetja Moje podjetje d.o.o.; Ali sprejme predlog predsednika sindikata in hitro reši problem, ali pa zavrne in na svojo roko vseeno sprejme odločitev o uvedbi 12-urnega delavnika. S tem tvega upor delavcev in izgubo potencialnega naročila. Mnenja je, da eden delavec več ni tako velik strošek za podjetje in da v primeru uspeha pri pridobitvi novega kupca podjetje v vsakem slučaju potrebuje nove delavce.

Etični dvom 1: Etični dvom vodje proizvodnje

Vodja proizvodnje je na sestanku z delavci namerno usmeril diskusijo na prednosti uvedbe enomesečnega 12-urnega delavnika. Pasti in slabosti te rešitve, kot so utrujenost delavcev zaradi dolgega delavnika, družinsko življenje delavcev, tveganje slabe kakovosti zaradi utrujenosti delavcev, nevarnost odpovedi naročila s strani kupca in drugih negativnih pojavov pa ni poudarjal. Pri tem govorimo o vnaprej premišljeni potezi vodje proizvodnje, z jasnim namenom doseči čim večjo soglasje delavcev za podaljšan delavnik. Etično sporno je prikazovanje delne slike problema. Menimo, da so takšni pojavi del vsakodnevne prakse ne samo v poslovnem okolje, vendar tudi v vsakdanjem življenju. Ljudje smo nagnjeni k osvetlitvi samo tiste točke problema, ki je v prid želene rešitve. V našem primeru je vprašanje kako bi se delavci odločali, če bi imeli na razpolago vse podatke.

Etični dvom 2: Etični dvom predsednika sindikata 1

Zaupanje med predsednikom sindikata in direktorjem podjetja Moje podjetje d.o.o. je na zelo nizki ravni. Vzrok za takšno raven zaupanja so dolgoletne težave podjetja, ki so nastale ob izvajanju prestrukturiranja podjetja Moje podjetje d.o.o. Pri vsem tem sindikat s svojim delovanjem ni prav veliko dosegel. V procesu prestrukturiranja je podjetje odpustilo 1650 delavcev in sindikatu ni ostalo drugega, kot da poskrbi za spoštovanje vseh zakonskih obveznosti napram odpuščenih delavcev. Podjetje je, zaradi tako številčnega odpuščanja, bilo pod drobnogledom javnosti, tako da bi pravice odpuščenih delavcev spoštovale tudi brez delovanja sindikata. Prvi etični dvom, ki se je pojavil pri predsedniku sindikata je, ali sprejme predlog direktorja podjetja Moje podjetje d.o.o. in privoli v 12-urni delavnik, ali pa ga zavrne. Pri zavrnitvi predloga bi tvegala prevzemanje odgovornosti za morebitno stagnacijo podjetja. Ne glede na izhod pogajanj z novim kupcem bi javnost lahko zelo kritično sprejela njegovo zavrnitev predloga. S sprejetjem predloga pa bi tvegala pad njegovega ugleda med delavci, kjer bi se delavci začeli spraševati, o moči sindikata, ki v bistvu samo sprejema predloge vodstva podjetja in prav malo naredi za delavce.

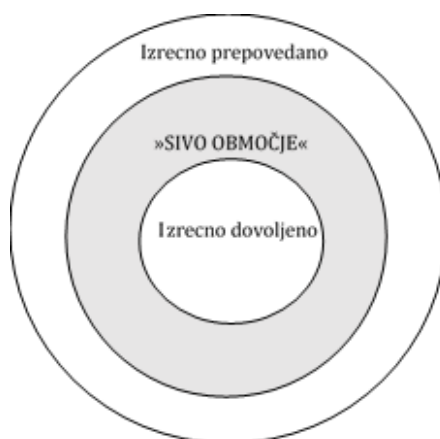
Etični dvom 3: Etični dvom predsednika sindikata 2

Drugi etični dvom predsednika sindikata se pojavi ob možnosti uporabe vpliva svoje funkcije v sindikatu za doseganje osebne koristi. Glede na okoliščine problema je sprejetje predloga direktorja skoraj imperativ. To ima dobre strani za vse udeležene. Predsednik sindikata bi torej, s sprejetjem predloga verjetno dobil dodatne pozitivne točke javnosti in dolgoročno povrnil delno izgubljeno zaupanje delavcev. V vse to bi verjetno lahko »vgradil« zaposlitev svoje žene, ki je bila nezaposlena. Direktor podjetja bi verjetno zlahka sprejel ta njegov pogoj. S druge strani bi odkritje njegovega početja, pomenilo konec njegove sindikalne kariere in javno osramotitev.

