Motivating Employees in a Wood Processing Company before and after Restructuring

Josip Faletar,[a] Denis Jelačić,[b] Mariana Sedliačiková,[c,*] Anamarija Jazbec,[d] and Iveta Hajdúchová [e]

This research analyzed the motivating and demotivating factors amongst employees in a wood processing and furniture manufacturing company. Research was conducted over the year 2010, during the time of a full economic crisis and before the restructuring of the company was done. Analysis also was conducted in 2014, during the beginning of the economic recovery and after the restructuring of the company. Research was conducted with a survey using a questionnaire containing six questions with multiple choice statements. The questions were closed-ended, and respondents used the Likert four-level scale of importance for each statement. A total of 180 employees were surveyed, and results were statistically processed by using the χ^2- test and cluster analysis. This study established that the motivation factors most important to employees in a company are significantly different during the time of an economic crisis, and in the period of economic recovery, *i.e.* before and after restructuring of the company. Employees were most concerned about physiological needs in the time of a crisis, whereas in the time of an economic recovery, employees consider social needs to be of more importance. Also, employees consider psychological circumstances of work to be more important in the year 2014 than in the year 2010. Employees' overall motivation can be linked to higher efficiency and higher quality production and business results, and such research should be conducted more often.

Keywords: Wood processing; Furniture manufacturing; Employee motivation; Demotivating factors; Restructuring

*Contact information: a: Spačva, d.d., Duga ulica 181, HR-32100 Vinkovci, Croatia; b: University of Zagreb, Faculty of Forestry, Svetošimunska 25, HR-10000 Zagreb, Croatia; c: Faculty of Wood Sciences and Technology, Technical University in Zvolen, T. G. Masaryka 24, 960 53 Zvolen, Slovakia; d: University of Zagreb, Faculty of Forestry, Svetošimunska 25, HR-10000 Zagreb, Croatia; e: Technical University in Zvolen, T. G. Masaryka 24, 960 53 Zvolen, Slovakia; *Corresponding author: sedliacikova@tuzvo.sk*

INTRODUCTION

To achieve high-quality results in wood processing, apart from the influence of technical and technological factors, one of the most important factors to consider is employees' motivation for work (Úradníček and Zimková 2009). Motivated employees come to work with enthusiasm and wish to fulfill their daily obligations in the most satisfying way, because it guarantees that their business results would be on the level required, satisfaction with their results would be higher, and their salaries would be bigger (Mussa 2010). Unmotivated employees very seldom fulfill their obligations, so their production and business results are on a much lower level than required by the company or by the market (Jelačić *et al.* 2010).

During a period of economic down-turn and in the time of a company restructuring, there are many demotivating factors that occur; and those that already existed regarding unsatisfying business results grow even stronger (Bryan and Farrell 2008; Charan 2008). Employees are facing uncertainty, amongst other fears such as the potential of losing jobs

or lower salaries. On one side there is a need to implement a production and business system for more efficient work. On the other side, the act of restructuring and performing a cost reduction process must be introduced along with the possibility of promoting the selling of products. In that vicious circle it is important to establish that motivating factors will help employees to work with more enthusiasm and a bigger strive for success (Kropivšek *et al.* 2011).

Some newer research within companies for wood processing and furniture manufacturing (Kropivšek 2003; Kropivšek and Rozman 2007) has revealed the presence of organizational cultures within a workplace, where the main goal is to motivate employees. Such cultures can lead to additional problems under certain circumstances. It can be stated that almost all motivational factors lie in the hands of management. The main question remains: does management know how to use them (Možina 1998)? Motivation means that somebody does something because he or she wants to do so, and what management has to do is to motivate and stimulate him or her in such a way as to encourage such an outlook (George and Jones 1999; Herzberg 2008). Motivation is the process of awakening a person's drive to pursue activities, with attention to certain details and regulation to achieve a certain goal while overcoming obstacles along the way (Jelačić *at al.* 2010). It can be said that motivation contains factors such as enthusiasm, wishes, intentions, persistence, *etc.*, which motivate and point ones behaviour in a certain direction (Daft and Marcic 2000). Previous research has shown that human activities are motivated by one or many known and sometimes unknown complicated factors (Možina 2002). There are individual factors that influence human activities, and they are very often part of the human social life. Therefore, some routine motivating approaches may prove to be ineffective, because they are not adapted to each individual person within a company (Lipičnik 1998). The main goal of these activities aims to satisfy the wishes and expectations of one individual person, which are formed, based on his or her own material and social needs, desire for respect, independence, personal growth, and development.

