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EDITORIAL

Multiple team membership: current state of affairs and directions for future research □

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Introduction

Organizations are operating in environments that are highly dynamic and are faced with the challenge to adapt such that they maintain and even further increase their levels of performance and innovativeness. As a form of adaptation, many organizations changed the way in which they organize their work around teams. Nowadays we see more and more that employees are part of multiple teams (instead of single teams) at the same time and need to contribute to various tasks simultaneously. Reports are indicating that 65-95% of knowledge workers belong to more than one team at the same time (O’Leary, Mortensen & Woolley, 2011). This phenomena of being part of more than one team simultaneously has been defined as multiple-team membership (O’Leary et al. 2011). Other scholars such as Margolis (2019) have defined the concept in a broader way such as employees having membership interdependencies across teams.

Despite the fact that multiple team membership is widely used as a form of structuring work in organizations, empirical research on the topic has only recently started to emerge. The seminal theoretical work of O’Leary et al., (2011) has placed the concept on the research agendas of both Organization Behavior and Project Management fields. The review conducted by Margolis (2019) identified 44 research articles connected to the topic of multiple-team membership. The

authors identified various antecedents, outcomes and experiences connected to the multiple team membership context. In terms of outcomes most research focused on productivity, learning, effectiveness and connections across teams. Oftentimes the idea of non-linear relations is being discussed given that being part of too many teams at the same time and doing too many (different) tasks simultaneously might interfere with effectiveness and learning. In terms of antecedents, research is less rich and has mainly looked at characteristics of an employee, ranking within organization and, status within teams (Cummings & Haas, 2012). Finally, in terms of experiences, concepts such as team membership identification and empowering leadership have been examined (Rapp & Mathieu, 2019; Chen et al., 2019).

Research agenda in multiple-team membership

To be noted that in the past multiple team membership was seen as a nuisance, that one needs to control for, in order to research single teams. Research conducted so far in the multiple-team membership field is promising and acknowledges that the concept needs to be studied as a self-standing concept in the Organization Behavior and Project Management fields. Although research in the area is growing and knowledge continues to

accumulate, there are still many research questions that have remained unanswered. What is currently missing in the multiple-team membership field of research and what are good practices to study it? These are two questions that will be addressed in the next sub-sections.

Multiple-team membership and leadership

It is surprising to observe that we do not know much with respect to the topic of leadership in the multiple-team membership context. One exception is the study of Chen et al. (2019) where they examine the role of empowering leadership. In three different studies they identify that team leaders' empowering leadership influences in a positive way the employee's psychological empowerment and this leads to an increase in proactive behaviors. Next to empowering leadership, other existing forms of leadership might also be relevant to study in this context.

One type of leadership that might be particularly relevant in the context of multiple-team membership is the boundary spanning leader. Boundary spanning behaviors are extremely relevant especially in situations in which there is a high level of interdependence among teams (Joshi, Pandey, & Han, 2009). When an organization is using a multiple-team membership structure and there are average to high interdependencies among these teams then a coordination mechanism needs to be in place in order to facilitate performance of these teams.

A leader displaying boundary spanning behaviors can facilitate information transfer and learning across teams and smoothen the coordination across teams. This can further have an impact on individual level outcomes (such as satisfaction with various memberships, level of stress, learning), as well as team level outcomes (such as cohesion, creativity or effectiveness). Suggestions of research questions here are:

- New forms of organizing (such as multiple-team membership) might require new forms of leadership; are traditional forms of leadership (such

as transactional, transformational) still relevant in these contexts? And if so, in what ways?

- Which forms of leadership are the most suitable in order to maintain the performance and well-being of individuals and teams operating in a multiple-team membership setting?
- What is the role of the boundary spanning leader in a multiple-team membership setting? Does task interdependence (across teams) play a role here?

Multiple-team membership and time structuring

One interesting aspect connected with the concept of multiple team membership is time structuring. When employees are part of one team at a time, they are able to focus on the tasks that need to be performed in this team. However, when they are part of multiple teams at the same time they need to be equipped with a time management scheme that allows them to divide their time across various teams and manage the number of switches across teams in an effective way. Switches for examples have been associated with attentional (and working memory) costs (Altmann & Gray, 2008). After a task shift, cognitive mappings belonging to a previous task are still active and interfere with the task at hand, producing time delays and errors (Allport, Styles & Hsieh, 1994).

