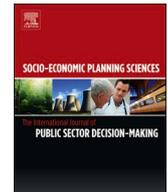




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Invited paper

Public service motivation- individual performance relationship: Does user orientation matter?

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ABSTRACT

Many studies find positive associations between Public Service Motivation (PSM) and individual performance, but we know little about potential mediators and moderators.

In this study, we test the mediating role of User Orientation (UO) - the motivation to benefit individual recipients of public services - and the moderating role of individual and work-related characteristics by collecting data from 618 teachers and 156 school principals working in all grades of state schools in southern Italy. After applying structural equation modeling and group comparisons, results show that individuals with a strong orientation to do good for others and for society (PSM) are also better oriented towards helping specific public service users, the students in our case. In turn, the desire to benefit students and satisfy their needs leads individuals to enhance their self-reported performance at work. Eventually, the implications of our findings and possible areas of future research are discussed.

1. Introduction

Public Service Motivation (PSM) has attracted considerable interest among public management scholars as it is expected to improve individual performance (IP) in public organizations [1,2]. Perry and Wise [1] defined PSM as “an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations”. At the same time, and as an integration to the above definition, PSM has also been seen as “an individual’s orientation to delivering services to people with the purpose of doing good for others and society” [3].

However, it is unclear whether PSM has a direct or indirect positive influence on the level of IP [4–7] and whether the PSM-IP relationship is always valid [2].

Researchers, therefore, call for a more complete relationship model that includes mediators and moderators such as individual, contextual and job-related factors [2], because the PSM-IP relationship is more complex than originally expected [8].

Some studies have already investigated the contextual factors in the PSM-IP analysis, in terms of mediation [4,7] and moderation effects [9–11], but they have provided mixed results and most of them do not appropriately consider context (country, type of service, service logic, user logic, time, etc.) within which motivation can vary [2]. Each

institutional context with its relative jobs has specific features that may favour appropriate attitudes in PSM-endowed employees [12–14], and consequently may also matter for the relationship between PSM and IP. What these appropriate attitudes are depends on the public organization’s user and service logic, i.e. on two fundamental components of an institutional context.

Context specificity is therefore at the background of this study, we mean schools, where PSM has been shown to be particularly relevant [11,15,16]. In terms of user logic, schools belong to the “people-changing organizations”, by Hasenfeld [16] because the main aim is to change the beneficiaries of the public service with whom employees have direct contact. Students, in fact, are supposed to be changed in terms of knowledge and skill accumulation, and also in terms of their social and psychological growth.

In terms of service logic (the user’s feeling of the desirability of a service), schools provide services wanted by their clients, consequently called “positive” service [14]. As a result of these two institutional logics (user and service), teachers more easily gain information about their prosocial impact, both while improving students’ learning and performance, and while receiving feedback and gratitude from users [14, 17–19]. Moreover, perceiving a prosocial impact, an individual will be more willing to help users [19]. Against this background, User Orientation (UO) as a motivation to help and satisfy the needs of users [20],

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reveals to be an appropriate attitude in PSM endowed teachers [12,13].

So far, knowledge is lacking about the possible role played by the interaction between PSM and another type of motivation (UO) in improving IP, and our study aims to fill this gap in literature. Our idea of including UO as a mediator in the PSM-IP relationship derives from some existing studies where PSM seems to be linked, as an alleged antecedent, to UO [10,21], and UO in turn is an antecedent of employee performance [22,23]. Therefore, the possible mediating effect of UO on the PSM-IP relationship deserves more thorough investigation.

To reduce the risk of spuriousness, we will also test for the moderating role of individual and contextual factors (age, gender, role, grade of school, and tenure), as existing studies indicate them to be of the utmost important [10,15].

This study, therefore, aims to answer three main questions: Are PSM dimensions positively related to individual performance? Does UO matter in this relationship? and finally, Do individual and contextual factors strengthen or weaken the effect of PSM on individual performance?

To answer these questions, we gathered (via a questionnaire) data from 618 teachers and 156 school principals working in all grades of state schools, within the Campania Region, in southern Italy. We used a self-reported IP measure, providing insight into the relationship between PSM and IP from an employee perspective.

From a methodological point of view, we applied structural equation modeling to test the mediation theoretical model, followed by group comparison analyses to test the impact of some moderators on the model.

The article proceeds as follows. First, we offer an overview of the theoretical framework, from which three hypotheses are formulated. Then, we present the methods used, followed by the results. In the final section, the results are discussed.

2. Theoretical framework

This section outlines the theoretical framework: (1) for expected positive relationships between PSM and IP, also when UO comes into play as a mediator variable; and (2) for expected relationships depending on individual and job-related factors (gender, age, role, specific work context, and tenure). A set of hypotheses based upon this framework is then developed.

2.1. PSM and individual performance

Significant relationships have been found between PSM and work effort, satisfaction, organizational citizenship behaviour, and organizational performance, but the PSM-IP relationship is one of the most studied in literature [2,24,25]. Scholars have tried to verify the PSM-IP relationship in several ways. Some have identified a positive direct link between PSM and IP ratings, using subjective and self-reported performance measures [6,11].

The subjective performance indicators vary also between self-reported IP [7], internal efficiency [25], and self-reported performance ratings by supervisors (Naff and Crum 1999). Self-reported measures are subject to social desirability and common source bias, which can potentially generate many false positives [26]. The literature has started to handle these problems by including, for instance, administrative performance data [15].

Subjective self-reported measurements are to be considered as personal expression of the collected data and therefore often challenged. Objective individual performance data would then be preferable, though difficult to measure [15]. This difficulty is possibly an important explanation of why individual performance has been typically measured through self-reporting. Most researchers agree that both subjective and objective measures have their weaknesses, but also their values [27]. One positive aspect is the fact that employees, as internal stakeholders, are a valuable source of information because they “might have a better

all-around understanding of the challenges facing their organization” [28]. When we come to consider objective IP measurement, we find that some studies have demonstrated once again that PSM enhances IP. For instance, Bellè [9] found that nurses’ PSM was positively related to the number of surgical kits they assembled. Andersen et al. [15] found that teachers’ PSM was positively related to student exam grades.

Other scholars studying the link between PSM and IP demonstrated that contextual factors mediate or moderate the relationship between PSM and self-reported IP, showing that this link is dependent upon the context in which the work is carried out [11].

In fact, some of them identified a positive indirect (mediated) link between PSM and IP. They highlighted that PSM positively influences the self-reported IP of public employees by increasing their organizational commitment, overall work satisfaction, and the congruence between individual values and perceived organizational values, called P-O Fit [4,7].

