**What Drives Value of Automated Performance Management Systems: Empirical Assessment**

**Abstract**

The paper aims to assess the value of an automated performance management system in public sector organizations in Latvia and to identify which components of the system create more value for employees and for organizations. Based on quantitative methodology (n = 3680) the research proves the value of PMS for both: employees and organizations indicating IT tool, fairness and constructive feedback as the core elements. This study offers empirical evidence that, if the system is well designed, IT tool is easy to use, and it has top-management support, individual supervisors’ skills and attitude is not so important for the overall success and the value of automated performance management system in public sector organizations.

**Keywords:**

performance management system, public sector, performance appraisal, human resource management

**Introduction**

One of the most important human resource management practices is performance appraisal (Gupta & Kumar, 2013), but at the same time, it is one of the most complex and controversial techniques especially when used in the public sector (Staronova & Spackova, 2017). Nowadays many organizations have shifted from performance appraisals to performance management (Toppo & Prusty, 2012) and have implemented organization-wide systems. Performance management methods are receiving increased attention (Buchner, 2007), since, it is broader and more meaningful concept than simple performance measurement (Halachmi, 2011) an is regarded as a crucial aspect for organizational effectiveness (Cardy, 2004). Over the last decades, the focus has moved from performance measurement and appraisal to the design and development of organization-wide Performance Management Systems (PMS) (Pavlov & Bourne, 2011).

Use of performance management is growing also in public sector organizations (Swee, 2012). Researchers and practitioners believe that performance measurement provides transparency and evidence of efficiency and effectiveness of an organization (Halachmi, 2011) what is essential for the public sector. Over the last decades in OECD member states public sector reforms are an on-going phenomenon and are generally aimed at ensuring management that is more effective and efficient. Performance management is regarded as one of the key drivers and central element of public sector reforms (Greiling, 2005) as organizations seek performance gains from their workforces during challenging economic times. EU member states have implemented performance management principles with the aim to improve human resource management (Ciobanu & Androniceanu, 2015). Moreover, modernization of public sector institutions and organizations have led to the implementation of performance management systems worldwide (Ohemeng, et al., 2015).

Existing research on performance management systems (PMS) have produced conflicting results and, according to several authors, the value of the performance management systems (PMS) is still poorly understood (e.g. Pavlov & Bourne, 2011; DeNisi & Pritchard, 2006), and full potential is not yet realized (Greiling, 2005). According to other scholars, the benefits of PMS seem to be questionable (Swee, 2012) and occasionally even unsuccessful (Halachmi, 2011). For example, Ciobanu and Androniceanu (2015) found that often performance management has not contributed to increase civil servants’ motivation. Other scholars claim that performance management has gone out of fashion (Williams & Beck, 2018) and workers are rarely satisfied with it (Van Dijk & Schodl, 2015). Still, there are not many alternatives and researchers state that PMS is still a useful tool for managing staff’s performance and for facilitating its development (Benedikt, 2014).

There is plenty of research about performance appraisals and performance measurement, but there is a lack of research about performance management as an integrated system and especially about its value for the organization. To date, little is known about which performance management system characteristics lead to desirable organizational outcomes (Decramer, et al., 2013). Van Dijk and Schodl (2015) states that the research should be more applicable, currently it lacks empirical evidence about the value of PMS. How PMS are perceived by the employees and what is the impact of specific components of PMS on employee perception of the system? What is the role of supervisors and what skills are needed? We believe these questions are important for organizations.

In line with the above, the purpose of this paper is to assess the value of PMS in public sector organizations and to identify which components of the system create more value for employees and for organizations, as well as to identify the role managers play in ensuring the success of PMS.

We believe that this research makes several important contributions. First, we develop a better understanding of the interaction between the components of modern PMS and we identify the role of manager-supervisor in a successful implementation of PMS. Second, we contribute to the public-sector organizations management who are advised to implement PMS in EU member states and worldwide.