Main research questions that emerge here are:

- What is a good allocation of time across teams in order to enhance performance and learning, at individual, team and organizational level?
- What are antecedents of time structuring in a multiple-team membership setting: what is the role of leadership here?
- Is there a managerial system or a technological system that can facilitate the management of time at an individual, organizational and team level?

Multiple team-membership and the idea of transfer

To be noted that the phenomenon of multiple-team membership involves working with different levels of analysis. Individuals are nested within multiple teams and teams are embedded in one or more organizations. Such nested structures allow for information and resources flow across levels that can benefit individuals, teams and the whole organization. It would be definitively relevant to investigate in this setting how knowledge and information is transferred from one setting to another and what are the factors that facilitate an effective transfer. A few interesting research questions would be:

- Do individuals benefit in terms of learning from the various teams they are part of? Does team variety matter here such that the higher the variety of teams (in terms of knowledge, tasks to be performed) an employee is part of, the higher the benefits?
- Can we transpose the concept of multiple-team membership at higher levels of analysis, such as multiple-organization membership? What would be the similarities and the differences between the two concepts?

Multiple-team membership and methodology

Finally, it is important to acknowledge a few good methodological practices when studying the phenomenon of multiple-team membership.

- Multiple team membership is already a context that implies some levels of complexity, requiring oftentimes multi-level analysis; for this reason, it is advisable to keep the design and the models simple in order to be able to identify robust results; more complexity does not necessarily mean better quality of results;
- Use of designs that allow for causal inferences; it is essential to identify causal relations between variables in

order to establish findings in a particular research field; the experimental design is a good candidate here;

- Avoid self-reports measures when it comes to variables that can be measured in more objective ways, for example performance; self-reports are inaccurate, prone to biases and hence lead to inaccurate conclusions and accumulation of knowledge;
- Studying multiple-team membership in an experimental fashion can be facilitated by the use of technology; finding adequate research platforms that facilitate the study of the phenomenon in an accurate manner is recommended.

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RESEARCH ARTICLE

The do and don'ts of supervisor behavior. Supervisor personality as a predictor for subordinate job insecurity and citizenship behaviors

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Abstract

Supervisor behavior can be easily interpreted in a positive or negative key; therefore, subordinate perceptions regarding their supervisor behavior can be biased by numerous personal variables. In the present study, we collected data from 20 supervisors and 402 subordinates, and we investigated the relationships between these two perspectives. The supervisors completed two popular self-reported personality scales (i.e., a Big Five scale and a questionnaire that assessed psychopathic tendencies), while their subordinates responded to scales that assessed their level of job insecurity and their self-reported organizational citizenship behaviors. Our multilevel analyses indicated significant relationships between subordinate variables (i.e., job insecurity, organizational citizenship behaviors) and their manager agreeableness or their manager primary psychopathy. In addition, multilevel structural equation models confirmed that subordinate job insecurity partially mediated the relationship between supervisor primary psychopathy and subordinate citizenship behaviors. These findings confirmed the theoretical assumptions of the social learning theory, which anticipated the relationships between supervisor behaviors and employee behaviors.

Keywords

supervisor personality, Big Five, psychopathy, job insecurity, organizational citizenship behavior.

Having a management position has its advantages and disadvantages. On the one hand, the managers have the possibility to improve how employees interact with each other and to lead their subordinates towards the achievement of higher standards (De Hoogh, Den Hartog, & Koopman, 2005). These positive interpersonal influences were usually described using terms such as

transformational leadership (Bass & Avolio, 1990) or transformative leadership (Shields, 2010). On the other hand, the fact that managers must influence others' behavior to reach team goals or personal goals could easily be interpreted in a negative way. Research studies on the "dark side of leadership" suggested that employees who attribute psychopathic characteristics to their

supervisors are less satisfied with their job and reported increased work-family conflict (Mathieu, Neumann, Hare, & Babiak, 2014). Regardless of its positive or negative nature, existing evidence suggested that supervisor behavior is related to the subordinate attitudes and behaviors.