Others identified the moderating role of tenure, contact with beneficiaries, employee work autonomy, and job societal impact potential in the association between PSM and IP [9,10,29,30].

If PSM does affect the IP of public employees, as Perry and Wise [1] and others have argued, why did scholars highlight the low consistency of results in the most frequently analysed variable relationships? A possible explanation is that some studies relied on simplistic conceptual models that omitted important variables [2], like UO, which could be seen as an appropriate variable in a schooling context.

2.2. PSM and user orientation

In our study, PSM and UO are seen as distinct concepts to be put into relation. However, we must remind that whether PSM is an intrinsic motivation or a prosocial motivation is still unclear. In the attempt to clean up the concept, some scholars argue that PSM is different from intrinsic and prosocial motivation. Intrinsic motivation is a motivation to benefit others who may be identified and unidentified individuals, whereas prosocial motivation is intended as benefitting only known individuals [31]. PSM, though, is a motivation towards individuals in a broader and indistinct sense, that includes only unidentified subjects. This said, “User Orientation” is considered a prosocial motivation to do good for others in a narrow sense, where “others” are considered to be specific identified individuals, or groups of individuals, and are public service beneficiaries [20]. In an educational organization, UO refers to doing good for the individual student [32].

The UO concept is rooted in sales personnel and marketing services literature as “customer orientation”, while in business literature, “customer orientation” is interpreted as “concern for others” [33]. Many scholars point to the significant role of “customer orientation” in educational organizations as public schools are facing turbulent, complex and constantly changing environments, due to consumerism, privatisation, and inter-school competition for the provision of schooling [34]. Since the 1980s, the international public service reform process inspired by New Public Management theories has had the objective of ensuring a well-managed workforce that can deliver public services efficiently and effectively. This has led to the introduction of private sector or Market Orientation practices such as performance related pay, targets, *customer satisfaction*, and performance indicators within the public sector [35]. *Customer orientation* is a component of Market Orientation and linked to customer satisfaction [34]. UO, which is then to be compared to the concepts of customer orientation, could play an important role in public service motivated teachers. Brewer, Selden, and Facer II [36] provided a vivid image of employees performing a public service as people helping people, and not as principals and agents chasing customers, and consequently contributed to changing the term “customer orientation” into “user orientation”. The term “user”, in fact, better brings to mind the recipients of a service.

Many scholars argue that PSM and UO motivations tap into the same conceptual space [37], even including “user orientation” as a PSM

dimension [20]. Others agree on the conceptual distinction and independence of UO from PSM [31,32]. In particular, Andersen and Kjeldsen [38] found that both PSM and UO tend to be positively associated to satisfaction. It is also possible for the two sorts of motivation, i.e. PSM and UO, to interact and influence performance [39].

Now, assuming PSM and UO are theoretically distinct, we will here, then, explain why we generally expect PSM to enhance UO in the provision of a public service.

The reason is that the institutional logic provides guidelines for appropriate attitudes and behaviours [12,13], and may therefore matter for the PSM - IP relationship. For instance, in people-changing organizations (schools and hospitals above all), employee PSM is mostly related to performance measured as “responsiveness toward users” [11], which is close to the concept of UO.

This reason is reinforced by the theory of “other-orientation” [40], which maintains that “other-oriented” employees (as public service motivated ones) more easily expend significant effort to help customers and/or co-workers, so in practice become “user oriented” employees.

Two studies also provide insight into how PSM might be related to UO.

First, Andersen and Serritzlew [21] studied registered service data of Danish physiotherapists. Although they found no differences in the number of services carried out, having a high PSM did affect positively the proportion of disabled patients treated, suggesting that PSM contributes to attending to the well-being of specific individuals, and we may interpret this proportion as an indicator of UO.

Secondly, Jensen and Vestergaard [10] studied the relationship between PSM and the number of home visits carried out by Danish general medical practitioners (GPs), which, in our opinion, can also be seen as an indicator of UO. They concluded that the PSM of GPs increases their home visits in order to favour specific patients. C and SS are the PSM dimensions that are particularly involved in their study, because of the time-consuming and poorly remunerated characteristics of their home visits. Although highly public service motivated individuals are expected to prioritize doing good for society, and highly user oriented individuals are expected to prioritize doing good for the individual user, in the case of the aforementioned doctors, their motivation to shape the well-being of society practically means to do good for the individual patients. We think that the above considerations about the link between PSM and UO is to be more scientifically analysed.

2.3. User orientation and individual performance

In this study, we expect UO to be positively associated with the performance of public service providers, by having put UO and customer orientation on the same level. Previous research proves that customer orientation is positively associated with public and private employee performance [22,23,33] and work attitudes such as Job Satisfaction, Commitment, and Organizational Citizenship Behaviours [23,38,41]. Furthermore, the positive influence of customer orientation/UO on these job responses is stronger for service workers who spend more time in direct contact with customers, than it is for workers who spend less time with them [41].

Grant [39] shows the relevance of including a prosocial motivation (UO as above defined), when studying the link between PSM and IP. He demonstrated the cruciality of the role of physical contact with service beneficiaries for employee motivation to make a pro-social difference through helping others.

Our study aims at giving a clear explanation of the PSM-UO-IP relationship by testing some factors, both individual and work related, as moderators. Characteristics such as gender, age, role, and type of organization are among the most frequently cited variables that have been consistently related to individual PSM levels, even if related studies provided mixed results [2]. On the one hand, public employees with high levels of PSM are more likely to be older, female, and occupy higher hierarchical positions than employees with lower levels of PSM [2]. On

the other hand, PSM weakens with job tenure in the public sector [42]. Finally, some PSM scholars have taken the type of organization, such as the school grade, into account [15].

As regards individual and contextual factors, we considered teacher age, job tenure, role (teachers, special needs teachers, school principals), and the specific school grade within which teachers worked (primary, lower and upper secondary schools). We started by considering that the role of special needs teachers who work primarily with children, who require special instructional services, could make a difference and strengthen both the PSM-UO and UO-IP relationships. Performing different roles (teachers and school principals) in the same organization could also make a difference, just like could performing the same role in a different school grade. In fact, principals could be more inclined to focus on UO as a group and not on individual users, as teachers may be inclined to do. Moreover, high-school teachers, who have more specialized, theoretical knowledge, and firmer norms compared to primary school teachers, could be less inclined to be user oriented than their colleagues in other school grades [37].

2.4. Study hypotheses

PSM makes individuals try harder to do good for others and society. They perform well because their PSM corresponds to the presence of a public service identity. They provide services that they perceive as meaningful for the community [7].