There are two groups of motivating theories: (1) motivation of contents and (2) motivation of the process. The first group of theories researches the factors that motivate towards a certain behaviour, and the second group of theories studies the reasons behind a certain behaviour. Among the contents theories, the most recognized are the Maslow theory of needs, and the Glasser theory of choice. It is assumed that all human behaviour is pointed towards satisfying one's basic needs (Lipičnik 1998; Glasser 1999; Glasser 1994; Kropivšek *et al.* 2011; Jelačić *et al.* 2008). Knowing the profile of a person's needs can help form the basis for making the right approach for efficient and successful leadership (Kropivšek 2007; Jelačić *et al.* 2007). Herzberg gives one of those main theories, which has two main parts, the factors or motivators and the hygienic factors, which help maintain the standard level of satisfaction (Možina 1998).

According to Klieštik *et al.* (2015) among the different process theories there is the theory of a problem, which is based on a statement that people are willing to solve problems. A problem automatically initiates some kind of reaction from an employee (Lipičnik and Možina 1993). The Hackman-Oldhamer model of enrichment is based on three key psychological circumstances, the importance of work, responsibility, and knowing results, which all have an influence on motivation at the workplace (Lipičnik and Možina 1993). Fromm (1996) gives a theory that says people work because they either want to have something or because they want to live up to be somebody/something one day.

Some of the authors in this field of study have wanted to establish what kind of changes in motivation area occur during the different business environment period such as economic crisis. Kropivšek *et al.* 2011) established the differences between employees' motivation in wood industry companies in two Central European countries, Slovenia and Croatia during the economic down-turn. Hitka *et al.* (2014) and Hitka and Sirotiakova (2011) researched the impact of economic crisis on motivation of employees in the woodworking industry in Slovakia, while Zavadsky *et al.* (2015) tried to establish what were the changes in employee motivation in different Slovakian companies due to global economic crisis.

The ideas outlined above have led to empirical research in a wood processing company. The aim was to establish what motivating factors are most important to employees and their level of importance, before the restructuring in a period of full economic down-turn, and after the restructuring and implementation of a new stimulation motivation system.

EXPERIMENTAL

Data Collection

The research method for collecting the data was a survey conducted by a questionnaire for employees consisting of 6 questions. The conditions of key presumptions of different motivational theories were checked within the questionnaire. The questions were closed-ended, and respondents were using a four-level scale of importance for each statement: the number 1 meaning never, 2 meaning sometimes, 3 meaning often, and 4 meaning always. A total of 180 employees (*n*) were surveyed in one wood processing company. The survey was conducted twice, in the year 2010– the year of a full recession and economic down-turn, before the restructuring, and again in the year 2014– the year of the economic recovery, after the restructuring and after the new motivation/stimulation system was introduced.

Methods of Evaluation of the Research

The differences in the frequency of answers given by employees between the year 2010 and the year 2014 were tested by the χ^2-test for each individual question. The hypothesis H_0 was that the distribution of answers to the same question given in both years were equal. That test showed that there was a statistically significant difference between distribution of all answers given in the year 2010, and those given in the year 2014 (for all tested values $p<0.01$). The study wanted to establish which answers to given questions were closer to each other than others. Therefore a cluster analysis was conducted.