When analyzing supervisor behavior, numerous research studies focused on the relationship between the supervisor personality and subordinate attitudes and behavioral intentions. These studies reported that positive subordinate attitudes (e.g., high job satisfaction or high affective commitment) are associated with high levels of supervisor agreeableness, emotional stability, extraversion, and low levels of conscientiousness (Smith & Canger, 2004). In a similar vein, Mathisen, Einarsen, and Mykletun (2011) concluded that employee reports of supervisor bullying behaviors are usually attributed to low conscientious, emotionally unstable supervisors. However, these relationships were not always confirmed. For example, Camps, Stouten, and Euwema (2016) reported only weak relations between supervisor personality factors and the employee reports of abusive supervision. This is important because the supervisor personality could be a factor of the subordinate attitudes and behaviors that is difficult to change and can be addressed mainly through selection practices.

In the present research, we aim to provide evidence regarding the relationship between supervisor personality and employee workplace behaviors using an ecological approach. Traditionally, researchers asked employees to rate the behavior of their supervisors, and these ratings were aggregated to the management level (i.e., each supervisor had a single score, usually represented by the averaged ratings provided by one's own subordinates). This approach has some limitations because: i) this type of self-reported data is subject to common-method bias (Podsakoff, MacKenzie, Lee, & Posakoff, 2003) and because ii) evaluations provided by peers are weakly correlated with self-evaluations (Harris & Schaubroeck, 1988). Therefore, using employee self-reported data could lead to an overestimation of the

relationships between supervisor behavior and employee outcomes (e.g., satisfaction, performance). In the present study, we collected responses from employees and their supervisors, and we assembled information from both sources. We used two well-established frameworks for describing behavior (i.e., the Big Five model and Levenson's model of psychopathy), and we investigated how these variables are related to the employee job-related perceptions (i.e., job insecurity) and the employee self-reported behaviors (i.e., organizational citizenship behaviors).

Organizational citizenship behavior and job insecurity

Organizational citizenship behavior is a form of extra-role performance that received increased attention in the past 20 years (Eatough, Chang, Miloslavic, & Johnson, 2011). Employees who display this type of behavior are involved in activities beyond their role (e.g., helping colleagues, providing support and solutions for problems outside their job-related activities) and can improve the overall performance of the company they work for (Eatough et al., 2011). Antecedents of the organizational citizenship behaviors include individual differences between employees (e.g., employee personality - Ilies, Fulmer, Spitzmuller, & Johnson, 2009) and also employee perceptions and attitudes of the workplace such as job satisfaction (Ilies et al., 2009) or job insecurity (Shoss, 2017).

Sverke, Hellgren, and Naswall (2002) defined job insecurity as "the subjectively perceived likelihood of involuntary job loss" (p. 243) and delineated two types of consequences: stress-related consequences (e.g., poor employee well-being, low levels of job satisfaction) and performance-related consequences (e.g., poor in-role and extra-role performance, turnover intentions). In this vein, Shoss (2017) argued that job insecurity might act as a job preservation motivation that makes employees more productive and more concerned with their task performance and their citizenship behaviors. Consequently, we formulated our first hypothesis as follows:

H1: Employees who feel insecure regarding their job will report low levels of organizational citizenship behaviors.

The role of supervisor personality

As mentioned in the opening paragraphs, supervisor constant behaviors are likely to have an influence on employee well-being and behaviors. An explanation for this influence is described by Bandura's social learning theory, which stated that humans could learn simply by observing other successful behaviors (Bandura, 1969). From this perspective, subordinates observe their supervisor behaviors (e.g., whether the supervisor establishes positive interpersonal relationships) and assume that similar actions will be rewarded by their manager. If this assumption is met (i.e., the manager observes and rewards the behavior), this will reinforce the subordinates' expectations and will increase the likelihood of repeating the rewarded behaviors.

The study of manager behaviors involves the completion of specific self-reported behavioral scales (e.g., inventories of leadership styles), while other research studies use personality measures to assess the interpersonal differences between managers. In a study that used the Big Five model to characterize managers, Smith and Canger (2003) expected that subordinate positive attitudes would be associated with manager personality factors that describe good interpersonal skills (i.e., high agreeableness, high extraversion, and emotional stability). Their results suggested that manager self-reported extraversion was negatively associated with subordinate turnover intention, while manager agreeableness and emotional stability were positively associated with subordinate satisfaction with supervision. Mathisen and his colleagues (2011) reported that manager poor emotional stability was associated with reports of abusive leadership. Similarly, Walumbwa and Schaubroeck (2009) argued that managers with low emotional stability could be perceived as having unpredictable emotional reactions, therefore their subordinates could feel unsafe regarding the quality of their collaboration with these managers. Furthermore, the positive interpersonal style of agreeable

managers could be associated with the establishment of a safe climate among the subordinates (Walumbwa & Schaubroeck, 2009). Based on these results, we expected to find similar associations regarding the relationships between manager personality and job insecurity, and we formulated our hypothesis as follows.

