

## Co-Determination of Labor and Competitiveness: Evidence From Sample of Small Firms From R. Macedonia

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**Abstract:** In this paper attempt has been made to explain the association between co-determination and the competitiveness of small firms. The sample consists of 54 small firms (up to 50 employees) from R.Macedonia. Hypothesis set is that employee participation in the decision making process (co-determination) is positively associated with the competitiveness of small firms. Analysis that is applied here is factor analysis and canonical correlations between variables used as proxies for co-determination and competitiveness.

**Keywords:** co-determination, competitiveness, small firms, employee participation, decision making process.

### Introduction

The word "co-determination", is a concept of employee consultation and participation in company's decisions at two levels: at the level of company and at the level of establishment. The concept of co-determination has its origins in 1920's,<sup>1</sup> see Page, (2011). In R.Macedonia, employment relationships are governed by the Constitution and Labor law of Republic of Macedonia. Macedonian labor law does not require management participation by labor. But by approaching European union, regulations of the union (European directives) will start apply on the new member states, Jeftic (2012). European work council's directive (EWC)<sup>2</sup>, firstly gave embodiment of the European model of representation that will apply to transnational companies that work on EU territory. But later also will be applied to the new member states of EU. The directives basic requirement is the establishment of a procedure for information and consultation between employees and the firm where they work, Hogler, (1996). Member states (incumbent), and future member states have possibility to choose whether the regulation will be applied on enterprises with more than 50 employees, or a business unit with more than 20 employees or institutions with more

than 20 employees. Common law and civil differ in the approach to employment. In the US individual model of employment at will, any regulations is seen as potentially harmful, but EU model of mandatory employment rights, seek the rationale for its existence in the existence of market failures such as agency or hold-up problems, see Adnett, Hardy, (2005). According to the report from 2015, see Anceva, (2015), there was no recent change in the situation with a workplace representation in R. Macedonia, and no changes in legislation in that regard have been done recently. As it is in Macedonian Labor law, workplace representation is mainly covered by trade union organizations in the company. However, if there is no trade union, which is typical for a small firm, then practically there exist no workplace representation.

Literature review on the theory behind the co-determination level and competitiveness

A study of Mizrahi, Shlomo (2002), argues that firms efficiency, stability and workers participation can be achieved through participatory decision rules therefore government intervention is considered to be marginal throughout. Therefore, the hypothesis is set that competitiveness is associated with employee participation in decision making i.e. co-determination. It must be that more competitive firms allow workers to make more work related decisions on their own. Some studies show that economic benefits tend to be higher; the higher the level of participation and where there is financial participation through profit sharing and or ownership stakes, Hodgson, (1999). By the institutional view in

<sup>1</sup>Although as a first laws that were requiring workers' rights are mentioned include the Oxford University Act 1854, Voluntary Act on manufacturing companies in Massachusetts in 1919, etc.

<sup>2</sup>Council directive 94/45/EC of 22 September 1994 on the establishment of a European Works Council or a procedure in Community-scale undertakings and Community-scale groups of undertakings for the purposes of informing and consulting employees

economics, firms are institutions<sup>3</sup> and they are “instituted” by people in the sense that they must be positively created by different people contributions, see McGaughey,(2015) And those contributions differ between different interest parties, so that their benefits and claims should differ too. An important observation has been made that firms matter when important investment has to be made by different parties. Because long term contracts cannot be written in advance (it is impossible), quasi-rents cannot be defined what is to be done in every possible contingency, see Hart and Moore (1990)<sup>4</sup>. One study by Patterson et al (1998), finds a very strong and positive association between good human resource practices such as employee involvement and team working to have much greater influence on profitability than traditionally predominant concerns such as business strategy, and R&D, see Felix and Kraft (2005). And through productivity competitiveness of firms is improved in a direct way. Other problem that these non-mandatory work councils<sup>5</sup> solve is the pervasive asymmetry of information between employer and employee. Social benefit of information consists in the fact that it maximizes utility of employees and employers. So in short non-mandatory work council as an important labor market institution possess economic value as a communicator between managers and employees. These are gains from information disclosure, Freeman, Lazear (1995). In this model workers can respond flexibly dependent whether firm is in a good or bad state so Freeman, Lazear (1995) model for workers utility dependent on information disclosure is given as:  $EU_n = PU_n + (1 - p)U_0$ . In the previous expression  $EU_n$  explains workers utility when workers are working normal, and  $P$  represents percentage of workers that are working normally and