**Theory and hypotheses development**

**From performance appraisals to integrated performance management systems**

Traditionally performance appraisal and management is explained by several motivation theories. Goal setting theory and Expectancy theory was the primary domain for explaining how and why employees respond to performance appraisals and performance management (Aguinis, 2009). Goal setting theory suggests that the individual goals established by an employee play an important role in motivating him/her for superior performance (Salaman, et al., 2005). This theory has led to the implementation of management by objectives (Lussier & Hendon, 2013) and including goals as an essential part of performance management. Expectancy theory says that “employees are motivated when they believe that they can accomplish a task and the rewards for doing so are worth the effort” (Lussier & Hendon, 2013: 424). Employee performance is influenced by their expectations concerning future results (Salaman, et al., 2005), thus, according to this theory, PMS are traditionally linked with the remuneration system.

Performance appraisal is widely considered an effective tool to make the most of employees (Prowse & Prowse, 2009) and is an essential part of performance management. Toppo and Prusty (2012: 2) state that performance appraisals are “as old as mankind” and they have developed from “man-to-man” rating system to 360-degree appraisal and such terms as merit rating, behavioral assessment and progress reports have been introduced.

Performance appraisal refers to “the methods and processes used by organizations to assess the level of performance of their employees and to provide them with feedback” (Van Dijk & Schodl, 2015: 716). Beach (1980) and Toppo and Prusty (2012) stress the importance of systemic evaluation performed during a certain period of time and link to the potential for development as components of performance appraisal

Performance appraisals are heavily criticized for complexity and mixed results. For example, managers can be reluctant to make negative judgments; they can use ‘central tendency’ ratings or use ‘political judgment’, etc. (e.g., Prowse & Prowse, 2009; Toppo & Prusty, 2012). Because of the shortcomings of performance appraisals, and in line with the goal-setting theory, organizations have realized that it is more important to focus on planning, defining and managing performance, and turned to implementation of the performance management as an organization-wide system.

Performance management is defined as “the process of identifying, measuring, managing, and developing the performance of human resources in an organization” (Lussier & Hendon, 2013: 285) or as “ the process that consolidates goal setting, performance appraisal and development into a single common system the aim of which is ensure that employee`s performance is supporting the company`s strategic aims” (Toppo & Prusty, 2012: 3). Performance management is more complex than performance appraisal: the main differences are linked to the continuity of the process, performance improvement by setting individual and team goals, the alignment of strategic goals of the organization, performance planning and assessing progress, and link to the development of the employees (Armstrong, 2017).

The latest development in the performance management process is related to performance management systems (PMS). The performance management systems are intended to help individuals improve themselves in terms of what they do in their organizations (Ohemeng, et al., 2015), to create the connection between individual and organizational objectives (Ciobanu & Androniceanu, 2015). Thus PMS contribute to transformation of individual-level to firm-level performance (Denisi & Smith, 2014). According to Mehrabad, et al. (2012) PMS is a multicriteria instrument made of a set of performance measures. It involves the use of quantitative and qualitative techniques and “paying attention to human (behavioral) side” of the organization (Halachmi, 2011: 502). Being more sophisticated than performance management, PMS includes the policy framework as well as the framework relating to all elements in the performance cycle, including performance planning and agreement; performance monitoring, review and control; performance appraisals and moderating; and managing the outcomes of appraisals (Bacal, 1999: 3). According to the Society of Human Resource Management (SHRM) performance management systems (PMS) typically include performance appraisal and employee development (Pulakos, 2004).

In line with the development of information technologies, a new avenue for the development of PMS is related to performance management system automation, since the process of performance management can be easily administered through the use of technology – PM software. In modern organizations, performance management is widely considered as a component of business intelligence and software-aided management. HR practitioners define performance management system (PMS) as a process and a tool (Handrik, 2018), typically a software tool, that companies can use to evaluate the performance of their employees. According to practitioners, the performance management system is “an information system that helps to ensure that organizational goals are being met efficiently and effectively” (InetSoft, 2018).

**Components of PMS**

Nowadays PMS refers to the process and a software tool. No doubt that the software tool must be easy to use and understandable for all level employees, information on it should be available if problem accrues.

Another part of PMS is the process. Public sector organizations are traditionally bureaucratic, however, required to achieve good performance, thus they need to develop integrated PMS. Their design and administration should be tailor-made and include essential components to match organizational aims.