Following an institutional framework, we argue that the different logics in organizations may matter for the disposition of employees. The introduction of UO as a mediating variable in the PSM-IP relationship explains how this relationship unfolds. The presence of PSM leads to higher levels of UO for employees working in a public sector environment, thus providing higher levels of IP, because they put into practice their public values by meeting their service beneficiaries' needs [3]. This may more easily happen in a context where doing good for society overlaps with doing good for individual users [11,15,29].

Institutional logics may also determine which of the four PSM dimensions are emphasized and also in which context they operate [14]. Finally, we have good reason to believe that individual and contextual factors matter. Therefore, the following three hypotheses can be proposed:

Hp1. *PSM dimensions have a positive effect on Individual Performance*

Hp2. *User Orientation mediates the relationship between Public Service Motivation and Individual Performance*

Hp3. *Individual and contextual factors moderate the relationship between Public Service Motivation and Individual Performance*

The hypotheses put forward in this article come together in the following mediation conceptual model (see Fig. 1).

To shed light on the potential mediation of UO in the PSM - IP relationship, we investigated a specific public service environment (state schools). In the case of teachers, high PSM means that there is a person-organization fit and that they satisfy their public service motives (affective, rational and normative) [1,15]. Teachers are likely to make sacrifices to deliver services without tangible rewards, making efforts that go beyond their normal duties during and after the working day, when they prepare lessons, correct homework, and meet parents and students, all outside their established working hours [15]. Teachers' affective motives are based on their identification with the students, and emphasize their commitment to, or concern for, the needs of specific students and groups. It is this identification that creates a willingness to do good for students. The rational motives of teachers come into play when they participate in decision-making processes, for instance when they are involved in resolutions aimed at distributing resources in order to contribute (indirectly) to the wellbeing of students and, therefore, to society. Eventually, norm-based motivation concerns compliance with social norms regarding appropriate behaviour and contributions to

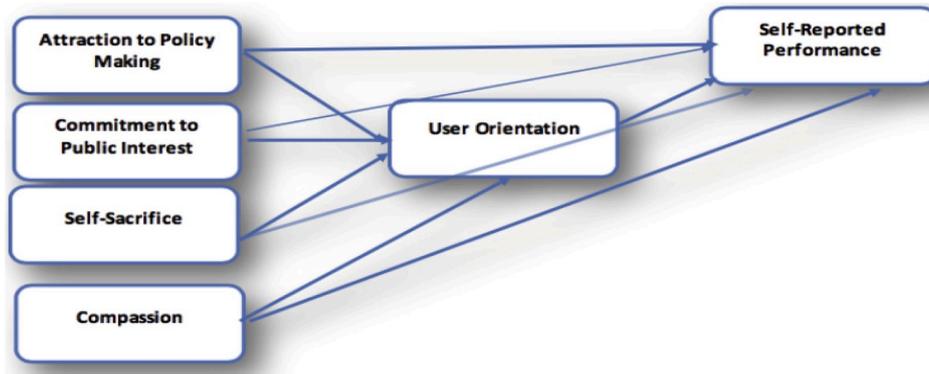


Fig. 1. Theoretical mediation model of the PSM-IP relationship.

society [15]. Thanks to their PSM, teachers satisfy their desire to make a social difference and improve society by helping their students. For teachers, students represent the tangible aspect of society, the face itself of society, the closest “others” through whom it is possible to channel teachers’ desire to benefit society. They value the outcome of helping students, as providing a contribution to the amelioration and well-being of society [3].

3. Data and method

The survey took place from September to December 2015 through a hand delivered structured questionnaire. The convenience sample consisted of 774 participants and included more females than males. Given that we used a convenience sample, we acknowledge possible response biases might limit the generalizability of the current findings. Also, Perry [8] in his study made extensive efforts to reduce potential method bias when constructing items measuring different PSM dimensions [43]. For this reason, we adopted some remedies to reduce the risk of method bias.

For instance, all participants were assured anonymity in completing the survey; the researchers accurately explained to respondents why the questions were important and the necessity of accurate answers and separated motivation and performance in the survey [43]. Furthermore, before testing hypotheses, in order to verify the statistical detection of common method bias (CMB) for the dataset, we carried out the Harman single factor [26,44], whose value is equal to 41,3%, which does not exceed the commonly accepted threshold of 50% [26].

The sample of schools consisted of 6 high schools, and 3 Comprehensive Schools including 9 nursery schools, 8 elementary schools, 5 middle schools.

The median age was 55 years, ranking from 51 to 60 years and respondents had been in service in school (job tenure) for just over 20 years at the time of the survey. More precisely, it consisted of 618 public teachers working in all public school grades, 96 of whom were special needs teachers, while 156 were public school principals. The predominance of females and their age (aged 50 or older) reflects the profile of the European teacher published by Eurostat (Report Eurostat 2015¹). Table 1 shows the share of females both in Italy and in survey group. Schools in the Campania Region of Italy were selected with a view to balancing contexts regarding location (suburban or city centre) and social level.

In order to deliver and fulfil completion of the questionnaires, we met the teachers of the surveyed schools just before the start of mandatory staff meetings, while questionnaires for school principals from other schools located in the Campania region were delivered in a

Table 1
Share of females.

	Total (all education levels)
Italy	78,3%
Survey Group	84%

single session before the start of an obligatory training course. This was a strategic decision designed to obtain a good rate of response (about 95%).

To test the hypotheses from an explorative view point, we adopted the PLS-Path Modeling (PLS-PM) algorithm [45], giving preference to PLS (Component based method) over SEM (Covariance based method) as many scholars have done previously, because of the publication bias present in many fields for ‘positive’ results” [46]. In addition, we used bootstrapping techniques that can more accurately show the significance of mediation processes [47]. Later we supported the moderation analysis of the data by means of a group comparison, in order to reduce the risk of spuriousness [48].

