Abstract
The motivation of public servants has become crucial in the shaping of ways and methods of the public sector reform. The goal of this study is to test a novel PSM (Public Service Motivation) model of the Hungarian public sector by adapting the New Public Passion research framework. The novel model tests the predictive relationship between PSM and Calling. By using an archive database of the ISSP 2015, four hypotheses were tested, and verified one of them. Results demonstrate that a PSM model could in fact be adapted to the Hungarian public sector. Comparing the public sector and private sector employees, significant difference was found between the effect of organizational commitment on work satisfaction. In the public sector employee model, Calling had direct and indirect effects on work satisfaction.

Key words: public sector reform, work satisfaction, public service motivation, organizational commitment, perceived social impact.

JEL Classification: J24, J28, J29

Introduction

UNDP’s study (2017) discriminates three major factors of motivation in public service: extrinsic motivation, intrinsic motivation and PSM (Public Service Motivation). Perry and Wise (1990), the original authors of the PSM concept, constructed the following definition that became the basis for academic inquiry in the coming decades: PSM “may be understood as an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations” (Perry and Wise 1990 pp. 368). PSM motives can be:
1. Rational: Whilst public servants behave in an altruistic way, they also want to increase their utility.
2. Norm-based: The main norm in public sphere is to serve the interest of society.
3. Affective: Public administration must provide safety to citizens based on basic human laws, thus applying the affective norm of patriotism of benevolence.

Mihalciouiu (2011) points out that the PSM concept focuses on both the specific motivation as a feature of public servants and the specific environment of public sector. As contrasted to the original concept, rooted in the 1990’s when public managers started to apply the reforms based on the New Public Management to rationalize the operation of the public sector, the new approach attempts to favor the power, the budget and reputation of the public sector. PSM, originating from Anglo-Saxon culture has spread over Europe. The “PSM is the motivational force that induces individuals to perform meaningful” (Brewer and Seleden 1998, pp. 417).

Bullock, Stritch and Rainey (2015), in their study, testing the PSM model in cross-cultural settings, describe in detail how PSM became an independent area of academic inquiry in numerous countries. Their study, analyzing a number of constructs, variables and concepts across 30 countries, concluded the following universal results:
1. PSM is the inner force of public servants to serve the society and work in organizations with strong community oriented mission.
2. Perception of social impact refers to how the workers perceive the effect of their work on other people and on society.
3. High-Income Motives refer to the attitude of the workers to maximize their financial income.
4. Organizational commitment strengthens the loyalty of workers to the organization.

It ensues from the above conclusions demonstrate that public sector workers are less motivated by financial motivators than the employees in the private sector. In most of the countries (22 countries) the public servants are more committed to their organization than private sector workers. One of the most important aspects of public servants’ work is that they can actively contribute to both the wellbeing of people and to public interest. This can be also a reward for the public workers and it complies with the pro-social behavior, motivational source of public workers. The results of this international study could be informative to the public managers because it identified the motivators of public servants, independently from national context.

In the last decade, several studies have searched for relationship between PSM and Work Satisfaction, for example Giauque, Ritz, Varone and Anderfuhrren (2012); Homberg, McCarthy and Tabvuma (2015); Cseh Papp et al., 2018; Westover and Taylor 2010). The definition of work satisfaction is diverse and depends on the authors’ research approach and objectives. According to Giauque, Ritz, Varone and Anderfuhrren (2012) or Mészáros (2018), work satisfaction can be identified as a positive mental status originating from the work situation. Work satisfaction can be a variable predicting PSM (Homberg, McCarthy and Tabvuma 2015); PSM and work satisfaction can both increase when opportunities are provided to the employees to serve the public (and public interest) as an integral part of their work. Therefore, the public organizations can provide ideal jobs to people with high levels of PSM.

The next concept in our model is Calling. As Dik and Duffy’s definition (2009) asserts, Calling is “a transcendent summons, experienced as originating beyond the self, to approach a particular life role in a manner oriented toward demonstrating or deriving a sense of purpose or meaningfulness and that holds other-
oriented values and goals as primary sources of motivation” (Dik and Duffy pp. 427). Sometimes Calling refers to sense that one is committed to his / her job, sometimes Calling refers to being talented or passionate (Horváth, 2016; 2017a; 2017b; 2017c). Thompson and Christensen (2018), when comparing PSM and Calling, managed to identify the following distinctive features:

1. Calling concentrates on individual uniqueness without analyzing whether a given employee is working in public or private sector. PSM just focuses on the public administration and the public sector.
2. Since PSM is multi-dimensional construct, Calling, as a constituent of it, cannot be called complete unless Calling itself is made of several dimensions.
3. PSM is a communal concept and it focuses on how public workers with high PSM can serve their organization, the public sector and society at large. Calling, on the other hand, concentrates on individuals’ attitudes and traits and attempts to single out differences between them.
4. While PSM is a stable individual feature, Calling is situational as it can change based on actual work conditions.
5. PSM is not specified because one can identify with commitment to public sector in numerous ways. In contrast, Calling is specified based on the individual differences of professions and competences.
6. While PSM highlights the socialization through public organizations, Calling highlights the individual differences of competences, so that an employee can realize his / her work suitability via his / her cognitive function.

In Hungary, there is a scarcity of academic inquiry on PSM: only three relevant studies have been published up to date. One of them is a theoretical study investigating the adaption opportunities of PSM in Hungary (Hollósy and Szabó 2016). The second one investigates the relationship between PSM and job satisfaction in case of Hungarian local public service (Hollósy 2018). The third one is also an empirical study (Horváth and Hollósy, is under publication).

The Goals and Hypotheses of this Study

No previous Hungarian studies have investigated the relationship between PSM, work satisfaction, perception of social impact, organizational commitment, and Calling. Therefore, the goal of this study is to unify the above mentioned variables in one PSM concept and to test it in Hungarian sample applying path analyze method. We use the model of Bullock, Stritch and Rainey (2015), barring the variable of high-income motives and adding the variable of Calling. High-income motives seemed to be redundant as they have less effect on work motivation of public servants than on work motivation of private employees. Based on the conceptual underpinnings, the following hypotheses have been developed:

1. **Hypothesis 1**: It is justified to develop a PSM model adapted to Hungarian public servants, using the method of path analysis.
2. **Hypothesis 2**: There are significant differences between public and private sector workers when comparing the indirect effects of above mentioned constructs.
3. **Hypothesis 3**: Calling exerts both indirect and direct effect on the model’s constructs in public sector workers sample.
4. **Hypothesis 4**: Calling exerts both indirect and direct effect on the model’s constructs in the private sector workers sample.
Material and Methods

The Work Orientations 2015 module of the representative database of ISSP (International Social Survey Programme) has been used as the basis of analysis, with the delimitation of current employment. Therefore, Hungarian workers currently in employment have been selected for further analysis (n=564). The distribution of the gender of respondents is (n=250) (44.3%) men and (n=314) (55.7%) women. The youngest person is 27 years old, the oldest is 75 years old. The average age of the respondents is (m= 50.42; SD=10.837). One respondent has not finished the elementary school. 19 respondents have university degree. Table 1 presents the educational level of the total employee cohort. (n=141) (n=25%) of active workers are employed in public sector.

Table 1 Educational level of the employees

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not finished the elementary school</td>
<td>1</td>
<td>.2%</td>
</tr>
<tr>
<td>Elementary school</td>
<td>47</td>
<td>8.3%</td>
</tr>
<tr>
<td>Vocational school, professional training without graduation</td>
<td>167</td>
<td>29.6%</td>
</tr>
<tr>
<td>Vocational high school with graduation</td>
<td>91</td>
<td>16.1%</td>
</tr>
<tr>
<td>High school graduation</td>
<td>113</td>
<td>20%</td>
</tr>
<tr>
<td>Professional training not accredited for higher form</td>
<td>26</td>
<td>4.6%</td>
</tr>
<tr>
<td>Professional training accredited for higher form</td>
<td>19</td>
<td>3.4%</td>
</tr>
<tr>
<td>Collage</td>
<td>81</td>
<td>14.4%</td>
</tr>
<tr>
<td>University</td>
<td>19</td>
<td>3.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>564</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: own calculations