Researchers and practitioners have identified many factors that impact the effectiveness of an organization’s performance management system. Typically the most important are goals, fairness and transparency of the process, link with the remuneration system, and the supervisor`s skills and attitude to provide feedback and identify areas of performance development (e.g. (Pulakos, 2004; Ayers, 2013; Dello Russo, et al., 2017; Zenger, 2017; Harrington & Lee, 2015; Halachmi, 2011; Van Dijk & Schodl, 2015). According to the literature, we divide these components two subcategories: the process components and the human side – supervisors` skills and attitude.

Essential process components are goal alignment, evaluation criteria, fairness and link to the remuneration system. According to Ayers (2013), goal alignment is one of the success factors of PMS, leading to employees understanding how their work relates to the organization’s goals and how strategic goals are embedded in their performance plans. Following Toppo and Prusty (2012), employee`s contribution should be aligned with organizational strategic objectives. Indeed, according to the goal setting theory, goals, in order to be motivation, must be well formulated, achievable, and employees should be involved in the process of setting the goals (Salaman, et al., 2005). PMS is providing guidance for employees (Pavlov & Bourne, 2011) and in public sector organizations, it is important to tighten the alignment of individual performance goals to targeted results of the organization, and the national and local governments (PAHROPF, 2016).

Goals are evaluated towards certain criteria, thus PMS should include behavioral and result expectations. A good system elevate the performance, not just measure against lower limits and employees must perceive their evaluation clear and be fair. Well-developed, efficiently administered processes are the ones which make the system user-friendly and well received by organizational members. Fairness of PMS should be acknowledged as one of the most important aspects (Harrington & Lee, 2015). Performance measurement should ensure transparency (Halachmi, 2011). According to Van Dijk and Schodl (2015: 717) PA process “is doomed to fail if ratees perceive it as unfair or manipulative”.

Following Zenger (2017), compensation decisions should be a product of performance management, so PMS tipically are linked to the remuneration system. PMS help organizations to make decisions about pay incentives and promotion (DeNisi & Pritchard, 2006). However, some academics have questioned the efficacy of pay for performance (e.g., Green, 2010). Pay for performance leads to increased performance, however, improvement seems to diminish quickly (Maltarich, et al., 2017), so positive results can be short term.

The human side of the PMS is related to leadership (Abu Mansor, et al., 2012) and direct supervisor, whose responsibility is to provide ongoing feedback, performance evaluation and set plans for performance development (Pulakos, 2004). Feedback from a leader is essential component increasing the effectiveness of the performance measurement process (Farris, et al., 2011). According to Ciobanu and Androniceanu (2015), the success of PMS largely depends on managers` ability to provide an appraisal to the subordinates, and leaders with coaching skills are perceived better and regarded as less manipulative (Dello Russo, et al., 2017). Similarly, Zenger (2017) and Handrick (2018) emphasize coaching and feedback and state, that PM process should include supervisors’ training - formal development on coaching skills. Leadership support in line with communication of the goals tends to predict employee alignment and satisfaction with PMS (Ayers, 2013). Researchers have found that the evaluators (supervisors) are the ones which can create problems for successful implementation of PMS. According to McMaxon (2013), Inadequate interpersonal skills - manager’s or employee’s ability to get along with others, communication skills which involve active listening, appropriate questioning, empathy, and right voice tone, even body language and attitude are the most frequent causes of problems with PMS. Moreover, Asmuss (2013) found that in Scandinavian context conversation between manager and subordinate should be more like a dialog between equal partners than an interview or top-down process.

Summarizing the above we hypothesize:

*H1a. PMS automation (ease of use and information about the system) is positively related to employee perception of value for himself.*

*H1b. PMS automation (ease of use and information about the system) is positively related to employee perception of value for the organization.*

*H2a: PMS system components (goal setting; evaluation process; fairness; link to remuneration system) are positively related to employee perception of value for himself.*

*H2b: PMS system components (goal setting; evaluation process; fairness; link to remuneration system) are positively related to employee perception of value for the organization.*

*H3a: Supervisor factors (feedback quality and attitude) are positively related to employee perception of value for himself.*

*H3b: Supervisor factors (feedback quality and attitude) are positively related to employee perception of value for the organization.*

**Method**

**Research settings**

Our empirical setting for this study is public sector organizations in Latvia. The performance management system in Latvian public-sector organizations is automated and tailor-made to match the sector characteristics and qualities as proposed by Boice and Kleiner (1997). The implementation of the PMS started in 2011 as part of the public-sector reforms. The system is called NEVIS and it consists of the system with a set of components and an IT tool. After more than five years of operation, it is possible to assess the value of the system for employees and for organizations and identify which elements contribute more to the value creation and what is the role of the supervisor.