Etični dvom 4: Etični dvom direktorja podjetja

Direktor podjetja se je ob predlogu predsednika sindikata, da sprejme njegovo ženo v službo našel v etičnem dvomu. Lahko bi zavrnil predlog predsednika sindikata in s tem tvegal stavko v podjetju, kar bi verjetno pomenilo konec zgodbe o pridobitvi novega strateškega kupca. V primeru sprejetja predloga pa bi ob morebitnem razkritju njihovega dogovora, vsekakor prišlo do obsojanja javnosti obeh. V primeru sprejetja predloga predsednika sindikata bi najhitreje rešil problem.

Primer je zelo dobra ponazoritev uporabljenega izraza na začetku tega članka »politični utilitarizem«. Direktor se je odločil sprejeti ponudbo predsednika sindikata, ker je ocenil, da bo s tem uspel pridobiti nov posel in s tem direktno vplivati na ugoden izid za podjetje. Zaskrbljujoče je dejstvo, da pri tem ni niti malo razmišljal o etičnosti svojega početja. Če lahko najdemo za direktorja »opravičilo« za očitno neetično ravnanje v luči skrbi za poslovanje podjetja, tega ne moremo nikakor storiti za predsednika sindikata. Izkoristil je pozicijo moči, ki jo ima zaradi delavcev in zaupanih mu mesečnih članarin za ozke osebne interese. Gledano relativno je direktorjev etični prekršek manj resen od sindikalistovega. Veliko vprašanje, ki se postavi ob vsem tem je (ne)reagiranje sindikalne baze in lokalne javnosti na očiten neetični postopek njihovega predsednika in direktorja podjetja. Očitnost storjenega je pokazatelj višine tolerance do etičnih načel, ki ga ima okolje poslovnega subjekta, kakor tudi sam poslovni subjekt v katerem se je omenjeni primer zgodil. Kar je še bolj zaskrbljujoče, primer ni prišel na časopisne strani, prav tako se ni v podjetju Moje podjetje d.o.o. jemal kot nekaj problematičnega, neetičnega. Do tako visoke tolerance se ne pride od včeraj do danes, ampak to traja neko daljše časovno obdobje. Ljudje se morajo začeti spraševati, pogovarjati in govoriti o nekorektnosti tovrstnih dejanj, drugače bo vsako naslednje neetično početje še bolj neetično.



Slika 1 Sivo območje med izrecno dovoljenim in prepovedanim. Povzeto po »Strateški management«. (Tavčar, 2002, str. 47)

“Med tistim, kar zakoni izrecno prepovedujejo, in tistim, kar izrecno dovoljujejo, je prostrano sivo področje (Slika 1), kjer se lahko dogaja marsikaj, vendar tudi moralno ni. Oženje tega

področja s podrobnejšim obveznim normiranjem (kodificiranjem) se slabo obnese, saj preveč utesnjuje prostost delovanja in duši ustvarjalnost in pobude.” (Tavčar, 2002, str.47)

Etika in spoštovanje etičnih načel pri menedžerskem odločanju je potrebno vsem deležnikom poslovnega subjekta, kot tudi poslovnemu subjektu samemu. Če v poslovnem subjektu prevlada neetično ravnanje in iskanje lukenj v zakonih in predpisih, to dolgoročno lahko pripelje podjetje do propada. Razen kratkoročnih koristi, ki jih menedžer verjetno ima v času neetičnega ravnanja, dolgoročnih koristi podjetje ne more imeti.

6 Zaključek

Študija primera obravnava etiko okoliščin. Če povzamemo, vodja proizvodnje in direktor sta bila v časovni stiski in bi jih začetek dolgotrajnih pogajanj s sindikati oddaljil od zelenega cilja. Lahko bi rekli, da sta se odzvala situacijsko in da nista preveč razmišljala o etični plati sprejetih odločitev. Glavno vodilo je bilo čimprejšnja vzpostavitev potrebnih pogojev za potrditev naročila kupcu. Vodja proizvodnje pri svoji predstavitvi ni lagal, sporno je to, da ni povedal resnice v celoti. Res je, da v konkretnem primeru v končnici ni prišlo do kršenja pravic zaposlenih. Njegov glavni namen je bil, da s čim manj pripomb dobi soglasje delavcev za rešitev, ki je bila dobra za celo podjetje.

Podobno lahko ugotavljamo za direktorja podjetja, vendar pri njem je zadeva malo drugačna. Ob predlogu predsednika sindikata ni bilo nobenega dvoma o neetičnosti predloga. Vendar je direktor gladko pristal na predlog, računajoč na čim prejšnjo rešitev problema.