PLS-SEM (Partial Least Squares - Structural Equation Modeling) method has been used to analyze the data. Path analysis is a series of regression analyses making it a predictive statistical method (Kovács and Bodnár 2016). Kazár (2014) distinguishes two types of the structural equation models, the first one is covariance-based structural equation model, the second one is the variance-based structural equation model. PLS-SEM is a variance-based structural equation model (Mitev and Kelemen 2017). Kovács and Bodnár (2016) mention that the correlation coefficient presents the relationships between the variables in the model. This coefficient includes the direct and indirect effects. Insignificant relationships between the variables are automatically ignored. The PLS-SEM method is specifically adapted to detect and investigate indirect effect between constructs and variables, making it a popular method in a number of disciplines (Kazár 2014). Kovács and Bodnár (2016) mention that PLS-SEM can run the factor analysis and the regression analysis in same time. PLS-SEM does not require normal distribution and it is applicable for a sample with
low number of respondents. Exogenous variables are the explanatory variables in the model. Endogenous variables can be explanatory variables and also target variables in the model. Regarding to the relationship between indicators and indirect variables we can distinguish reflective and formative models. In reflective models the indirect variable can be the reason and the effect of indicator. In formative model the indicator is the reason of indirect variable. PLS-SEM can test the reflective and formative models. PLS-SEM method can prove to be useful when theoretical concepts cannot be measured directly so the models based on them cannot be tested (Kovács 2015). PLS-SEM model includes two parts, the first one is the measurement the second one is structural. The measurement part examines the indirect variables via direct variables. In order to assess the structural validity of the model, several in-build modules have been included in the software. SRMR (Square Root Mean Square Residual) examines how theoretical concept fits to the empirical data (Mitev and Kelemen 2017). The coefficient of SRMR is between 0 and 1. The Cronbach-alfa represents the validity of convergence. AVE (Average variance extracted) tests the value of convergence. Both Cronbach-alfa’s and AVE’s coefficient can be between 0 and 1. The coefficient of Cronbach-alfa must be over .7 to accept the validity of the test. The coefficient of AVE must be over .5 to accept the validity of the test. Fornell and Larcker test is able to test the validity of discriminant. According to this test AVE must be over than the squares of correlations between the constructions.

Results of the path analysis are represented in the form of a diagram with arrows pointing from indirect variables show to the other indirect dependent variables. Arrows can point from indirect variable to direct variables, or from indirect explanatory variables to indirect target variables. Indirect variables are marked with circles and direct variables with squares.

Results and Debate

In order to distinguish between the characteristics of the employee cohorts, three models have been created, and data pertaining to them analyzed accordingly.
1. Aggregate model (Model 1)
2. Model of private sector workers (Model 2)
3. Model of public sector workers (Model 3)
Path analyses have been created for all three models, and structural validity examined, presented in Table 2. SRMR values of models score between .157 and .225.

Table 2  Convergence, discriminant validity and AVE values of three models

<table>
<thead>
<tr>
<th></th>
<th>Calling</th>
<th>Motivation</th>
<th>Calling</th>
<th>Motivation</th>
<th>Calling</th>
<th>Motivation</th>
<th>Calling</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cronbach α</td>
<td>Composite</td>
<td>Reliability</td>
<td>Cronbach α</td>
<td>Composite</td>
<td>Reliability</td>
<td>Cronbach α</td>
<td>Composite</td>
</tr>
<tr>
<td>Model 1</td>
<td>.906</td>
<td>.902</td>
<td>.929</td>
<td>.905</td>
<td>.854</td>
<td>.895</td>
<td>.888</td>
<td>.854</td>
</tr>
<tr>
<td>Model 2</td>
<td>.613</td>
<td>.572</td>
<td>.661</td>
<td>.857</td>
<td>.816</td>
<td>.512</td>
<td>.752</td>
<td>.695</td>
</tr>
<tr>
<td>Model 3</td>
<td>.713</td>
<td>.855</td>
<td>.816</td>
<td>.512</td>
<td>.752</td>
<td>.695</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Calling strongly correlates to organizational commitment. The path analysis yielded a moderately strong correlation between perception of social impact and organizational commitment. Calling collates moderately strongly to motivation. Organizational commitment correlates moderately strong to work satisfaction. Perception of social impact has the strongest R2 value that is 47% (Diagram 1). Calling correlates moderately strongly to organizational commitment in all three models. This basically can be interpreted in the following way: Calling can influence the organizational commitment independently from the sectors. In this model Calling correlates weakly to the other variables.

**Source:** own calculations
In the second path model which encompasses the private sector workers, a mediation analysis revealed that Calling has moderately weakly direct effect (.211) and moderately strongly indirect effect (0.405) on perception of social impact (Table 4). (Table 4 presents the results of the bootstrapping analysis. We demonstrate the method of bootstrapping analysis in the second part of this chapter.) Calling correlates moderately strongly ($r=.642$) to organizational commitment (Diagram 2). Calling correlates moderately strongly ($r=.403$) to motivation (Diagram 2).
In the third model relating to the cohort of public sector workers, mediation analysis revealed that Calling has moderate indirect (0.407) effect via other variables and direct (0.486) effect on work satisfaction (Table 4). Calling correlates strongly ($r=0.695$) to organizational commitment (Diagram 3). Organizational commitment also strongly correlates ($r=0.907$) to work satisfaction (Diagram 3). Organizational commitment correlates strongly ($r=0.539$) to perception of social impact (Diagram 3).