Our sample consists of 156 public sector organizations which have been using the same automated PMS system (called NEVIS) for at least four years in between 2012 – 2017. We measure the value of PMS and its components as it is perceived by the employees.

**Measures**

The research is based on quantitative methodology. Based on review and analysis of the literature as well as observations of the PMS NEVIS, we designed questionnaire with 10 variable blocks (including in total 99 statements) and 4 demographic type questions (age, tenure and job position). We conducted online survey in fall 2017. We present the questionnaire scales and number of items per scale is seen in Table 2.

***Dependent variables: value for employees and value for the organization.***

Overall aim of PMS is to create high performance culture in which individuals take responsibility for their own goals and contribute to the organization (Toppo & Prusty, 2012). Researchers propose to measure the effectiveness of HR systems as the degree to which they are matching with both organizational and individual goals (e.g. Stone, et al., 2006). Following Krohlbacher and Reijers (2013), we measured the performance of PMS using subjective evaluation criteria. Two variables, perceived value for employees and value for the organization, were modeled as a result of successful implementation of PMS and thus dependent variables. We designed dependent variable *Value for employees* with two subscales – employees were asked to evaluate if the PMS help them to acknowledge their role in the context of organizational aims and if it increases their motivation. Similarly, we measure second dependent variable *Value for the organization* with three subscales: contribution of PMS to performance resultativity, quality of cooperation and improvement of organizational culture. A sample item is “Thanks to the NEVIS, I better understand my role in the performance of the institution's functions”.

***Independent variables: IT tool (system`s functionality and information) and system components (processes and supervisors` factors).***

According to Varma, Budghvar and DeNisis (2007), there are a great number of factors that potentially can influence the effectiveness of a PMS including technological and organizational factors. We grouped independent variables as IT tool characteristics and system`s components.

IT tool characteristics we measured as system`s functionality (sample statement is “NEVIS task evaluation section is convenient and understandable”) and clarity of information and instructions (for example, “I have enough information about the functionality of the IT system NEVIS”).

We measured performance management system`s components as goal setting process (for example, “My defined goals are understandable”), evaluation process (including the clarity of aims and criteria, competences, objectivity, scale of evaluation), fairness (sample statement is “I have the opportunity to challenge an unfair or unfounded assessment”), and link with remuneration (example is “Linking the assessment to the bonus is justified”).

Supervisor factors included feedback provided by the evaluator (for example “Feedback helps me understand what should be improved in my work”) and managers attitude and skills (sample statement is “During the interview, my manager motivates me”).

We used four-point Likert type scale from 1 “disagree” to 4 “agree”. Answer option “don`t know; cannot answer” was added and latter coded as a missing answer. Respondents who were not able to assess some components of the system we excluded from the regression analysis.

As *Control variables* we included age, tenure and job position to separate PMS variables from alternative possible explanations of the outcome variables.

We report the variables with questionnaire scales in Table 1.

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Insert Table 1 about here

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The total number of respondents was 3962, however, after excluding the respondents who picked the neutral answer for more three statements, as well as top-managers, 3680 valid responses were retained for the analysis. We decided to exclude Top-managers because they were involved in the creation of the system, thus they may have biased views about the effectiveness of the system. Top managers assessed value provided by PMS for themselves (M=3.01) as well as for organization (M=3.18) significantly higher than other groups – middle-level managers, employees, and line workers. This result might be expected since top managers are responsible for the implementation of the system. The characteristics of the sample which we used for the regression analysis is presented in Table 2.