Cluster analysis is one of the possibilities to exploit the information contained in multi-dimensional comparisons using the differentiation of sets into several relatively unified sets of clusters (Parobek *et al.* 2016). The application of such a cluster analysis can lead to favorable results. If the prospective employee motivational systems are based on differing criteria according to variable characteristics, then it is appropriate to use cluster analysis for the evaluation of motivational factors (Zamečnik 2013). Cluster analysis can be used to create a certain type of motivational program. Cluster analysis can also be used for more detailed verification of the structure and ranking of importance of motivational criteria.

The clustering method was used to find distances between the questions. For computing the distances between the questions, the percent disagreement measure distance equation, (x,y) = (number of $x_i \neq y_i)/i$ was used due to the categorical nature of the answers. For the clustering algorithm the hierarchical single linkage known as the nearest neighbor method was used. In this method the distance between two clusters is determined by the distance of the two closest objects within the different clusters $d(C_iUC_j,C_k)$=min. ($d(C_i,C_k)$, $d(C_j,C_k)$). All statistical analyses and graphical presentations were conducted using the STATISTICA 10.0 statistical software.

RESULTS AND DISCUSSION

Tables 1 to 6 present the frequencies of answers to questions offered in the questionnaire from the years 2010 and 2014. *N* stands for the size of the sample, df is the degree of freedom, χ^2 - represents the Pearson's chi-squared test and p-values[1].

Table 1. Which Employee-related Factors do Managers Give Most Attention while Managing?

GRADE	1		2		3		4		N	df	χ^2	p
NEED / YEAR	2010	2014	2010	2014	2010	2014	2010	2014				
Physiological needs	26	37	77	57	25	41	52	45	180	3	21	<0.0001
Security needs	13	23	13	58	26	57	128	42	180	3	258	<0.0001
Social needs	1	53	63	64	103	36	13	27	180	3	2.763	<0.0001
Self-approving needs	12	43	90	71	77	44	1	22	180	3	539	<0.0001
Need for success	13	53	39	65	116	33	12	29	180	3	224	<0.0001
Survival needs	12	59	51	65	77	31	40	25	180	3	221	<0.0001
Need for love and belonging	39	92	102	47	38	20	1	21	180	3	510	<0.0001
Need for power	115	62	51	55	13	25	1	38	180	3	1.405	<0.0001
Need for freedom	26	64	90	57	51	27	13	32	180	3	107	<0.0001
Need to learn and to have fun	25	79	64	48	64	29	27	24	180	3	140	<0.0001

(1 – never, 2 – sometimes, 3 – often, 4 – always)

Table 2. Why do People Work?

GRADE	1		2		3		4		N	df	χ^2	p
NEED / YEAR	2010	2014	2010	2014	2010	2014	2010	2014				
To have something	1	8	1	10	103	39	75	123	180	3	200	<0.0001
Be something or somebody	13	24	90	45	64	45	13	66	180	3	254	<0.0001

(1 – not important, 2 – less important, 3 – more important, 4 – very important)

[1] p <= 0.001 – the differences are "very highly significant" (99.9%), 0.001 < p <= 0.01 – the differences are "highly significant" (99.0%), 0.01 < p <= 0.05 – the differences are "significant" (95.0%), p > 0.05 – the difference is "non-significant" (90.0%)

Table 3. Which of these Factors are Important in Motivation?