Če sta dejanja vodje proizvodnje in direktorja nekoliko opravičljiva, če upoštevamo prednosti katerih podjetje bo deležno ob vseeno etično spornih odločitvah, za dejanje predsednika sindikata ni nobenega opravičila. Res je, da ne moremo govoriti o manj ali več etike pri nekem dejanju, vendar primeri iz prakse, kot je naš, kar kliče po takšni obravnavi. Ni ista teža direktorja, vodje proizvodnje in predsednika sindikata. Če bi obstajala lestvica »neetičnosti«, potem bi najtežji »prekršek« bil predsednika sindikata, zatem direktorja in na koncu še vodje proizvodnje.

Direktor podjetja Moje podjetje d.o.o. in vodja proizvodnje bi lahko etično ravnala in zavrnila predlog predsednika sindikata ter predstavila delavcem obe plati uvedbe podaljšane delovnika. Ni zagotovila, da bi s takšnim ravnanjem ogrozila potencialni posel in razvoj podjetja, vendar je obstajalo tveganje. To je pa tista cena, ki bi jo podjetje moralo plačati za ohranitev etične čistosti. Na kratek rok je direktor rešil problem s sprejetjem etično spornih odločitev, vendar na dolgi rok je dal vedeti sodelavcem, predsedniku sindikata, članom sindikata in lokalnem okolju, kakšen je njegov odnos do etičnih načel.

S študijo primera smo želeli pokazati kako so v posameznih primerih menedžerji v veliki skušnjavi, da uberejo bližnjico pri reševanju vsakdanjih problemov. To ne pomeni, da takšne bližnjice odobravamo, vendar je za razmisliti, ali so prav vsa drobna, in kljub tej drobnosti vseeno neetična dejanja, ki imajo dokazano za cilj »višji ideal«, vredna obsojanja. Z druge

strani pa prav dobro vemo, da se vse mora nekje začeti. Verjetno drži, da se toleranca na neko neetično dejanje dviga vsakič, ko to neetičnost ne registriramo in ne obsodimo. Po tej poti smo tudi prišli do današnje situacije, kjer vse več imamo situacijske etike v podjetjih, ki ni vedno nujno slaba, vendar bistveno vpliva na dvig tolerance menedžerjev in družbe do neetičnih dejanj.

Sprejemanje etično spornih odločitev v podjetjih in pasivnost okolja v katerem podjetje deluje vedno hitreje zvišuje toleranco do takih dejanj. S podobnimi študijami pripomoremo k ozaveščanju družbe in spodbujamo posameznike k dejanjem ki bodo v prihodnje vplivala na zmanjševanje nastanka etično spornih dejanj. V strokovni literaturi nismo zasledili podobnega obravnave konkretnega primera. Naša študija lahko spodbudi kritično ocenjevanje dosežkov pogajanj med sindikati in vodstvom podjetij. V študiji smo se omejili samo na eno organizacijo, v prihodnje bi bilo dobro narediti podobno študijo še v kakšnem podobnem podjetju in primerjati pridobljene rezultate z našimi.

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Ethical question of negotiations with the trade unions in the company Moje podjetje d.o.o.

Abstract:

Title: Ethical question of negotiations with the trade unions in the company Moje podjetje d.o.o.

Research Question (RQ): In a case study dealing with the relationships between business entities and their social environment, in keeping with ethical principles. We used a concrete example of the union negotiations with the company management Moje podjetje d.o.o., as a typical example of managerial practice.

Method: When writing the study we was to systematically review the achievements of eminent experts on the surveyed area. We also used the method of participant observation

Results: As a result of the research present a solution for managements doubt, described the ethical contradictions that accompany selected managerial decisions and explain what are the possible alternatives chosen solution managerial doubt.

Organization: Business entities are in their everyday operations often experience that ethically dubious decisions more quickly pursue their aims. In the longer term so doing does not work out.

Society: Receiving ethically controversial decisions in enterprises and the passivity of the environment in which the entity operates faster and faster increases tolerance to such acts. Similar studies are helping to raise awareness of the company and encourage individuals to action that will in the future have an impact on reducing the occurrence of ethically questionable acts..

Originality: In the literature we did not find a similar case example. Our study can foster a critical appreciation of the achievements of the negotiations between trade unions and management companies.

Limitations/Future Research: The study was limited to only one organization. In the future it would be good to do a similar study in other similar company and to compare the results obtained with our own.

Keywords: ethnicity, doubt, utilitarianism, manager, negotiations, ethics, decision.