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Insert Table 2 about here

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**Results**

We report descriptive statistics of the sample in Table 1. Results show that employees evaluate the PMS positively (all mean values are above scale average 2.5). They equally see the value of PMS for themselves (M=2.75) as the value for the organization (M=2.76), and the difference between the two is not statistically significant. Moreover, 60% of respondents assessed the value of PMS for themselves above average, 4% evaluated it neutrally and only 32% provided a negative assessment. In respect to value for the organization 62% of respondents provided positive value, 4% were neutral and 36% still evaluated the PMS as negative.

Regarding subscales of dependent variables, respondents perceive PMS as providing more value for seeing their role in the context of the organization than for increasing motivation. For organization, PMS is providing more value for improving culture than for the quality of cooperation and performance resultativity, still, all factors on average are evaluated positively (above neutral).

We report correlations in Table 3. As expected, positive correlation between value for the employee and value form the organization (r = .84; p < .001) suggests that organizational value is related to employee value, thus supporting the link between individuals and organizations.

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Insert Table 3 about here

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We analyzed differences between groups with Kruskal Wallis test. First, the differences between respondents from different age groups showed, that older respondents (48 years and over) feel that PMS provide more value for themselves (M=2.99) than younger employees (mean values between 2.61 and 2.77; p<0.05 for group differences). We found similar result in respect to the value for organizations.

Analyzing differences between employees with different tenure, significant differences were found between new employees (those who work less than 1 year) and other groups. New employees rated value for themselves on average on 3.05 and for the organization on 3.06, however other groups` evaluation was below 2.80 and 2.82. This can be explained with the fact that younger employees have experienced the performance appraisal process only once and still have not experienced any consequences.

***Common method assessment***

Because the research relies on self-reported measures and information about dependent and independent variables come from the same respondent, the potential of common method bias should be recognized. Common method bias can happen when variations in responses are caused by the instrument rather than the actual predispositions of the respondents that the instrument attempts to uncover (Podsakoff, et al., 2003). Hartman one-factor test, which is a commonly used method to address common method bias (Podsakoff, et al., 2012), showed that Factor 1 accounts for 45.72% of the variance, thus indicating that common method bias is unlikely to affect the data.

***Multicollinearity***

Before further analyzing the results, we tested for multicollinearity which exists when there is a strong correlation between one or more predictor variables and may create problems for analysis. The results show that variance inflation factor (VIF) range between 1.09 and 4.3, this is below 10, with the average being 2.29; and Tolerance from 0.23 to 0.92 what is well above 0.2. Thus, according Field (2018: 402), we concluded that multicollinearity is not a problem and the individual importance of a predictor can be assessed.

We present results of the predictors of both dependent variables value for employees and value for the organization in Table 4.

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Insert Table 4 about here

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The Model 1 shows that control variables - tenure, age and position dummies some are statistically significantly related to the perception of employee value as well as the organization`s value, however, have no predicting power (Adjusted R Square .04).

In our first set of hypotheses (Hypotheses 1 a and 1b) w predicted that PMS automation (ease of use of the IT tool and information about the tool) is positively related to employee perception of the value of PMS for himself and employee perception of the value of PMS for the organization. In Table 4 Model 2 adds IT tool factors as predictors and improves the model fit (ΔR2=0.36; p<.001). The model implies that the system's ease of use is significantly more important than access to the information for both dependent variables. The results offer support for hypotheses 1a and 1b.

Hypotheses 2a and 2b predicted that PMS system components (goal setting; evaluation process; fairness; link to remuneration system) are positively related to employee perception of PMS value for himself and employee perception of PMS value for the organization. Model 3 adds systems components and additional explanatory power (ΔR2=0.12; p<.001). Moreover, goal setting shows the strongest impact on both values for the employee and for the organization, followed by fairness and link to the pay system. This is in line with Hypotheses 2a and 2b. Interestingly that understanding of the evaluation process and criteria have no significant impact.

The final set of Hypotheses 3a and 3b predicted that supervisor factors (feedback quality and supervisors attitude) are positively related to employee perception of the value of PMS for himself and the value of PMS for the organization. In Table 3 Model 4 adds supervisor factors and improves the model by only 1%, however, this improvement is still significant (ΔR2=0.01; p<.001). Corresponding regression coefficients testing the interaction of feedback quality are positive and significant (B = 0.19; p<.05 for employee value, and B = 0.13; p<.05 for organizational value) thus this result is in favor of Hypotheses 3a and 3b. However, corresponding regression coefficients testing the interaction for supervisors’ attitude are negative and not significant (B = -0,03; p = .1 and B = -0.02; p = .35) thus supervisor`s attitude does not show significant impact. The findings support Hypotheses 3a and 3b regarding feedback, whereas the result regarding managers` attitude does not offer support for the Hypotheses.