3.1. Partial least Square-Path Modeling (PLS-PM)

PLS Path Modeling is a statistical method developed for Analysis Structural Models with latent (LVs) and manifest variables (MVs) [45]. A PLS-PM is made up of two elements: the structural model (also called the inner model), which describes the relationships between the LVs (1) and the measurement model (also called the outer model), which describes the relationships between the manifest variables (MVs) and their respective latent variables (LVs) (2):

$$\xi_{(m,1)} = \mathbf{B}_{(m,m)} \cdot \xi_{(m,1)} + \boldsymbol{\tau}_{(m,1)} \tag{1}$$

$$\mathbf{x}_{(p,1)} = \boldsymbol{\Lambda}_{(p,m)} \cdot \xi_{(m,1)} + \boldsymbol{\delta}_{(p,1)} \tag{2}$$

In the Inner Model, ξ is the vector of the m latent variables and \mathbf{B} is the path coefficients matrix, with zeros on its diagonal representing the causal effect among the latent variables. The Outer Model, includes the \mathbf{x} vector of the p manifest variables and the coefficient matrices $\boldsymbol{\Lambda}$ of the relationships between the latent constructs and the observed variables. Two ways to establish these links can be distinguished: a reflective or formative relationship. In the reflective relationship the manifest variables are regarded to be reflections of their latent constructs: a variation of the construct yields a variation in the measures. While in the formative relationship the manifest variables are regarded as causes of their latent constructs: a variation of the measures yields a variation in the construct. The vectors $\boldsymbol{\tau}$ and $\boldsymbol{\delta}$ are the structural and the measurement error vectors, respectively. For each model (inner and outer), the PLS algorithm [45,49,50] considers two double approximations for the latent variables ξ_j (with $j = 1 \dots, m$):

¹ <https://ec.europa.eu/eurostat/documents/2995521/7017572/302102015-BP-EN.pdf/5a7b5406-4a0d-445b-8fa3-3558a8495020>.

- (1) **external estimation (or outside approximation)** y_j , obtained as the product between the block of manifest variables X_j and the so called *outer weights* w_j . The outer weights w_j represent the estimations of measurement model coefficients (Λ).
- (2) **internal estimation (or inside approximation)** z_j , obtained as product between the external estimation y_j and the so called *inner weights* e_{ji} . The inner weights e_{ji} , are defined through the correlations between y_j and the connected y_i , with $i \neq j$.

The outer weights are calculated by considering how the manifest variables are related to their latent constructs: by mode A (reflective), or by mode B (formative). Mode A implies simple linear regressions while mode B implies multiple linear regressions. The PLS algorithm starts by initial arbitrary weights. The parameters estimation is performed until convergence is achieved, by iteratively computing:

- external estimation, $y_j = X_j w_j$;
- internal estimation, $z_j = \sum_{i \neq j} e_{ji} y_i$;
- outer weights estimation.

Once convergence of the weights is obtained and LVs are estimated, the path coefficients can be computed via ordinary least squares (OLS).

To estimate the model parameters, we have used the module R-package.

3.2. Group comparison in PLS-PM

Group comparison in PLS-PM is a less restrictive mode to test structural equation models between groups. When we evaluate the meaning of the differences of the paths of a particular model for two or more sets of the data, a *t-test* based on the standard errors is got by means of a re-sampling procedure like bootstrap.² Problems may increase if the hypothesis of a normal population or of a similar group sample size is not met. Another method, i. e. a permutation or randomization procedure [51,52], in which a subset of all the possible data permutations of the data between the sample groups is builded. The procedure for a permutation test described by Edgington [53] and Good [54], and later illustrated by Chin and Dibbern [55], is carried out in the following way:

1. A test statistic is calculated for data.
2. The data are divided or re-arranged repeatedly in a way consistent with the random assignment procedure. All observations are combined into a single large sample before being rearranged, when we have two or more samples and we obtain the test statistic for each of the resulting data permutations;
3. The proportion of the permutations of the data in the set of reference having the values of the test statistic \geq (or for some statistic tests, \leq) to the value of the results got experimentally is the *p. value*, that is the minimal level of significance to which it is possible to reject the null hypothesis.

² The bootstrap method:

- 1) Calculates the difference in the parameter for two groups (i.e. the difference between path coefficients);
- 2) Subdivides the data into groups and runs bootstrap re-samplings for each group. Path coefficients are calculated in each re-sampling and the standard error estimated are treated in a parametric sense via t-tests. For two groups:

$$t = \frac{|\beta_{ij}^{G1} - \beta_{ij}^{G2}|}{\sqrt{\frac{(n_1-1)^2}{n_1+n_2-2} S.E.^2_{G1} + \frac{(n_2-1)^2}{n_1+n_2-2} S.E.^2_{G2} \cdot \frac{1}{n_1} + \frac{1}{n_2}}}$$

where n_1 and n_2 are the sizes of the two groups. Based on the use of S.E. estimates in a parametric sense, this would follow a t- distribution with $(n_1 + n_2 - 2)$ degrees of freedom.

The null and alternative hypothesis to be verified to compare the PLS parameter (path coefficients) estimations between two independent groups G1 (n_1, n_2, \dots, n_l) and G2 (n_1, n_2, \dots, n_k) are:

- H_0 : path coefficients are not significantly different;
- H_1 : path coefficients are significantly different.

4. Measures

In this section, we describe the variables and measurements that were used in our study. As proposed by Perry and Vandenberg [56] we do not see PSM as a global construct, but we test the PSM individual dimensions because this method could help us to better interpret the specific relationships studied. In this analysis, the core independent variable PSM is measured with the most used [2] four dimensional scale consisting of 24 items. These items refer to the dimensions of “attraction to policy making” (APM), “commitment to public interest” (CPI), “compassion” (C), and “self-sacrifice” (SS), defined as being the core dimensions of PSM [8]. As suggested by Perry [8], we have positively reworded the originally negative items [8], as negatively worded items appear to confuse respondents and, for instance, are not appropriate to assess APM [57]. For instance, we have reworded the item: “Politics is a dirty word” in “Politics is a noble word”. The dependent variable is a self-reported individual performance measure. Responses were measured using a 5-point Likert-type scale, ranging from 1 (totally agree) to 5 (totally disagree). To assure equivalence of the measures in the Italian and the English versions, all the scales used in this study were translated into Italian and then translated back into English. Finally, some moderators (gender, job tenure, role, and supervisory position) were included in the analysis as these may be related to performance [4].

5. Analysis and results

The correlation matrix provides evidence of the value of the mediation tests (see Appendix). The three PSM dimensions and UO are significantly correlated with performance (p.value < 0.05), except for the correlation between IP4 and SS3 items (p.value > 0.05). With PSM also being significantly correlated with the potential mediator UO, all variables in the model are correlated and we cannot reject the hypothesis of mediation. The overall fit of the model was evaluated by a combination of indexes recommended by Hair et al. [58]. Before testing hypotheses, we have verified the unidimensionality of the MVs blocks by means of Dillon-Goldstein’s rho [59], with values above the expected minimum level of 0.70 for all the observed MVs blocks. In order to assess the validity, we consider: the convergent validity and the discriminant validity. The *convergent validity* can be evaluated by the Average Variance Extracted (AVE ξ_j). AVE ξ_j measures the level of variance captured by a construct versus the level due to measurement error, values above 0.7 are considered very good, whereas, the level of 0.5 is acceptable. The Average Variance Extracted (AVE) for construct ξ_j is defined as follows:

$$AVE\xi_j = \frac{\sum_p \lambda_{pj}^2}{(\sum_p \lambda_{pj}^2) + \theta_{pj}}$$

where: λ_{pj} is loadings associated with the generic indicator of construct ξ_j and θ_{pj} is the error variance of the *p*-th indicator of construct ξ_j . Further, all Average Variance Extracted (AVE) values are above 0.50, providing support for the measures’ convergent validity.