$U_n$  represents utility that they are receiving when they are staying at the firm,  $U_0$  represents the utility from leaving the firm. In one firm workers are deciding about the pace by which they will work fast (F) or normal (N)<sup>6</sup>. Problems arise here because employees are lacking credible information whether firm is in a normal or bad state. In one particular case worker may be indifferent between working fast (F) and Normal (N), and probability  $p^*$  is defined as:  $p^* = \frac{(u_f - u_0)}{(u_n - u_0)}$ . This probability  $p^*$  is probability in which employees are indifferent between normal and bad state. In this model worker act indifferently towards information about the state of the firm but managers are opportunistic i.e. they are not disclosing information. And  $p^*$  lies between 0 and 1. When  $p^*$  will be low it means that workers are “aggressive” in insisting at working in normal pace rather than agreeing with managerial demands that they need to work fast because the state of the firm is bad. Employee councils affect productivity, efficiency in the firm through increasing the levels of job security. Job security is higher valued outcome by the employees according to a study by Clark(2005). Job security which is enhanced by the communication between employee participation in the decision making process can resolve the adverse selection problem and raise the economics efficiency, i.e. workers will work efficiently or socially optimal (Akerlof, 1976). The last will reduce dysfunctional behaviours, Josheski (2012). In EU all the member states have the level of protection of the dismissal is unfair, Robinson, Fox,(1985). Corporatist contest the argument that job security legislation and centralized co-ordinated bargaining produces hysteresis i.e. downward inflexibility (the Beveridge curve)<sup>7</sup> in the relationship between vacancies and unemployment. The trouble with these voluntary councils is that neither workers nor the employers have will to establish them with the power to maximize social value. Also one particular study by Bauer, (2004) finds that on average higher opportunity to participate in the decision making process and improved

<sup>3</sup>Institutions are viewed as “rules of the game.....or humanly devised constraints” in the society, North (1990).

<sup>4</sup> quasi rents are additional income differs from economic rent because it is temporary. So in a long run one cannot guess contribution of the different parties in the executed contract. So contracts are incomplete. An incomplete contract is an agreement that does not specify actions and payments for all possible contingencies.

<sup>5</sup> A workers' council is a form of political and economic organization in which a single place of work or enterprise, such as a factory, school, or farm, is controlled collectively by the workers of that workplace, through the core principle of temporary and instantly revocable delegates.

<sup>6</sup> Workers view speed as bad and detrimental for their utility and they prefer normal pace. They receive utility  $u_n$  working at normal pace and they receive utility  $u_f$  working at fast pace. And  $u_n > u_f$ .

<sup>7</sup> A Beveridge curve, is a graphical representation of the relationship between unemployment and the job vacancy rate (the number of unfilled jobs expressed as a proportion of the labor force)

communication with co-workers leads to more positive average welfare of the employees. In majority EU countries employee consultation (upward and downward communication) is legally required through joint consultations and through representative staff bodies and on average is increasing. According to the Cranet data set by 2004 in countries like UK, France, Germany, Sweden Spain, Denmark, Nordic countries, and Slovakia employee consultation either has increased or stayed the same in a three years period of time and in a small percentage of firm had decreased. The study by Hubler and Jirjahn(2003) also showed that the presence of work councils exerts positive impact on productivity.