**Discussion**

The study examines the value of automated performance management system in public sector organizations and identifies which components of the system create more value for employees and for organizations. The findings provide empirical evidence that well-designed PMS can provide value for organizations as well as for employees. This result contradicts Halachmi (2011) study, who concluded that performance management systems are occasionally even unsuccessful. We found that the majority of respondents In Latvian public-sector organizations (60%) agreed that PMS provide value for themselves as well as for the organization. Our results contradict Van Dijk and Schodl (2015) who claimed that workers are rarely satisfied with PMS, besides Ciobanu and Androniceanu (2015) found that often performance management has not contributed to increase civil servants’ motivation. This study showed that PMS still contributes to employee motivation, performance resultativity and has a positive impact on organizational culture. Interestingly, that older employees, those over 48, appeared to be more favorable to PMS. There can be 2 reasons: they are more experienced and thus have better growth opportunities which are identified after the appraisal or they are at the position of supervisors themselves.

Our results are in line with Zenger (2017) who states that when a performance management system is designed well, there are positive outcomes. Folloving Greiling (2005), our study provides support for the view that PMS has potential in public sector organizations and it helps to create motivated and committed workforce, as was found by Boice and Kleiner (1997).

Our study shows that the most important vale from PMS is related to employees’ perception of their role in the context of the organizational objectives. For organization PMS increases the quality of cooperation as well as improve culture and performance resultativity.

Interestingly that results in Latvian public-sector organizations show that, if the system is well designed and easy to use, the supervisors (evaluators) skills and attitudes are not significantly important if qualitative feedback is still provided. As stated by Zenger (2017), with no system in place, feedback between leaders and employees is less frequent or often non-existent. A similar conclusion was developed by Farris who proposed a structured approach to PMS including useful and actionable feedback (Farris, et al., 2011). Prowse and Prowse (2009) found a strong link between feedback and motivation. We conclude that, while feedback is important, supervisor him/herself and his/her skills are not so important for overall value of PMS.

These results have managerial implications, managers should acknowledge the importance of feedback and ensure fairness and transparency of the performance management process. They should understand that organizations will gain value from PMS only if employees will perceive it as a valuable tool helping them to see their role in a wider context and increasing their motivation.

**Conclusion**

In sum, we hope our study adds to the scarce literature of automated performance management systems by highlighting the value provided for employees and for the organization as well as identifying fairness and management feedback as core value providing components of PMS. Our findings demonstrate that implementing automated PMS, IT tools ease of use and quality are important aspects in line with goal setting and fairness. If the system is well designed, the process is fair and transparent, top-management support is ensured and middle managers are trained to provide actionable feedback, supervisors attitude and skills are not so important. Thus, individual middle manager, who are involved in the proves as evaluators cannot spoil well designed, automated performance management system.

However, the findings should be considered in light of the research limitations. An electronic survey method was used, and it might be affected by bias. The second limitation is related to geographical coverage, data was gathered only in Latvia and this limits the generalizability of the findings. Moreover, only one system (NEVIS) was assessed and the result was measured only as employee perception. Future research should include other indicators, like performance results at the team or organizational level. Further studies could be extended to other locations and include more manifest variables and different systems.

In spite of the limitations our study offers empirical evidence of the value of automated performance management systems in public sector organizations.