In case of private sector workers Calling has neither direct nor indirect effect on work satisfaction (Table 4), raising the question if Calling is sector-independent or not. In case of private sector workers Calling has direct and indirect effects on perception of social impact Table 4). In case of public sector workers Calling does not have direct and indirect effects on perception of social impact (Table 4). It is therefore concluded that Calling is a variable that is independent from sectors.

In the next step, significant differences between public and private sector workers in case of indirect variables were sought. PLS-MGA is the method chosen for the demonstration of the differences. Table 3 presents the results of the investigation. Results reveal that significant differences can be detected between public and private sector workers in case of the relationship between organizational commitment and work satisfaction.

Table 3 Differences between public sector workers (Model 3) and private sector workers (Model 2) applying PLS-MGA method

<table>
<thead>
<tr>
<th>Relationships between indirect variables</th>
<th>Differences of Path Coefficient</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calling -&gt; Motivation</td>
<td>0.013</td>
<td>0.539</td>
</tr>
<tr>
<td>Calling -&gt; Organizational commitment</td>
<td>0.026</td>
<td>0.386</td>
</tr>
<tr>
<td>Calling -&gt; Perception of social impact</td>
<td>0.104</td>
<td>0.133</td>
</tr>
<tr>
<td>Calling -&gt; Work satisfaction</td>
<td>0.260</td>
<td>0.989</td>
</tr>
<tr>
<td>Motivation -&gt; Perception of social impact</td>
<td>0.017</td>
<td>0.428</td>
</tr>
<tr>
<td>Organizational commitment -&gt; Perception of social impact</td>
<td>0.069</td>
<td>0.251</td>
</tr>
<tr>
<td>Organizational commitment -&gt; Work satisfaction</td>
<td>0.382</td>
<td>0.000***</td>
</tr>
<tr>
<td>Perception of social impact -&gt; Work satisfaction</td>
<td>0.070</td>
<td>0.733</td>
</tr>
</tbody>
</table>

***p<0.01, Source: own calculations

The next step involved mediation analysis revealing the underlying indirect effects between variables. The indirect effects analysis was conducted on all possible paths. Bootstrapping method was used to identify the differences between public and private sector worker cohorts in case of the indirect effects of variables. Bootstrapping analysis estimates variances, confidence intervals and other statistical attributes based on random samples extracted from an existing previous sample (Füstös 2009). Table 4 presents the result of the bootstrapping analysis.
Table 4  The indirect effects of Model 2 and model 3

<table>
<thead>
<tr>
<th>Test of couple of factors</th>
<th>Modell 2</th>
<th>Modell 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original sample</td>
<td>T statistics</td>
</tr>
<tr>
<td>Calling -&gt; Perception of social impact</td>
<td>.211</td>
<td>4,565***</td>
</tr>
<tr>
<td>Calling -&gt; Work satisfaction</td>
<td>.182</td>
<td>5,603***</td>
</tr>
<tr>
<td>Motivation -&gt; Work satisfaction</td>
<td>.028</td>
<td>.743</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>.043</td>
<td>.906</td>
</tr>
<tr>
<td>Mediation (R2)</td>
<td>.211 / .405</td>
<td>52 % partial mediation</td>
</tr>
</tbody>
</table>

Considering the indirect effects/total effects ratio and bootstrapping results, two distinct types of mediations were detected, one manifest in Modell 2 and the other in Modell 3. In case of the private sector model, it has been revealed that the construct of Calling has an indirect impact on the construct of the perception of social impact via the partial mediation (52%) by the construct of motivation. On the other hand, a different type of mediation has been detected in the case of the public sector model, where the construct of Calling effects directly on work satisfaction via total mediation (83%) of organizational commitment. 83% is perceived as an especially high score in the social sciences, therefore the reasons must be explored (Füstös 2009).