### Data and Methodology

Data set used for estimations consists of 14 variables (Likert type scale questions) and 54 observations i.e. small sized firms (up to 50 employees) that filled the questionnaires. Questionnaires were distributed to the small firms on the territory of Macedonia. Likert type scale was offered to those who filled the questionnaire and the scale was as :1. Strongly disagree, 2. Disagree, 3. Neither agree nor disagree, 4. Agree, 5. Strongly agree. For the descriptive statistics see Appendix 1. The initial component analysis is simply initial factor analysis with unities on diagonal of the correlation matrix (identity matrix), Cureton, D'Agostino (1993). In this paper it has been used the principal-axes method, the result is principal-factors. In order here not to make confusion, Principal component analysis (PCA) is different from factor analysis and it has been attributed to Hotelling (1933), but according to Leeuw (2013), there were modest PCA beginnings in Galton (1889). On the other hand, factor analysis was initiated by Spearman (1904). Factor analysis is being described as statistical technique for data reduction Stata 13 (2013). It reduces the number of variables in the linear combinations, that hopefully will admit meaningful interpretations. Mathematically model this paper uses can be described as:

$$x_n = a_{n1}F_1 + a_{n2}F_2 + a_{n3}F_3 + \dots + a_{nm}F_m + a_n U_n \quad (1)$$

In the previous form  $x_1, \dots, x_n$  are the observed variables,  $F_1, \dots, F_n$  are the set of common factors and  $U_1, \dots, U_n$  represent the set of unique

factors<sup>8</sup>. Or in matrix terms we have:  $x = aF + \varepsilon$ .

Assumptions about F are:  $E(F) = 0$  and  $Cov(F) = I$  and that F and  $\varepsilon$  are independent.

Afterwards once meaningful combinations of variables are found Cronbach's alpha (introduced by Cronbach, 1951) test has been conducted on the sets of variables determined by previous factor analysis. Cronbach's alpha coefficient assess the reliability of a summative rating (summative scale) or Likert scale (Likert, 1932). Data set used in this paper is consisted of Likert type scale questions, so this is justifying moment for estimating Cronbach's alpha coefficient here on the meaningful combinations of questions based on the factor analysis. Cronbach's alpha coefficient can be presented mathematically as: see

$$\alpha = \frac{k\bar{r}}{1+(k-1)\bar{r}} \quad (\text{alpha Stata 2013})$$

In the previous expressions  $\alpha$  is the scale reliability coefficient,  $\bar{r}$  represents the average correlations,  $\bar{c}$  represents the

average covariance, and  $k$  represents the number of nonmissing values or Testlets or panels. It is generally accepted that value of alpha > 0.5 is taken as acceptable as a rule of thumb though this sometimes should be taken cautiously<sup>9</sup> (see Cortina, 1993). At the end canonical correlations analysis also has been attempted in order to prove the robustness of the results. Canonical correlation analysis also originated from Hotelling's work (Hotelling, 1935, Hotelling, 1936). Canonical correlation attempts to describe the relationships between two sets of variables. In our case or in general case combinations of variables are  $X = (x_1, \dots, x_K)$  and  $Y = (y_1, \dots, y_L)$  (see canon-stata13, 2013). And now  $\hat{x}_2$  and  $\hat{y}_2$  are those combinations of variables so:

$$\begin{aligned} \hat{x}_2 &= \beta_{21}x_1 + \beta_{22}x_2 + \dots + \beta_{2k}x_k \quad \text{and} \\ \hat{y}_2 &= \gamma_{21}x_1 + \gamma_{22}x_2 + \dots + \gamma_{2k}y_L \end{aligned} \quad (2)$$

<sup>8</sup> But this set of observable random variables  $x_1, \dots, x_n$ , have means  $\mu_1, \dots, \mu_n$ , so the functional forms can be written

$$x_1 - \mu_1 = a_{11}F_1 + a_{12}F_2 + a_{13}F_3 + \dots + a_{1m}F_m + a_1 U_1$$

$$x_2 - \mu_2 = a_{21}F_1 + a_{22}F_2 + a_{23}F_3 + \dots + a_{2m}F_m + a_2 U_2$$

$$\dots$$

$$x_n - \mu_n = a_{n1}F_1 + a_{n2}F_2 + a_{n3}F_3 + \dots + a_{nm}F_m + a_n U_n$$

Or in matrix terms we have:  $x - \mu = aF + \varepsilon$ .