GRADE	1		2		3		4		N	df	χ^2	p
NEED / YEAR	2010	2014	2010	2014	2010	2014	2010	2014				
Interesting job	1	22	64	26	63	68	52	64	180	3	467	<0.0001
Salary	1	17	1	10	77	28	101	125	180	3	374	<0.0001
Work success	26	13	13	22	90	62	51	83	180	3	42	<0.0001
Work independence	13	13	39	22	91	71	37	74	180	3	49	<0.0001
Work responsibility	13	10	51	25	64	54	52	91	180	3	45	<0.0001
Possibility of promotion	1	20	26	22	90	44	63	94	180	3	400	<0.0001
Possibility of self-development	26	22	39	34	103	48	12	76	180	3	372	<0.0001
Possibility of professional education	25	28	51	23	90	52	14	77	180	3	315	<0.0001
Company reputation	26	23	13	27	90	64	51	66	180	3	27	<0.0001
Company politics and strategy	26	28	51	36	65	61	38	55	180	3	12	0.0061
Outside auditing	51	44	77	57	40	37	12	42	180	3	81	<0.0001
Way of management	1	29	39	32	91	55	49	64	180	3	804	<0.0001
Relationships with superiors	2	15	51	35	90	66	37	64	180	3	116	<0.0001
Relationships with subordinates	13	22	39	28	90	62	38	68	180	3	42	<0.0001
Employees inter-relationships	1	15	26	19	102	52	51	94	180	3	259	<0.0001
Satisfaction with personal life	2	17	26	24	92	43	60	96	180	3	160	<0.0001
Work environment	1	22	39	23	91	44	49	91	180	3	508	<0.0001
Quality work schedule	13	15	64	20	64	54	39	91	180	3	101	<0.0001
Status	13	26	64	42	77	58	26	54	180	3	55	<0.0001
Safety	1	19	26	15	65	44	88	102	180	3	338	<0.0001
Information on company status	13	29	51	28	115	65	1	58	180	3	3.301	<0.0001
Financial awards	12	14	40	20	39	41	89	105	180	3	13	0.0040
Recognition	14	19	39	35	90	45	37	81	180	3	77	<0.0001

(1 – not important, 2 – less important, 3 – more important, 4 – very important)

Table 4. Can a Problem Increase Your Activity (Motivate You)?

GRADE	1		2		3		4		N	df	χ^2	p
NEED / YEAR	2010	2014	2010	2014	2010	2014	2010	2014				
For solving a problem special conditions are required	1	21	127	78	39	57	13	24	180	3	437	<0.0001
A problem is an additional motivator	1	36	26	68	114	52	39	24	180	3	1.332	<0.0001
Unmotivated employees do not see problems	13	35	26	55	90	61	51	29	180	3	88	<0.0001

(1 – never, 2 – sometimes, 3 – often, 4 – always)

Table 5. How Psychological Circumstances Influence Work?

GRADE	1		2		3		4		N	df	χ^2	p
NEED / YEAR	2010	2014	2010	2014	2010	2014	2010	2014				
Sense of work importance	13	10	39	24	116	73	12	73	180	3	332	<0.0001
Sense of responsibility	12	7	38	27	77	70	53	76	180	3	16	0.0012
Knowing the results	13	9	37	29	103	64	27	78	180	3	114	<0.0001

(1 – not important, 2 – less important, 3 – more important, 4 – very important)

Table 6. At What Level Do You Notice Demotivating Factors in Your Company?

GRADE	1		2		3		4		N	df	χ^2	p
NEED / YEAR	2010	2014	2010	2014	2010	2014	2010	2014				
Being discharged	26	15	51	29	90	53	13	83	180	3	406	<0.0001
Salary decrease	51	14	39	45	65	52	25	69	180	3	108	<0.0001
Use of punishment in managing	13	18	116	30	50	57	1	75	180	3	5.543	<0.0001
Creation of tensions between employees	39	17	64	32	51	52	26	79	180	3	136	<0.0001
Work hours shortening	141	100	13	28	12	32	14	20	180	3	65	<0.0001
Reprehending employees	39	16	77	48	63	60	1	56	180	3	3.050	<0.0001
No possibility of further education	47	28	65	67	66	46	2	39	180	3	698	<0.0001
Less freedom at work	51	24	89	50	39	46	1	60	180	3	3.514	<0.0001
Less work to do	26	84	64	45	78	29	12	22	180	3	174	<0.0001

(1 – not existing, 2 – existing a little, 3 – existing, 4 – very existing)

The results of the cluster analysis are given in Figs. 1 to 6, showing the tree diagrams for answers to each question for the years 2010 and 2014.