The *discriminant validity* was well established, too [45,60] (see Table 2), by comparing the square root of each AVE in the diagonal with the correlation coefficients (off-diagonal) for each construct in the relevant rows and columns. In particular, the levels of square root of the AVE for each construct should be greater than the correlation involving the constructs ϕ_{ij} :

Table 2
Fornell-Larcker criterion analysis for checking discriminant validity.

	Attraction Policy Making	Commitment Public Interest	Self -Sacrifice	Compassion	User Orientation	Individual Performance
Attraction Policy Making	0,792					
Commitment Public Interest	0,260	0,715				
Self-Sacrifice	0,203	0,550	0,704			
Compassion	0,190	0,411	0,592	0,664		
User Orientation	0,050	0,318	0,338	0,388	0,834	
Individual Performance	0,035	0,314	0,344	0,314	0,460	0,794

$$\sqrt{AVE\xi_j} \geq \varphi_{ij} \quad \forall i \neq j$$

Otherwise, the levels of the AVE for each construct should be greater than the squared correlation involving the constructs.

$$AVE\xi_j \geq \varphi_{ij}^2 \quad \forall i \neq j$$

Overall, discriminant validity can be accepted for this measurement model and supports the discriminant validity between the constructs.

Henseler et al. [61] used simulation studies in order to prove that lack of discriminant validity is well identified by the heterotrait-monotrait (HTMT) ratio. The HTMT ratio is the mean of the heterotrait-heteromethod correlations, i.e. the correlations of indicators across constructs, assessing different phenomena, as compared to the mean of the monotrait-heteromethod correlations, i.e. the correlations of indicators within the same construct. In a well-fitting model [61,62], heterotrait correlations should be less than monotrait correlations, meaning that the HTMT ratio should be below 1 [61]. The HTMT of constructs ξ_i and ξ_j , having respectively P_i and P_j , indicators, can be formulated as:

$$HTMT_{ij} = \frac{1}{P_i P_j} \sum_{g=1}^{P_i} \sum_{h=1}^{P_j} \varphi_{ig,jh} \div \left(\frac{2}{P_i(P_i - 1)} \sum_{g=1}^{P_i-1} \sum_{h=g+1}^{P_i} \varphi_{ig,jh} \cdot \frac{2}{P_j(P_j - 1)} \sum_{g=1}^{P_j-1} \sum_{h=g+1}^{P_j} \varphi_{jg,jh} \right)^{1/2}$$

Average heterotrait–
heteromethod
Geometric mean of the average monotrait – heteromethod correlation of
construct ξ_i and the average monotrait – heteromethod
correlation of construct ξ_j

The discriminant validity assessment on the basis of HTMT is satisfied, $HTMT < 0,85$, that is the threshold value (Table 3).

All the loadings are positive and significant, except for manifest variables APM1, and APM3. They are greater than the value recommended 0.50 [45]. Details of the PSM items, variables used in this analysis, loadings, sources, as well as reliabilities (Cronbach’s Alpha [63] and Dillon-Goldstein’s rho [59]) are provided in Table 4.

Table 3
Heterotrait-monotrait ratio (HTMT) results.

	Attraction Policy Making	Commitment Public Interest	Self- Sacrifice	Compassion	User Orientation	Individual Performance
Attraction Policy Making						
Commitment Public Interest	0,344					
Self -Sacrifice	0,269	0,682				
Compassion	0,266	0,529	0,709			
User Orientation	0,071	0,395	0,398	0,377		
Individual Performance	0,081	0,393	0,383	0,451	0,547	

Fig. 2 provides a graphic representation of the final model including the significant effects of PSM on self-reported IP, after Bootstrap validation, and proportion of explained variance (R^2 -values). In particular, two of the four PSM dimensions, CPI and SS, have a significant direct effect on IP and on UO. It means that UO is a partial mediator. Only APM has no significance effect. This means that hypothesis 1 has been accepted. Later, in order to compute the strength mediation or magnitudes, we calculate the variance accounted for (VAF) [64], that measures the size of the indirect effect in relation to the total. In our case, the UO partially mediates the relationship between CPI and IP. Moreover, results reveal that the mediator variable, UO, is correlated to three PSM dimensions (C, CPI, SS) and also influences IP positively and significantly. In particular C has no direct link with IP. Its influence on IP happens only through UO. In this case, UO is a full mediator. Hypothesis 2 has therefore been accepted. The link existing between C and UO (0,2743) is stronger than that between SS and UO (0,095) and CPI and UO (0,17). UO, as a motivation to help individuals, is expected to be positively correlated to C, due to the fact that is grounded in a desire and willingness to help others. R^2 values are moderate (0,2639 and 0,1895) and significant [45].

The third hypothesis this study investigated centred on the moderating effects of individual (age) and work-related characteristics (role, tenure, school grade) of teachers in PSM-IP relationship. In order to analyse these effects we have carried out several group comparisons in PLS-PM.

Age and tenure had no significant effects, as was found in other studies. In addition, these analyses found no significant moderating effect when considering the role of teachers compared to the role of special

Table 4
Measures, Loading Coefficients and reliability. Items' source in brackets.