H2a: Supervisor emotional stability and agreeableness will be negatively associated with subordinate job insecurity.

Using the rationale of the social learning theory, it is reasonable to expect that having a highly agreeable supervisor could encourage the subordinates to manifest prosocial attitudes and behaviors. Therefore, we expected to find a relationship between supervisor agreeableness and subordinate citizenship behaviors.

H3a: Supervisor agreeableness will be positively associated with their subordinate organizational citizenship behaviors.

In management studies, the ideas that managers have "dark personalities" traits that help them in their career movement are not new. Beliefs regarding the narcissistic, Machiavellian, or psychopathic nature of leaders are now popular among the general population. However, research studies suggested that individuals with psychopathic traits are perceived in the most negative way (Rauthmann, 2011). Therefore, in the present research, we focused only on the psychopathic trait. Regarding psychopathy, psychologists generally agreed upon the existence of two major forms: primary psychopathy (i.e., antisocial, manipulative, selfish, and remorseless behavior) and secondary psychopathy (i.e., engagement in antisocial behavior as a result of intense emotional reactions) (Levenson, Kiehl, & Fitzpatrick, 1995).

Although previous studies reported that manager psychopathic traits are positively associated with passive leadership and with less individual consideration regarding their own subordinates (Westerlaken & Woods, 2013), we have limited information regarding the relationships between this supervisor trait

and subordinate behaviors. Interestingly, although previous studies focused on how ethical leadership can have positive consequences on employee behaviors (Brown, Trevino, & Harrison, 2005), the social learning mechanisms of negative leadership seem under-researched. Because vicarious learning mechanisms are not limited to positive behaviors (e.g., agreeable or ethical behaviors), the daily interactions with a supervisor that scores high in psychopathic traits could be associated with less positive subordinate attitudes and behaviors. Based on a systematic literature review, Davis and Rothstein (2006) concluded that employees who perceive their managers as having poor integrity would also report negative job perceptions and attitudes. Therefore, we formulated our final hypotheses as follows:

H2b: Supervisor psychopathic traits will be negatively associated with their subordinate job insecurity.

H3b: Supervisor psychopathic traits will be negatively associated with their subordinate organizational citizenship behaviors.

Given the hypotheses described above, we also investigated whether the relationship between the personality of managers and the

subordinate behaviors is mediated by subordinate job insecurity. On the one hand, previous evidence suggested that agreeable and emotionally stable managers create a safe climate for their subordinates, who can perceive the managerial positive interaction style as a model for the interactions between the team members. Therefore, positive interactions with the manager will make subordinates feel secured and will encourage them to behave in a civic manner. On the other hand, it is a generally accepted fact that a climate of security at work also enhances the citizenship behaviors. Therefore, it is possible that the relationship between supervisor personality and citizenship behaviors will be stronger if the subordinates also develop a job security. Therefore, we advanced our final hypothesis as follows:

H4: Job insecurity will partially mediate the relationship between supervisor personality and subordinate organizational citizenship behavior.

To conclude, the present study aims to investigate the relationships between supervisor personality, subordinate perceptions regarding their job, and subordinates self-reported workplace behaviors. The hypotheses of the study are presented in Figure 1.