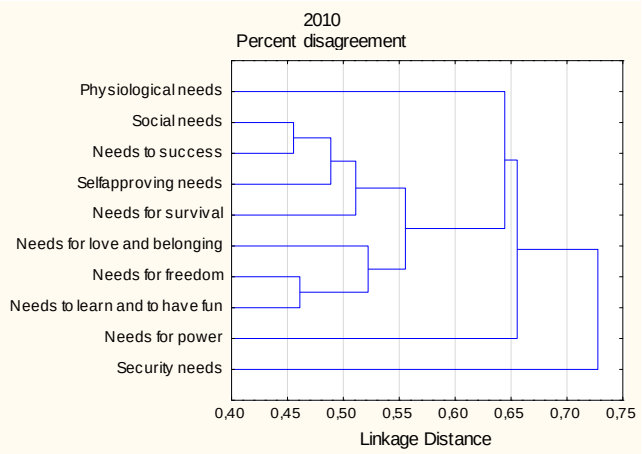

Fig. 1. Tree diagram for the answers to question 1, the clustering for the year 2010

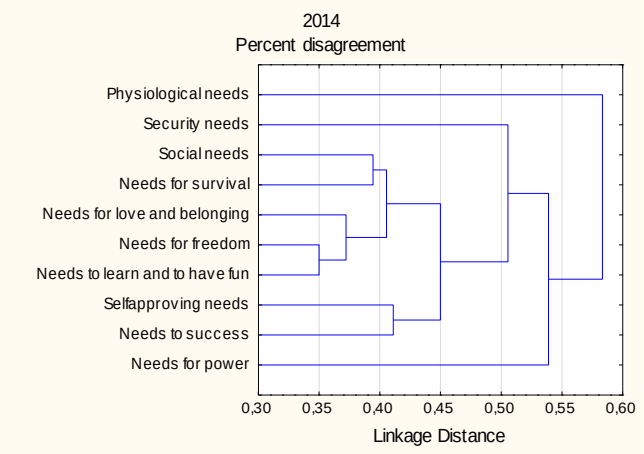

Fig. 2. Tree diagram for the answers to question 1, the clustering for the year 2014

Figures 1 and 2 show that there was a strong relationship between social needs and the need for success in the year 2010, while there is a strong connection between the need for freedom and the need to learn and to have fun in the year 2014. Those two strongest connections practically switched places in given years, while other answers exhibited significantly different connections during those years.

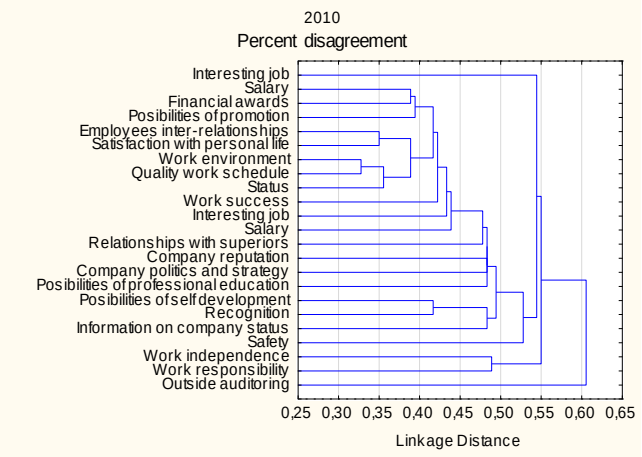

Fig. 3. Tree diagram for the answers to question 2, the clustering for the year 2010