Measures	Loadings
Measures of PSM (Perry 1966)	
• Attraction Policy Making ($\alpha = 0,705; \rho = 0,836$)	
APM1- Politic is a dirty word.*	0,817
APM2- The give and take of public making doesn't appeal to me.*	0,727**
APM3- I don't care much for politicians.*	0,830
• Commitment Public Interest ($\alpha = 0,757; \rho = 0,838$)	
CPI1- It is hard for me get intensely interested in what going on in my community.*	0,717**
CPI2 -I unselfishly contribute to my community.	0,763**
CPI3- Meaningful public service is very important to me.	0,788**
CPI4- I would prefer seeing public officials do what is best for whole community even if harmed my interest.	0,719**
CPI5- I consider public service my civic duty.	0,572**
• Self-Sacrifice ($\alpha = 0,854; \rho = 0,887$)	
SS1- Making a difference in society means more to me than personal achievement.	0,576**
SS2- I believe in putting duty before self.	0,696**
SS3- Doing well financially is definitely more important to me than doing good deeds*.	0,631**
SS4- Much of what I do is for a cause bigger than myself.	0,717**
SS5- Serving citizen would give me good feeling even if in no one paid me for it.	0,732**
SS6- I feel people should give back to society more than they get from it.	0,686**
SS7- I am one of those rare people who risk personal loss to help someone else.	0,768**
SS8- I am prepared to make enormous sacrifices for the good society.	0,799**
Measures of Compassion ($\alpha = 0,819; \rho = 0,864$)	
C1- I am rarely moved by the plight of the underprivileged.*	0,655**
C2- Most social programs are too vital to do without.	0,632**
C3- It is difficult for me to contain my feelings when I see people in distress.	0,704**
C4- To me, patriotism includes seeing to the welfare of other.	0,730**
C5- I seldom think about the welfare of people whom I don't know personally.*	0,692**
C6- I am often reminded by dailt events about how dependent we are on one another.	0,686**
C7- I have little compassion for people in need who are unwilling to take the first step to help themselves.*	0,652**
C8-There are few public programs that I whole heartedly support.*	0,546**
Measures of User Orientation ($\alpha = 0,854; \rho = 0,902$) (Andersen et al., 2013)	
UO1- The individual student is more important than formal rules.	0,763**
UO2- It gives me energy to know that I helped each student learn.	0,868**
UO3- It is important to make the student the central focus.	0,856**
UO4- Student satisfaction is very important for whether I feel that I have performed my job tasks well.	0,838**
Measures of Individual Performance ($\alpha = 0,798; \rho = 0,871$) (Vandenebee 2009)	
IP- In my opinion, I contribute to the success of the organization.	0,829**
IP2- I think I am performing well within this organization.	0,861**
IP3- I think I am a good employee.	0,886**
IP4- On average, I work harder than my colleagues.	0,562**

*Item positively reworded. ** Bootstrap validation significant at 5%.

needs teachers, and the distinct role of a teacher as compared to a school principal. The role, therefore, does not influence the PSM-IP relationship. On the one hand, this result confirms that if an employee has only specialized knowledge, as special need teachers or principal, it is not sufficient to provide influence on PSM, and thus on performance [21]. A possibly explanation could be that special needs teachers apply their specialized knowledge to their special needs students but also support all classroom students. On the other, it does not confirm that managers have significantly higher levels of PSM than do non-managers [65]. We propose two explanations. The explanation for this is the same basic educational and experiential background of school principals and teachers.

The second explanation is organizational socialization. School principals and teachers could have same levels of PSM and UO because they are socialized through their years of public sector experience to highly value public service work [65,66] which leads to the same goal: the improvement of their students. Principals, however, pursue these goals because of the market pressures and evaluation results they need to achieve.

Consequently, the only factor which influences the investigated relationship is school grade, see Table 5, thus, the third hypothesis has been partially accepted. In particular, Table 5 and Fig. 3 show that both the CPI-UO and CPI-IP associations are stronger for the Upper Secondary School teachers (0,4171 and 0,2510, respectively) compared to that for Nursery/Primary/Lower secondary School teachers (0,0156 and 0,0268, respectively). A possible explanation could be that within the same profession (e.g., teachers) there are different professional norms, and understanding of, for example "the public interest" may also vary. This may influence the results [37].

This results do not support previous findings, which highlighted that upper secondary school teachers who have a higher level of professionalism should have a lower level of compassion and UO than their colleagues, as professionals are supposed to respond analytically (rather than emotionally) to people in need [37].

Another explanation could be that CPI represents a sense of

Table 5
Group Comparison: G1 (Teachers of Nursery/Primary/Lower secondary School) vs G2 (Teachers of Upper Secondary School).

	G1	G2	Diff. Abs	P-value
APM->UO	-0,0779	-0,0067	0,0712	0,4257
APM->IP	0,108	-0,0535	0,1615	0,2277
CPI->UO	0,0156	0,4171	0,4015	0,0099**
CPI->IP	0,0268	0,2510	0,2243	0,0396**
SS->UO	0,133	-0,1499	0,2828	0,0099**
SS->IP	0,1364	0,1273	0,0091	0,9802
C->UO	0,2606	0,3912	0,1306	0,1881
C->IP	0,0766	-0,0298	0,1063	0,4257
UO->IP	0,3353	0,3634	0,0281	0,7723

**significant at 5%.

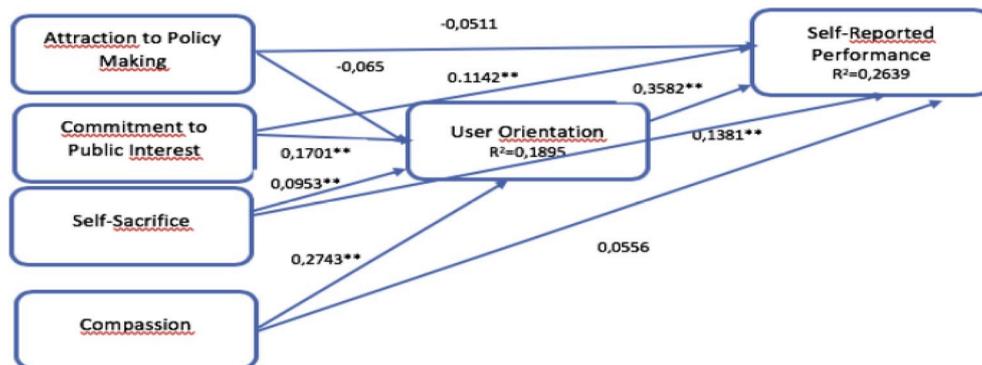


Fig. 2. Path diagram results.**significant 5%.

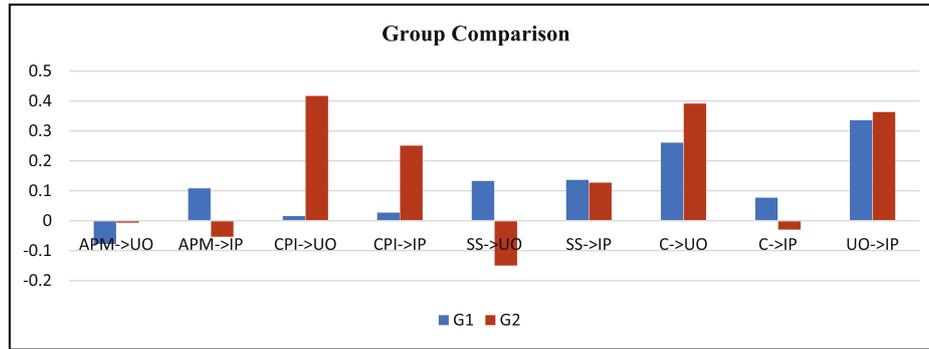


Fig. 3. Group comparison: G1 (Teachers of Nursery/Primary/Lower secondary School) vs G2 (Teachers of Upper Secondary School).

obligation to society, and in upper secondary schools, teachers are aware that their students are close to entering society and a work environment, and feel more impelled to contribute to the success of their students in society more than those teachers working in other school grades. Moreover, the study highlighted some surprising results; on the one hand, the greater the sense of self-sacrifice, the more likely teachers are to help students in a nursery, primary or middle school, while on the other hand SS becomes negatively related to UO in secondary schools - a phenomenon that is difficult to explain. This condition would mean that the lower the sense of sacrifice teachers have, the more likely they are willing to help students. It may be that they are guided by as yet unidentified motives that contrast and diminish SS when helping their students.