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**Table 1.**

**Descriptive statistics (n = 3680)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Constructs** | | **No of items** | **Cronbah`s Alpha** | **Descriptive statistics** | |
| **Variables** | **Questionnaire scales** | **Sample mean value** | **Standard deviation** |
| DV1:  Value for employee | **1.Total value for employee** | **10** | **0.93** | 2.75 | 0.80 |
| role in the context | 4 | 0.93 | 2.76 | 0.91 |
| motivation | 6 | 0.87 | 2.68 | 0.78 |
| DV2:  Value for the organization | **2.Total value for organization** | **11** | **0.95** | 2.76 | 0.79 |
| performance resultativity | 3 | 0.87 | 2.69 | 0.89 |
| quality of cooperation | 3 | 0.90 | 2.71 | 0.88 |
| contribution to organizational culture | 4 | 0.89 | 2.86 | 0.81 |
| IDV1:  IT tool | 9. IT tool`s functionality | 13 | 0.97 | 2.83 | 0.78 |
| 10. information and instructions | 4 | 0.87 | 3.08 | 0.71 |
| IDV2:  PMS components | 3. goal setting | 12 | 0.91 | 3.33 | 0.60 |
| 4. relevance of the system`s components | 16 | 0.92 | 3.20 | 0.58 |
| 5. fairness | 6 | 0.86 | 2.95 | 0.74 |
| 6. link with remuneration | 10 | 0.87 | 3.10 | 0.67 |
| IDV3: Supervisor`s factors | 7. management feedback | 11 | 0.92 | 2.99 | 0.67 |
| 8. manager`s skills and attitude | 6 | 0.95 | 3.26 | 0.81 |

**Table 2.**

**Sample characteristics included in regression analysis (n = 3680)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Job position** | **%** | **Tenure** | **%** | **Age** | **%** |
| Middle-manager | 5.7 | Less than 1 year | 5.4 | 18-27 | 8.6 |
| Line-manger | 17.2 | Between 1 and 3 years | 17.4 | 28-37 | 26.4 |
| Policy planner policy or implementer | 31.8 | Between 4 and 7 years | 14.2 | 38-47 | 24.3 |
| Support functions | 45.3 | Between 8 and 15 years | 30.5 | 48-59 | 29.6 |
|  |  | 16 years and more | 32.5 | 60 and more | 11.2 |

**Table 3.**

**Correlations among Study Variables**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Variable** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
| 1 | Value for the employee | 1.00 |  |  |  |  |  |  |  |  |
| 2 | Value for the organization | .84\*\* | 1.00 |  |  |  |  |  |  |  |
| 3 | Goal setting | .59\*\* | .62\*\* | 1.00 |  |  |  |  |  |  |
| 4 | Evaluation process | .55\*\* | .58\*\* | .69\*\* | 1.00 |  |  |  |  |  |
| 5 | Fairness | .60\*\* | .64\*\* | .61\*\* | .69\*\* | 1.00 |  |  |  |  |
| 6 | Link to remuneration system | .50\*\* | .54\*\* | .51\*\* | .55\*\* | .55\*\* | 1.00 |  |  |  |
| 7 | Feedback | .56\*\* | .55\*\* | .55\*\* | .60\*\* | .59\*\* | .50\*\* | 1.00 |  |  |
| 8 | Supervisor`s attitude | .44\*\* | .43\*\* | .48\*\* | ,.42\*\* | .52\*\* | .42\*\* | .74\*\* | 1.00 |  |
| 9 | IT system`s functionality | .63\*\* | .62\*\* | .57\*\* | .62\*\* | .60\*\* | .49\*\* | .53\*\* | .40\*\* | 1.00 |
| 10 | Information about IT tool | .32\*\* | .32\*\* | .38\*\* | .52\*\* | .39\*\* | .32\*\* | .37\*\* | .27\*\* | .53\*\* |