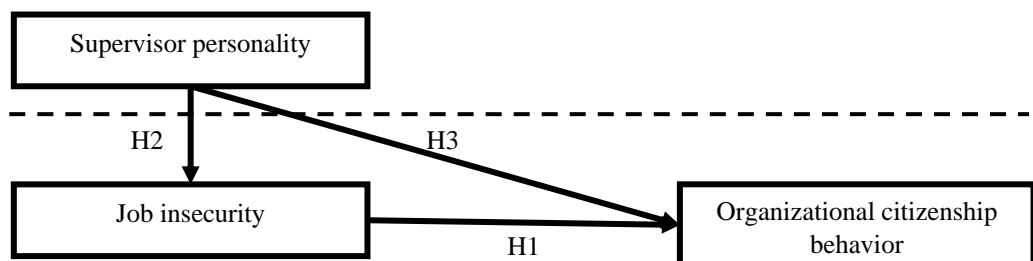


Figure 1. Hypotheses of the study

Method

Participants

The employee sample consisted of 402 employees (52.50% female) with an average age of 36.92 years (SD = 9.35) and an average tenure in the present company of 6.80 years (SD = 4.42). Most employees had a high school degree (54.50%), and only 18.20% had a university degree.

The supervisor sample contained 20 respondents (60% male), all of them with university degrees. Their average age was 35.10 years (SD = 5.21), their average company tenure was 7.20 years (SD = 3.47), and their average tenure for the present position was 5.55 years (SD = 2.40).

Measures

Subordinate workplace citizenship behavior was assessed using the self-reported Organizational Citizenship Behavior Checklist (Spector, Bauer, & Fox, 2010). The participants had to report the frequency of 10 workplace behaviors using a 5-point Likert scale (1 – *never* to 5 – *every day*). In the present sample, the reliability of the overall score was $\alpha = .85$.

Subordinate job insecurity was assessed using two popular scales: the Global Qualitative Job Insecurity Scale (De Witte et al., 2010) and the Quantitative Job Insecurity Scale (De Witte, 2000). Each scale had four items and required respondents to express their agreement using a 5-point Likert scale (1 – *strongly disagree* to 5 – *strongly agree*). Regarding the internal consistency, we obtained excellent values for quantitative job insecurity ($\alpha = .91$) and for qualitative job insecurity ($\alpha = .93$).

Supervisor psychopathy was assessed using the 26-item Levenson Psychopathy Scale (Levenson, Kiehl, & Fitzpatrick, 1995). Supervisors had to rate each item using a 5-point Likert scale (1 – *totally disagree* to 5 – *totally agree*). The 26 items are grouped on two scales: primary psychopathy (16 items, $\alpha = .84$) and secondary psychopathy (10 items, $\alpha = .69$).

Supervisor personality was assessed using the 15-items checklist that assessed the Big Five personality dimensions (Mowen, 2000). Supervisors had to rate each item using a 7-point Likert scale (1 – *does not describe me at all* to 7 – *it describes me completely*). Given the small sample size and the small number of items for each dimension, the internal consistency of the scales had acceptable values: neuroticism ($\alpha = .64$), introversion ($\alpha = .85$), openness ($\alpha = .54$), agreeableness ($\alpha = .69$), conscientiousness ($\alpha = .69$).

Procedure

All participants were informed regarding the purpose of the present research study, and then they completed paper-and-pencil questionnaires. The first author collected all data and ensured the anonymity of these

responses (i.e., only the first author had access to data containing the identity of respondents). Supervisors completed all measures individually, in the presence of the first author. Then, each supervisor scheduled the moment for the completion of the questionnaires by the subordinates. The subordinates were informed regarding the purpose of the study and were invited to the canteen to complete the questionnaires, in groups of up to 5 members. Although the first author knew the name of their supervisor, we did not collect any data regarding the identity of the respondents.

Data analysis

Because our dataset contains responses from employees and their supervisors, the employee responses from a single team (i.e., with a common supervisor) are not independent one from another and reflect their shared experiences as a workgroup. Initial analyses regarding the dispersion of variance between the employee and the team level (i.e., the computation of the intra-class correlation coefficient) indicated that about 11.80% of the variance of the citizenship behavior and 12.70% of the variance of the job insecurity is located between work teams. Therefore, we used multilevel modeling to account for the interdependence of the employee responses. In our multilevel analyses, employee responses are located at the first level, and supervisor responses are located at the second level. Because the number of the level 2 clusters is rather small to allow for investigations of potential cross-level interactions (i.e., 30 to 40 clusters are optimal, according to the guidelines formulated by González-Romá, 2019), we only estimated the fixed slopes of our multilevel models. All predictors were centered around the mean of the entire sample (i.e., *grand mean centering*), and we used the R-package *lavaan* (Rosseel, 2012) for all analyses.