6. Discussion and conclusion

Despite all efforts, we must admit to some limitations pertaining to sample and data. This analysis relies on a convenience sample, a type of sample frequently used in public administration studies, studies on PSM and on schools [67,68], and the data are cross-sectional, and self-reported, due the lack of specific IP data and of limited resources. A subjective self-reported performance measure has the advantage of encompassing a broader concept of performance and of being comparable across jobs [7]. However, it has the disadvantage, often overstated, of individuals inflating reports relative to their own performance [27].

We acknowledge possible response biases might limit the generalizability and the validity of the current findings [26,43,69]. For this reason, we chose an adequate statistical method to apply and adopted some remedies during the data collection. Additionally, exploring the effect of mediator and moderator variables in statistical models can help mitigate the possibility of spuriousness [48]. Although the representativeness of teachers can be questioned (due to non-random selection), this is not considered an important problem in the present context, as we are interested in testing correlations rather than obtaining a full picture of the Italian population [38].

Our findings should be interpreted with care when applied in other settings, as they could depend on the specific institutional contexts and organizations [11].

Regardless of these limitations, the results of our study contribute to PSM literature in at least three ways. Firstly, they support the conclusion that PSM is an important driver in order to improve employee self-reported performance consistently with the existing literature [4,5,7]. By testing the individual PSM dimensions, the article facilitates a better interpretation of the specific PSM-IP relationship [56] providing a clearer understanding of which motives are involved in the relationship within a specific context. PSM dimensions are significantly related to self-reported IP (Hp1), except for APM. A possible explanation might be that the APM dimension has consistently proven difficult to interpret and validate, and therefore requires greater care in communicating its conceptual and operational meaning [2].

Secondly, the article draws attention to the importance of individual and contextual factors within the PSM-IP relationship. This is in line with the branch of the PSM literature that recognizes the crucial role of contextual factors in the studies on PSM-IP relationship [4,29,30]. This is a step forward in the maturity of the PSM research field [2].

In the third and most important place, we have set the UO mediator in the PSM-IP relationship, for the first time, consistently with the recognition of scholars that this relationship is more complex than originally expected [8]. It is an appropriate attitude determined by the institutional context of schools [12]. In the case of the full mediation of UO, C improves IP only through the improvement of UO. This could be due to the fact that the C dimension is an affective public service motive, characterised by a desire and willingness to help and care for others. It does fit in a professional public sector environment where there are long individual interpersonal relationships, and concern for others is very strong. However, this does not result in favouritism or lack of neutrality. In fact, in the case of partial mediation, teachers are guided by UO, but also by CPI and SS when enhancing their performance. CPI is a compliance with social norms, while SS sustains the motives included in PSM and together are far from the idea of favouritism or lack of neutrality either. The varying mediating patterns, however, should be investigated more thoroughly. As we cannot come to more conclusive findings, suffice it to say that the under scrutiny mediator has a significant effect on the PSM-IP relationship.

Our interesting findings suggest to managers that there are alternative—more promising—ways of indirectly stimulating positive effects of PSM. For this reason, our results have several implications for scholars and for public service organization managers.

It is necessary to shed light on the ways employees are sure to direct their PSM towards UO that is supportive of the organizational goals (i.e. changing user). One way could be the creation of an environment supporting the public values of employees [42]. This would avoid employee PSM and UO being crowded out by the perception of red tape, for instance. In fact, Maynard-Mooney and Musheno [70] observed, in some cases, that "... the workers saw the rules and supervisors as obstacles to doing what was right and fair for their clients".

Another way to cultivate the combination of PSM with UO could be educational and training programmes. These programmes could represent an opportunity for employees to identify a common interpretation of what public interest is [71] grounded on the assumption that future societal growth and welfare coincide with the development of individual students [15,29]. Importantly, to facilitate the process of PSM towards UO, public managers have to diminish, and where possible eliminate, potential conflictual elements in student (or parent)-teacher intrapersonal relationships [69] when implementing practices to effectively manage public service providers' performance.

Moreover, our study highlights that managers must also be aware of the differences among the motives in PSM that energise employees when performing the same job but in different organizations, for instance in different school grades.

Again, our findings could help scholars to carry out further research on PSM. Most importantly, they suggest that it is fruitful to discuss different types of pro-social motivation among public employees. In our case, PSM and UO, which are both elements of the self, could interact and enhance each other in a people changing organization, within which there is daily, extended occurrence contact with beneficiaries. Where the contact is of a shorter duration, down to one-shot contact, as it occurs in universities or hospitals, the risk is that PSM and UO could lead to different behavioural consequences [32].

The use of longitudinal data, combined with other diversified measures of performance, should yield more robust evidence of the findings of this and other performance-related studies. An interesting extension of this study, therefore, would be to use the model in other organizations and countries, in order to gradually develop an encompassing theory of PSM and performance.

We would eventually like to stress that subjective performance measurement was used not only because no other sources were available, but also because we have a strong conviction that teachers themselves could really give a more precise assessment of their efforts (where related to unmotivated students for instance), that no objective evaluation could offer [28]. For teachers, students' academic skills objectively

measured at the school grade could be relevant, but this would also be a consequence of efforts from other school employees and factors outside the school such as student background. Moreover, we are strongly convinced that teachers who showed a high level of sacrifice and compassion when responding to the questionnaire did not do so because of the perceived social desirability of their answers, but because they are actually that way inclined. Many scholars recognize this aspect in the teachers' job [15,21]. Therefore, in organizational research where data collection options are limited, one should be aware of the possible dangers, but at the same time not overestimate the effect of common method bias, as it may inflate but not substantially alter significant relationships [72].

Now we are strongly convinced then the answer to the our three initial questions (Are PSM and individual performance positively related, Does UO matter in this relationship, Do individual and contextual factors strengthen or weaken the effect of PSM on performance?) is positive, though further study is still required.