<sup>9</sup> A greater number of items in the test can artificially inflate the value of alpha and a sample with a narrow range can deflate it, so this rule should be used with caution.

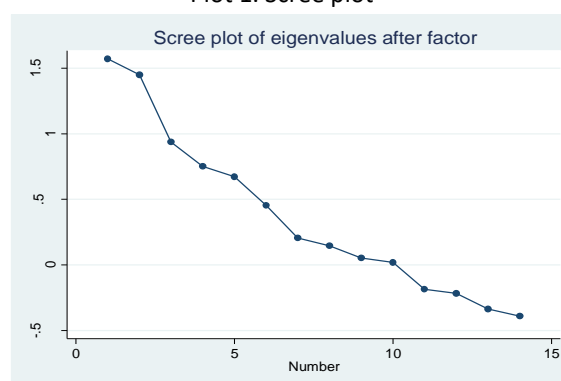
This correlation is maximized subject to the constraints that  $\hat{x}_1$  and  $\hat{x}_2$ , along with  $\hat{y}_1$  and  $\hat{y}_2$ , are orthogonal and that  $\hat{x}_1$  and  $\hat{y}_2$ , along with  $\hat{x}_2$  and  $\hat{y}_1$ , are also orthogonal. Later variables in the canonical correlation post estimations were grouped in two groups one to denote co-determination (employee decision participation) and competitiveness to provide robust correlation between them.

## Results

First number of retained factors have been determined. Because as a default criterion Stata software puts mineigen(0) i.e. minimum eigenvalue value zero so all positive eigenvalues will be retained. But with 10 factors 4 proved to be meaningless i.e. not explaining much so it was decided to do analysis with 6 factors. If the criteria were eigenvalues to be higher than 1 than only two factors would have been retained but then communality would have been small and variables were not well explained by the factors. First four variables (derived from the questionnaire) are serving as proxies for employee participation or co-determination: namely those are: 1. *employees are making work related decisions without necessary consultation or approval from their superiors*, 2. *Firm supports the individuals or teams, for more independent work, compared to the firms where managers got the last word*, 3. *Manager is convinced that employees will achieve greatest results when they make decisions*, 4. *In the enterprise employee*

*initiatives (more than managerial initiatives) are leading in identifying new choices in business conduct.* As a variables used as proxies for the competitiveness are being used more variables related to whether those investigated thought that company is well positioned on the market, attitude towards risk and innovations. So this set of variables to define competitiveness are; 5. *management of the firm is not in position to follow activities of competition and cannot determine firms position on the market*, 6. *enterprise is efficiently positioned when compared with the competition*, 7. *firm is improving its competitive position on the market through price decreasing*, 8. *The company usually supplies the market with the same usual products and services and does not introduce new products and services in their supply*, 9. *Management in the enterprise aims at selling the usual products more than when compared to the introduction and sales of some new products*, 10. *firms managers believe that organizational culture in the firm should be constantly investigated*, 11. *Management always makes "secure certain decisions" and avoids risky ones*, 12. *Management usually supports projects that have positive real rates of return on investment compared with high risk projects*, 13. *Management promotes the process of introducing new products, ideas and changes in business conduct*, 14. *in the battle with competition ,this firm reacts quick in the implementation new services and methods of business conduct.* Next follows scree plot of eigenvalues associate with the corresponding factors and is followed by factor analysis.

Plot 1. Scree plot<sup>10</sup>



<sup>10</sup>Depicts eigenvalues associated with a component or factor in descending order versus the number of the component or factor, then afterwards the table with the results is been provided.