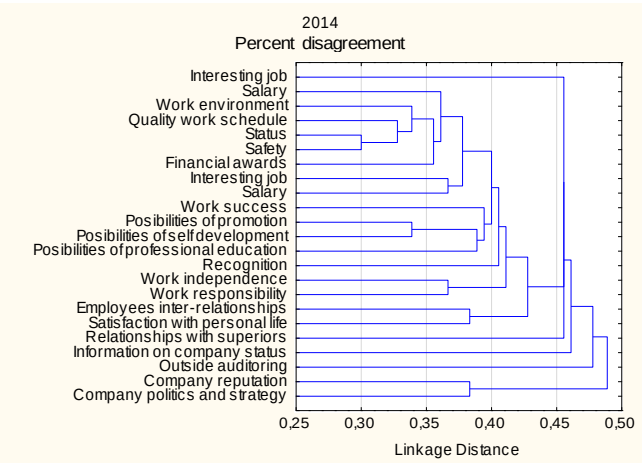

Fig. 4. Tree diagram for the answers to question 2, the clustering for the year 2014

Figures 3 and 4 show that among motivation factors in the year 2010, the strongest relationship was between the work environment and a quality work schedule, followed by employees inter-relationships and their satisfaction with personal life. In the year 2014, the situation changed and the strongest connection was between status and safety, followed by a quality work schedule. This data means that in the year 2010, when the economic situation was not as satisfying and when people were afraid to lose their jobs, physiological

needs were most important. On the other hand, in the year 2014, after restructuring the company, and when the economic situation became better, employees became more motivated with social needs, especially within the company.

Cluster analysis for the answers to question 3 show the way that employees think about a problem as a motivator, and in the year 2010 employees have seen a lot of problems within the company, so they strongly connected a problem as a motivator and the inability to see the problem for unmotivated employees. In the year 2014 the situation changed and employees put an accent to seeing a problem as a motivator and the special conditions required to solve the problem.

Results of the cluster analysis for the answers to question 4 showed that the linkage distance between two answers to the question, "Why do people work?," was significantly different between the years 2010 and 2014. While employees thought that "having something" was a motive to work in the year 2010, in the year 2014 employees considered "recognition" as a bigger motive to work.

Results of the cluster analysis for the question, "how psychological circumstances influence work" show that employees were more concerned about the results, especially financial results, and the meaning of work in the year 2010, while in the year 2014 they think more of responsibility at work connected with a sense of work importance.

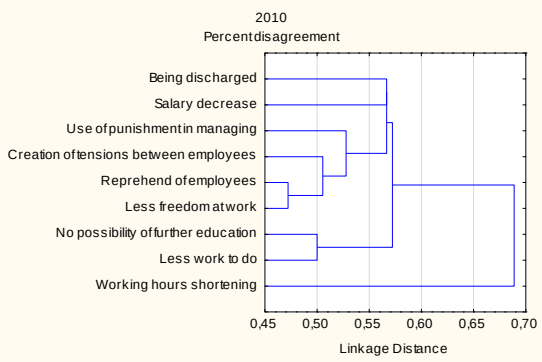

Fig. 5. Tree diagram for the answers to question 6, clustering for the year 2010

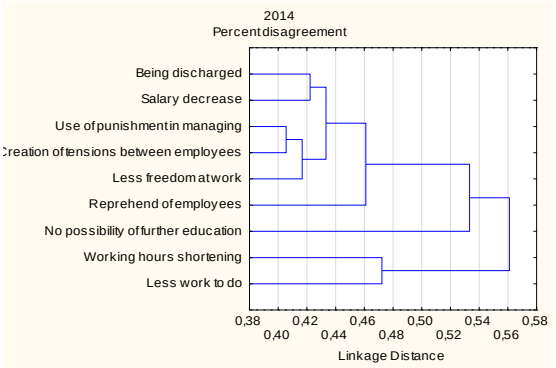

Fig. 6. Tree diagram for the answers to question 6, clustering for the year 2014

The last question can be summarized by the following results in Figs. 5 and 6. Regarding demotivating factors and their presence in the company, employees considered different factors as more present in the year 2010 than those in the year 2014. The strongest correlation is between the reprehending of employees and less freedom at work, followed by a connection between less work to do and no possibility for further education in the year 2010. In the year 2014 the strongest connection was between the use of punishment in managing and the creation of tensions amongst employees.