Declaration of competing interest

The authors declare that they have no conflicts of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.seps.2020.100818>.

Appendix. Correlation matrix of variables included in the analysis and descriptive statistics

	Mean	Standard Deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			
1	3.666	1.222	APM1	1																																	
2	3.211	1.043	APM2	0,39	1																																
3	4.344	1.139	APM3	0,50	0,44	1																															
4	3.482	0.760	CPI1	0,25	0,11	0,24	1																														
5	3.953	0.733	CPI2	0,22	0,05	0,16	0,58	1																													
6	3.832	0.665	CPI3	0,25	0,06	0,14	0,44	0,54	1																												
7	3.874	0.768	CPI4	0,21	0,04	0,09	0,35	0,39	0,46	1																											
8	4.064	0.844	CPI5	0,11	0,08	0,12	0,22	0,23	0,28	0,36	1																										
9	2.357	0.901	SS1	0,10	0,09	0,10	0,31	0,34	0,28	0,27	0,20	1																									
10	1.870	0.716	SS2	0,07	-0,01	0,05	0,28	0,34	0,35	0,30	0,24	0,35	1																								
11	2.382	1.027	SS3	0,20	0,08	0,13	0,24	0,31	0,25	0,30	0,12	0,33	0,38	1																							
12	2.131	0.799	SS4	0,17	0,06	0,10	0,30	0,35	0,27	0,24	0,19	0,36	0,46	0,45	1																						
13	2.480	0.949	SS5	0,18	0,13	0,16	0,27	0,28	0,23	0,30	0,26	0,32	0,36	0,45	0,44	1																					
14	2.390	0.922	SS6	0,17	0,11	0,09	0,22	0,18	0,21	0,28	0,26	0,33	0,34	0,37	0,41	0,56	1																				
15	2.326	0.882	SS7	0,16	0,08	0,10	0,31	0,35	0,28	0,32	0,27	0,35	0,41	0,38	0,46	0,50	0,46	1																			
16	2.540	0.389	SS8	0,17	0,12	0,16	0,29	0,31	0,31	0,31	0,30	0,40	0,44	0,40	0,44	0,56	0,52	0,64	1																		
17	2.077	0.718	C1	0,15	0,05	0,10	0,19	0,17	0,18	0,14	0,19	0,24	0,28	0,28	0,34	0,33	0,25	0,38	0,36	1																	
18	2.361	0.775	C2	0,22	0,10	0,18	0,24	0,23	0,26	0,22	0,23	0,25	0,24	0,21	0,34	0,30	0,25	0,32	0,34	0,45	1																
19	2.011	0.716	C3	0,03	0,00	0,00	0,10	0,14	0,16	0,21	0,30	0,18	0,26	0,23	0,27	0,28	0,20	0,34	0,30	0,46	0,30	1															
20	2.299	0.828	C4	0,16	0,11	0,08	0,18	0,18	0,24	0,21	0,21	0,24	0,27	0,26	0,33	0,30	0,29	0,33	0,33	0,33	0,41	0,43	1														
21	2.403	0.801	C5	0,12	0,06	0,10	0,21	0,20	0,18	0,23	0,17	0,25	0,23	0,22	0,28	0,34	0,28	0,39	0,40	0,39	0,34	0,39	0,49	1													
22	2.051	0.722	C6	0,15	0,09	0,11	0,26	0,19	0,23	0,19	0,20	0,24	0,24	0,22	0,31	0,26	0,22	0,28	0,27	0,32	0,35	0,32	0,44	0,44	1												
23	2.064	0.854	C7	0,11	0,06	0,05	0,18	0,13	0,21	0,18	0,24	0,21	0,27	0,20	0,32	0,29	0,27	0,31	0,30	0,32	0,28	0,41	0,37	0,32	0,40	1											
24	2.731	0.876	C8	0,16	0,15	0,22	0,26	0,19	0,18	0,18	0,14	0,23	0,17	0,17	0,27	0,29	0,26	0,29	0,35	0,27	0,42	0,23	0,32	0,36	0,31	0,28	1										
25	1.763	0.738	UO1	-0,02	-0,01	-0,03	0,16	0,18	0,15	0,13	0,13	0,15	0,21	0,16	0,18	0,20	0,11	0,24	0,22	0,21	0,19	0,26	0,25	0,18	0,26	0,20	0,13	1									
26	1.519	0.565	UO2	0,07	0,02	0,03	0,19	0,21	0,28	0,23	0,18	0,14	0,28	0,18	0,22	0,20	0,16	0,26	0,23	0,20	0,14	0,29	0,23	0,17	0,26	0,19	0,13	0,57	1								
27	1.616	0.668	UO3	0,04	0,03	0,04	0,14	0,14	0,21	0,17	0,21	0,12	0,26	0,15	0,18	0,18	0,15	0,26	0,23	0,19	0,16	0,33	0,25	0,14	0,21	0,27	0,11	0,49	0,70	1							
28	1.550	0.672	UO4	0,13	0,04	0,05	0,20	0,21	0,26	0,23	0,16	0,13	0,22	0,17	0,20	0,18	0,14	0,24	0,23	0,22	0,21	0,26	0,28	0,20	0,24	0,20	0,15	0,53	0,63	0,64	1						
29	1.855	0.670	IP1	0,02	-0,01	0,04	0,22	0,27	0,28	0,24	0,15	0,20	0,30	0,15	0,27	0,18	0,20	0,27	0,31	0,14	0,18	0,24	0,22	0,21	0,20	0,18	0,20	0,31	0,38	0,36	0,33	1					
30	1.843	0.595	IP2	-0,03	0,05	0,05	0,16	0,09	0,16	0,15	0,21	0,10	0,25	0,10	0,18	0,19	0,18	0,18	0,18	0,14	0,09	0,20	0,18	0,13	0,20	0,19	0,09	0,27	0,38	0,38	0,28	0,55	1				
31	1.834	0.612	IP3	-0,02	0,06	0,04	0,19	0,16	0,20	0,18	0,23	0,13	0,24	0,12	0,21	0,16	0,18	0,21	0,23	0,17	0,14	0,19	0,19	0,17	0,20	0,22	0,14	0,27	0,36	0,35	0,32	0,61	0,78	1			
32	2.607	1.00	IP4	0,02	0,02	0,05	0,11	0,12	0,11	0,14	0,09	0,13	0,21	0,05	0,16	0,10	0,10	0,19	0,17	0,12	0,11	0,11	0,12	0,12	0,10	0,14	0,10	0,18	0,19	0,21	0,19	0,35	0,34	0,35	1		

Correlations of 0.08 and over are significant at level $p < .05$.

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