Table 1. Factor analysis results/principal factors method<sup>11</sup>

Variables	Factor analysis/correlation Method used principal factors						Uniqueness	Communality
	factor 1	factor 2	factor 3	factor 4	factor 5	factor 6		
<i>employees are making work related decisions without necessary consultation or approval from their superiors</i>	-0.11	0.03	-0.53	0.35	0.09	-0.04	0.57	0.43
<i>Firm supports the individuals or teams, for more independent work, compared to the firms where managers got the last word</i>	0.50	-0.33	0.09	0.00	-0.09	0.23	0.57	0.43
<i>Manager is convinced that employees will achieve greatest results when they make decisions</i>	-0.08	0.22	0.16	-0.15	-0.15	0.39	0.72	0.28
<i>In the enterprise employee initiatives (more than managerial initiatives) are leading in identifying new choices in business conduct.</i>	0.21	-0.32	0.28	0.26	0.36	-0.24	0.53	0.47
management of the firm is not in position to follow activities of competition and cannot determine firms position on the market	-0.68	-0.20	0.22	0.10	0.08	0.00	0.44	0.56
enterprise is efficiently positioned when compared with the competition	0.74	0.07	0.01	-0.17	0.09	-0.05	0.40	0.60
firm is improving its competitive position on the market through price decreasing	0.04	0.06	-0.37	0.35	-0.07	0.16	0.70	0.30
The company usually supplies the market with the same usual products and services and does not introduce new products and services in their supply	-0.19	0.04	0.34	0.14	-0.49	-0.20	0.55	0.45
Management in the enterprise aims at selling the usual products more than when compared to the introduction and sales of some new products.	0.09	0.65	-0.07	-0.19	0.03	-0.26	0.45	0.55
firms managers believe that organizational culture in the firm should be constantly investigated	-0.20	0.09	-0.18	-0.04	0.12	0.09	0.90	0.10
Management always makes "secure certain decisions" and avoids risky ones.	-0.14	0.16	0.27	0.03	0.43	0.19	0.66	0.34
Management usually supports projects that have positive real rates of return on investment compared with high risk projects.	0.13	0.24	0.33	0.30	0.07	0.10	0.71	0.29
Management promotes the process of introducing new products, ideas and changes in business conduct.	-0.05	0.77	0.09	0.12	0.07	0.02	0.37	0.63
in the battle with competition ,this firm reacts quick in the implementation new services and methods of business conduct.	0.35	0.16	0.13	0.46	-0.17	0.03	0.59	0.41
Number of observations:54 number of parameters :60 ,retained factors 6								
Variance explained	11.22	10.4	6.70	5.37	4.80	3.24		

Shaded elements of the matrix are denoting areas that factor loading is >0.3, others not shaded are treated as blanks

<sup>11</sup>For factor analysis see: Afifi, A. May, S.A., Clark, V.A., (2012) , Basilevsky, A. T. (1994), Gorsuch, R. L. (1983) , Mulaik, S. A. (2010) etc.

According to previous table vertically Factor 1 can be described as “individual work supported”, “manager can follow the competition”, and “firms is well positioned”, “innovativeness”. The actual variables (questions) that are explained with this factor are: Firm supports the individuals or teams, for more independent work, compared to the firms where managers got the last word, which is proxy for co-determination with competitiveness questions : management of the firm is not in position to follow activities of competition and cannot determine firms position on the market (because of the negative sign on the factor loading now this is interpreted as management of the firm is in position to follow activities of competition ..etc.) , firms is efficiently positioned on the market, and with the variable in the battle with competition ,this firm reacts quick in the implementation new services and methods of business conduct. Namely, this can be summarized as: there is higher co-determination and employee participation in the decision making process where management is good in following competition, firm is innovative and efficiently positioned on the market.

Factor loadings on the Factor 2 can be interpreted as: where management of the firms promotes new products and ideas (where management has the last word about innovativeness), employees’ initiatives are not leading in identifying new choices of conduct and independent worker’s decision making is not promoted.

Factor 3 can be interpreted as: where managers support only projects with low risk and real positive rates of return, and where firms are not competing by price employees are not making any decisions without consultations with managers. This means that risk averse managers do not promote co-determination when they are competing through price.

Factor 4 on contrary to factor 3 says that firms that have risk averse managers when it comes to projects they undertake and are price-competing firms are allowing employees to make decisions without consultation with their superiors. So when it comes to efficiency firms are allowing employees to make decisions (are allowing co-determination), because employee know the production process well and can make decisions that will lower cost of production and price and so firms will be more competitive.