\*\*p<0.01

**Table 4.**

**Results of Hierarchical regression analysis**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **DV1: value for the employee** | | | | **DV2: value for the organization** | | | |
|  |  | **H1a** | **H2b** | **H3c** |  | **H1b** | **H2b** | **H2c** |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| (Constant) | 3.01\*\*\*  (0.05) | 1.25\*\*\*  (0.06) | 0.05  (0.07) | -0.04\*\*\*  (0.07) | 3.04\*\*\*  (0.05) | 1.29\*\*\*  (0.06) | -0.07  (0.07) | -0.13\*  (0.07) |
| Tenure | -0.10\*\*\*  (0.01) | -0.08\*\*\*  (0.01) | -0.07\*\*\*  (0.01) | -0.06  (0.01) | -0.09\*\*\*  (0.01) | -0.07\*\*\*  (0.01) | -0.05\*\*\*  (0.01) | -0.05\*\*\*  (0.01) |
| Policy makers | -0.12\*\*\*  (0.03) | -0.04  (0.02) | -0.02  (0.02) | -0,03  (0,02) | -0.12\*\*\*  (0.03) | -0.05\*  (0.02) | -0.03  (0.02) | -0.03  (0.02) |
| Line managers | -0.06  (0.04) | 0.01  (0.03) | -0.03  (0.03) | -0,03  (0,03) | -0.01  (0.04) | 0.06\*  (0.03) | 0.01  (0.03) | 0.01  (0.02) |
| Middle managers | -0.07  (0.06) | 0.00  (0.05) | -0.05  (0.04) | -0,06  (0,04) | 0.03  (0.06) | 0.10  (0.05) | 0.03  (0.04) | 0.03  (0.04) |
| Age 28-37 | 0.03  (0.05) | -0.02  (0.04) | 0.00  (0.04) | 0,00  (0,04) | -0.01  (0.05) | -0.06  (0.04) | -0.04  (0.04) | -0.04  (0.04) |
| Age 38-47 | 0.04  (0.06) | 0.00  (0.04) | 0.02  (0.04) | 0,01  (0,04) | 0.01  (0.06) | -0.03  (0.04) | 0.00  (0.04) | -0.01  (0.04) |
| Age 48-59 | 0.20\*\*\*  (0.06) | 0.08  (0.05) | 0.11\*\*  (0.04) | 0.09\*  (0.04) | 0.15\*\*  (0.06) | 0.03  (0.05) | 0.06  (0.04) | 0.05  (0.04) |
| Age 60 plus | 0.47\*\*\*  (0.07) | 0.26\*\*\*  (0.05) | 0.26\*\*\*  (0.05) | 0.23\*\*\*  (0.05) | 0.38\*\*\*  (0.07) | 0.17\*\*  (0.05) | 0.16\*\*\*  (0.04) | 0.14\*\*  (0.04) |
| IT tool`s functionality |  | 0.62\*\*\*  (0.02) | 0.33\*\*\*  (0.02) | 0.31\*\*\*  (0.02) |  | 0.62\*\*\*  (0.02) | 0.28\*\*\*  (0.02) | 0.27\*\*\*  (0.02) |
| Information about IT tool |  | -0.01  (0.02) | -0.06\*\*\*  (0.02) | -0.07\*\*\*  (0.02) |  | -0.01  (0.02) | -0.07\*\*\*  (0.02) | -0.08\*\*\*  (0.02) |
| Goal setting |  |  | 0.31\*\*\*  (0.02) | 0.29\*\*\*  (0.02) |  |  | 0.31\*\*\*  (0.02) | 0.04\*\*\*  (0.02) |
| Evaluation process |  |  | -0.01  (0.03) | -0.04  (0.03) |  |  | 0.00  (0.03) | -0.02  (0.03) |
| Remuneration system |  |  | 0.16\*\*\*  (0.02) | 0.14\*\*\*  (0.02) |  |  | 0.20\*\*\*  (0.02) | 0.19\*\*\*  (0.02) |
| Fairness |  |  | 0.21\*\*\*  (0.02) | 0.18\*\*\*  (0.02) |  |  | 0.26\*\*\*  (0.02) | 0.24\*\*\*  (0.02) |
| Feedback |  |  |  | 0.19\*\*\*  (0.02) |  |  |  | 0.13\*\*\*  (0.02) |
| Supervisor`s attitude |  |  |  | -0.03  (0.02) |  |  |  | -0.02  (0.02) |
| Adjusted R Square | 0.04 | 0.41 | 0.53 | 0.54 | 0.03 | 0.40 | 0.56 | 0.57 |
| R Square Change | **0.04** | **0.36** | **0.12** | **0.01** | **0.03** | **0.37** | **0.16** | **0.01** |
| F Change | 20.36\*\*\* | 1118.18\*\*\* | 238.67\*\*\* | 48.36\*\*\* | 16.13\*\*\* | 1107.28\*\*\* | 342.69\*\*\* | 24.88\*\*\* |

Standard errors in parentheses. \*p<0.05; \*\*p<0.01; \*\*\*p<0.001