There are three distinct reasons that can be seized for explaining the total mediation of work satisfaction by organizational commitment in the case of the public sector employee cohort:

1. It is possible that conceptually, Calling is a dimension of work satisfaction, raising the question if these variables can be distinguished or not.
2. Calling may be the basis of motivation in public sector. This presumption is supported by our result showing that Calling can impact work satisfaction in both ways: directly and indirectly. By perceiving their work as their Calling, public sector workers can significantly raise their aptitude to attain high levels of work satisfaction.
3. In the case of the private sector cohort, the Calling - work satisfaction path is affected by the partial mediation effects (52%) of on so it’s effect is less strong than in case of public sector. 52 % indicates that Calling is an important element of work satisfaction because it can increase and decrease the work satisfaction in private sector.
Conclusion

While earlier international studies have not discussed the relationship between PSM and Calling, academic inquiry and results show that Calling is in fact part of motivation (Dik and Duffy 2009). There is a gap in studies investigating the PSM concept and framework in Hungary. The novelty of this study is the integration of the construct of Calling into an overall model and testing it on a Hungarian sample. It is also a novelty that the research design distinguishes between the private sector and the public sector employee cohort, in order to demonstrate significant differences between the two models, the overarching objective being the segmentation of the sectors and pointing out differences in how the workforce could be motivated. The results could inform both practitioners and policy-makers of the public sector searching for novel solutions and innovations to design and deliver an efficient and efficacious public sector reform.

The main question defining the research design was whether or not path analyses can be applied to test PSM model on a Hungarian sample. Our results suggest that PSM concept can be adapted to Hungarian sample which verify out first hypothesis. The second hypothesis is partly verified because in case of indirect variables we found only difference in only one variable between the two sectors. The correlation between organizational commitment and work satisfaction is stronger in case of public sector workers than in case of private sector workers. The correlation between above mentioned variables is over .90 which is especially significant. This is in line with the findings of Hollósy (2018): public servants with high organizational commitment are also satisfied with their work. In case of public sector workers our model verifies 60 % of coefficient determination of work satisfaction. Public servants with life goals, high motivation, perception the social impact of their work, committed to their organization will be satisfied with their work.

We partly verified hypothesis 3 because Calling has direct and indirect effect just on work satisfaction. Moreover, Calling correlates strongly to the other variables in case of public sector workers. We partly verified hypothesis 4: Calling has direct and indirect effect just on the perception of social impact - Calling correlates to the other variables in case of private sector workers. There are no differences between public and private sector workers in case of the indirect effect of Calling and other indirect variables. This partly proves the results of previous studies (Thompson and Christensen 2018) suggesting that Calling is not dependent on sectorial circumstances. Contrarily to previous studies, our results demonstrate that Calling’s direct and indirect effect on work satisfaction and on perception of social impact differs between public and private sector workers. Bullock, Stritch and Rainey (2015) mention that public sector workers’ perception of their social impact is part of their motivation. Our results suggest that perception of their social impact is important to the private sector workers. It is highly recommended to initiate further studies in order to get a deeper insight and understanding of the matter.

Finally, a few notes on the generational aspect and implications of the findings: private sector has a tendency to push employees into the public sector who the private does not employ (Hazafi 2015). The members of Y and Z generations can change jobs and spheres easy if the other sphere provides them more advantageous conditions (Szakács 2013). The application of our PSM model can partly help to solve these problems as we identified factors explaining part of the work satisfaction in Hungarian public sector. These are: organizational commitment, perception of social impact, motivation and Calling. If Hungarian public sector can find ways of improving
the above mentioned factors (such as employment, organizational climate, promotion, career guidance, etc.) then work satisfaction will likely increase, entailing the engagement and commitment of the employees, committed to stay in their organization for extended periods of time.

We believe it could be useful to implement a PSM concept into Hungarian public administration based on the model of this study and to design test conditions such as changes in organizational commitment. For example, in the course of the candidate selection and screening, it would be useful to test the candidates’ PSM, Calling and their perception of the potential social impact of their work. In this way public administration can screen candidates who are not only motivated by the special work environment and conditions of public administration, but whose intentions are the augmented social impact of their work already at the onset. These perceptions can later be further developed by specialized on-the-job training programs.

Bibliography


Correspondence address:
Zsuzsanna Horváth, PhD, associate professor, Faculty of Commerce and Catering and Tourism, Budapest Business School, Bedő street 9, 1112, Budapest Hungary, email: zsentilia1@gmail.com

Gábor Hollósy-Vadász, PhD student, Doctoral School of Public Administration Sciences, Faculty of Science of Public Governance and Administration, National University of Public Service, Rend street, 11, 1028, Budapest Hungary, email: hvadaszg@gmail.com