This research was the first of its kind conducted between two different business environments – business behaviour in a time of full crisis and business behaviour in the time after a crisis, and after serious restructuring of a company. For instance, Jelacic *et al.* (2007) established which factors motivate the employees the most in the time of a normal business environment, comparing factors which employees value the most with their satisfaction, with those same factors in Central European countries Croatia and Slovakia. Kropivsek *et al*. (2011) compared which motivating and demotivating factors were most

important to employees in the time of a full economic down-turn in Central European countries Slovenia and Croatia. Another research study was conducted by Jelacic *et al*. in 2010, which tried to establish what motivates employees in industrial plants at the time of a full crisis, comparing the most important motivating factors for employees and their satisfaction with those same factors in Croatian industrial plants. However, none of those research studies compares two different business environments, before and after the restructuring of a company.

Kvita (2009) decided to use cluster analysis to group the unsatisfied needs within the personnel of one enterprise in an East European country, Ukraine. Twenty-seven unsatisfied needs were placed in 6 groups of needs. Research conducted by Zamečnik (2013) in the Central European countries of the Czech and Slovak Republics, proposed the implementation of a motivation program based on the questionnaire containing 27 questions analyzed by cluster analysis. Research conducted in France by Naisseh *et al.* (2015) used cluster analysis to establish a relationship between parents' motivation and children's physical activities. The cluster analysis gave 4 motivational profiles. Rebetez *et al.* (2015) conducted a research on cognitive, emotional and motivational factors to procrastination using cluster analysis among French speaking students in Switzerland. None of those research studies were conducted in wood processing companies. Research conducted in wood processing and furniture manufacturing industrial branch using cluster analysis was done by Motik *et al.* (2004). The authors used cluster analysis to compare furniture demand in Slovakia and Croatia giving groups of preferences of furniture buyers in two different countries. This research uses cluster analysis to compare motivation and de-motivation factors in one company and in two different years.

CONCLUSIONS

1. The aim of this research was to establish the differences between the motivation of employees in a wood processing and furniture manufacturing company before the restructuring, at the time of an economic down-turn at its peak, and after the restructuring, at the time of economic recovery and after a new motivation and stimulation system was introduced. Research discovered that the differences between all given questions and answers were significantly different, so the cluster analysis was conducted to establish the linkage distance between answers to all the questions separately for both research years, 2010 and 2014.
2. The study discovered that employees were more afraid for their workplaces and their salaries in the time of a crisis, which is understandable, since the situation with the number of unemployed people in Croatia during the crisis was high and it was very hard to find another job. The number of employees in the wood industry branch decreased during the crisis from 25,000 in year 2006 to 21,000 in year 2011. So, physiological needs were the most important for employees in the year 2010. That situation changed in the year 2014, since the economic recovery had started. Wood processing and furniture manufacturing achieved the best results in exports ever (over 1 billion USD) and employees in the branch felt more secure about their jobs, so they began to think about other needs, such as social needs. In the year 2014 employees thought more about work conditions and a quality work schedule as their motivation factors.

3. Demotivating factors and their presence in the company also had changed and there was a significant difference established between results achieved in the year 2010 and those from the year 2014. The most important difference between the years 2010 and 2014 was established among the key psychological conditions at work. The grades in year 2014 are much higher than those in the year 2010, which is a very good trend.
4. The period of time after the restructuring took place and the survey was short, so the next study of this type should be conducted in a year or two from now, to investigate if a normal economic environment has a better or any different influence on motivation and demotivating factors in the company.

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