Factor 5 loadings can be interpreted that where managers are risk-averse, but where employee’s initiatives are leading in identifying new types of business conduct company is innovative and does introduces new products and services.

Factor 6 explains that the manager of the firms is convinced that employees will achieve greatest results when they make decisions.

First variable proxy for co-determination “employees are making work related decisions without necessary consultation or approval from their superiors” depends negatively on factor 3 and positively on factor 4, this is summarized as: co-determination is usually allowed where companies are competing through prices and there are risk averse managers. Second variable proxy for co-determination “Firm supports the individuals or teams, for more independent work, compared to the firms where managers got the last word” depends significantly from the first factor only, which translate to: when firm is well positioned on the market and is innovative co-determination is promoted more. Third variable used as a proxy for co-determination “Manager is convinced that employees will achieve greatest results when they make decisions” is explained by the Factor 6. And conclusion that can be summarized here is that: co-determination is thought to be good by the risk averse managers. Fourth question that controls for co-determination “In the enterprise employee initiatives (more than managerial initiatives) are leading in identifying new choices in business conduct.” is explained well by Factors 2 and 5. This can be summarized so that: co-determination is more allowed where managers are not innovative and are risk averse compared to firms where managers are risk takers and innovative.

Through the factor analysis one can see from the tables that optimal groups of questions are following variables about codetermination and competitiveness: Co-determination<sup>12</sup> (2. Firm supports the individuals or teams, for more independent work, compared to the firms where managers got the last word), Competitiveness (5. management of the firm is not in position to follow activities of competition and cannot determine firms position on the market, 6. enterprise is efficiently positioned when compared with the competition, 14. in the battle with competition, this firm reacts quick in the implementation new services and methods of business conduct.). This is referred to as a

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<sup>12</sup> co-determination is not mandatory and Macedonian law does not contain any provisions regarding the matter of co-determination rights of a works council. And for the employers in Macedonia there is no obligation to set up work councils except they must inform and consult their employees if the firm employs more than 50 employees. So this is just the subjective answers to a questions related to employee participation and opinions of managers about it.

combination of group of questions A. And combination of questions B is: Co-determination(2. Firm supports the individuals or teams, for more independent work, compared to the firms where managers got the last word, 4. In the enterprise employee initiatives more than managerial initiatives are leading in identifying new choices in business conduct.), Competitiveness (9. Management in the enterprise aims at selling the usual products more than when compared to the introduction and sales of some new products.,13. Management promotes the process of introducing new products, ideas and changes in business conduct).

Here Cronbach's alpha coefficient is above 0.5 in the two tests 0.7 so that internal consistency is

questionable yet it is going to acceptable i.e. is not poor. Table with estimates obtained by Method used principal factors, orthogonal varimax (Kaiser on), was not reported because of the fact that results are similar to the one provided before with factors that were not rotated. Butrotated factor matrix has been presented for the 6 factors retained. Method of rotation is orthogonal varimax (Kaiser on).

From the above results first three question that define co-determination are highly correlated in the canonical correlations with the questions that determine competitiveness and canonical correlations are (according to p-values in the 4 tests conducted above) significant.

Table 2 Cronbach's alpha coefficient<sup>13</sup>

Combinations for variables for which Cronbach's (alpha) coefficient is estimated	Scale reliability coefficient
combination of group of questions A	0.6421
combination of questions B	0.5905

Table 3. Factor Rotation Matrix

	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
Factor1	0.9377	-0.1182	0.2798	-0.0471	-0.1524	-0.0555
Factor2	0.0923	0.8739	0.2888	0.0877	0.3525	0.1114
Factor3	-0.211	-0.0904	0.551	-0.7982	0.0006	0.0812
Factor4	-0.2523	-0.1386	0.7104	0.5672	-0.2965	-0.0538
Factor5	0.0218	0.0935	-0.0964	0.007	-0.4407	0.8872
Factor6	0.06	-0.4315	0.1439	0.1769	0.7552	0.4334

Interpretation of this table above is let say for first rotated factor Factor 1 (rotated)

$$Factor\ 1_{rotated} = 0.9377 \times Factor\ 1_{unrotated} + 0.0923 \times Factor\ 2_{unrotated} - 0.211 \times Factor\ 3_{unrotated} - 0.2523 \times Factor\ 4_{unrotated} + 0.0218 \times Factor\ 5_{unrotated} + 0.06 \times Factor\ 6_{unrotated}$$

And so on for other factors. Canonical correlations test results are:0.6706, 0.5515, 0.4219, 0.1171.

	Statistics	Pvalue>F
Wilks' lambda	0.310446	0.0824 a
Pillai's trace	0.945562	0.1086 a
Lawley-Hotelling trace	1.48477	0.0648 a
Roy's largest root	.817297	0.0019 u

e = exact, a = approximate, u = upper bound on F

<sup>13</sup> Cronbach's alpha tests represents the average value of the reliability coefficients that would have been obtained for all possible combinations of items when split into two half-tests, Gilem, Gilem(2003)

## Conclusion

Principal factors analysis used in this paper proved that there is existence of employee consultation and participation in the small firms in R.Macedonia. Even though it is not mandatory by law, there is evidence that there exists some level of co-determination between managers and employees in the small sized firms. Namely, as a conclusion drawn here are following: there is higher co-determination and employee participation in the decision making process where management is good in following competition, firm is innovative and efficiently positioned on the market, where managers got the last word about implementation of innovations co-determination is not promoted, risk averse managers do not promote co-determination when they are not competing through price, only they promote co-determination when they are competing through price. And finally the managers of the firms in the sample are convinced that employees will achieve greatest results when they make decisions. Though

the answers of the questions in the sample may be not objective and they are own opinions of those questioned yet data show positive evidence about the hypothesis of employee participation in small sized firms in R.Macedonia. From the results additional conclusion can be drawn and that there is no evidence that organizational culture of small firms is a factor in explanation of competitiveness and employee participation. Even though co-determination is not mandatory by law, Macedonian law has not even introduced this term yet, and does not contain any provisions regarding co-determination small firm's managers find it useful to consult and inform employees because of the widespread believe among them that joint consultation and information disclosure will motivate workers to put more effort and therefore increase their marginal productivity levels. Therefore, managers mostly share opinion that between competitiveness and employee participation and (downward and upward) communication there is positive link in small firms.

## Appendix 1 descriptive statistics and variable description

	Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Employee decision participation	employees are making work related decisions without necessary consultation or approval from their superiors	54	2.1	1.4	1	5
	Firm supports the individuals or teams, for more independent work, compared to the firms where managers got the last word,	54	2.9	1.4	1	5
	Manager is convinced that employees will achieve greatest results when they make decisions	54	3.5	1.1	1	5
	In the enterprise employee initiatives (more than managerial initiatives) are leading in identifying new choices in business conduct..	54	3.5	1.3	1	5
	management of the firm is not in position to follow activities of competition and cannot determine firms position on the market	54	3.1	1.4	1	5
Competitiveness of the firms in the sample	enterprise is efficiently positioned when compared with the competition	54	3.7	1.3	1	5
	firm is improving its competitive position on the market through price decreasing	54	2.1	1.4	1	5
	The company usually supplies the market with the same usual products and services and does not introduce new products and services in their supply	54	3.6	1.3	1	5
	Management in the enterprise aims at selling the usual products more than when compared to the introduction and sales of some new products.	54	3.5	1.4	1	5
	firms managers believe that organizational culture in the firm should be constantly investigated	54	1.7	1.0	1	5
	Management always makes "secure certain decisions" and avoids risky ones i.e. is risk averse	54	4.0	1.0	1	5
	Management usually supports projects that have positive real rates of return on investment compared with high risk projects.	54	3.1	1.3	1	5
	Management promotes the process of introducing new products, ideas and changes in business conduct.	54	2.7	1.3	1	5
in the battle with competition ,this firm reacts quick in the implementation new services and methods of business conduct.	54	2.9	1.1	1	5	

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