Results

Preliminary analyses

In our preliminary analyses, we computed the correlation matrices at the subordinate level and at the supervisor level.

Table 1. Descriptive statistics and correlations between study variables, at both levels of analysis.

	Employee level					Supervisor level					m	SD		
	m	SD	1	2	3	4	5	6	7	8			9	10
1. Organizational Citizenship Behavior (employee)	33.71	6.59	.85	-.295	-.456*	-.582**	-.246	.084	.221	.232	.399†	-.181	33.63	2.75
2. Quantitative Job Insecurity (employee)	9.46	1.83	-.267**	.91	.792**	.096	.089	.114	-.236	-.230	-.258	-.062	9.48	0.40
3. Qualitative Job Insecurity (employee)	7.64	3.06	-.410**	.779**	.93	.512*	.248	.323	-.182	-.418†	-.483*	-.251	7.67	0.85
4. Primary psychopathy (supervisor)	-	-	-	-	-	.84	.442†	.373	-.027	-.282	-.578**	-.014	42.05	6.50
5. Secondary psychopathy (supervisor)	-	-	-	-	-	-	.69	.020	-.099	-.419†	-.649**	-.580**	23.95	3.85
6. Emotional stability (supervisor)	-	-	-	-	-	-	-	.64	-.068	-.199	-.152	-.011	7.00	2.71
7. Introversion (supervisor)	-	-	-	-	-	-	-	-	.85	.144	.213	-.180	3.70	1.42
8. Openness to experience (supervisor)	-	-	-	-	-	-	-	-	-	.54	.526*	.377	14.55	2.14
9. Agreeableness (supervisor)	-	-	-	-	-	-	-	-	-	-	.69	.291	16.00	1.92
10. Conscientiousness (supervisor)	-	-	-	-	-	-	-	-	-	-	-	.69	17.05	1.79

Note. Employee-level correlations are presented below the diagonal (N = 402), and supervisor-level correlations are presented above the diagonal (N = 20). † < .10 *p < .05 **p < .01

Results presented in Table 1 suggested that the two forms of job insecurity were strongly correlated at both levels (i.e., correlation values about .78) and supported our first hypothesis, as low levels of organizational citizenship behaviors were significantly associated with high levels of qualitative job insecurity ($r(400) = -.410, p < .001$), and with high levels of quantitative job insecurity ($r(400) = -.267, p < .001$). Regarding subordinate job insecurity, we found that only qualitative job insecurity had significant relationships with manager primary psychopathy ($r(18) = .512, p = .022$) and with manager agreeableness ($r(18) = .483, p = .031$). Therefore, our data supported H2a and H2b only in the case of qualitative job insecurity, not in the case of quantitative job insecurity. Finally, we found that subordinate

citizenship behaviors had significant negative relations with supervisor primary psychopathy level ($r(18) = -.582, p = .022$) and non-significant relations with supervisor agreeableness ($r(18) = .399, p = .081$). Therefore, only H3b was supported by our data.

Main analyses

Because our hypotheses were supported by the data only in the case of qualitative job insecurity, we tested our multilevel models using only this form of employee perception (see Table 2 for an overview of the results). At the employee level, results confirmed that job insecurity is a negative predictor of citizenship behavior ($B = -.844, SE = .096, z = -8.833, p < .001$), thus supporting H1.

Table 2. Estimates of the multilevel SEM analyses

	<i>B</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
<i>Direct effects</i>				
Intercept E.OCB	33.673	.475	70.823	<.001
Intercept E.QualJI	.001	.159	.007	.995
<i>Level 1 effects</i>				
E.QualJI => E.OCB	-.844	.096	8.833	<.001
<i>Level 2 effects</i>				
S.PrimPsych => E.OCB	-.239	.093	-2.566	.010
S.Agreeab => E.OCB	.060	.316	.188	.851
S.PrimPsych => E.QualJI	.067	.026	2.609	.009
<i>Indirect effects</i>				
<i>Crosslevel indirect effect</i>				
S.PrimPsych => E.QualJI=>E.OCB	-.057	.023	-2.500	.012

Note. E.OCB = employee organizational citizenship behavior; E.QualJI = employee qualitative job insecurity; S.PrimPsych = supervisor primary psychopathy; S.Agreeab = supervisor agreeableness

Regarding H3, we found that subordinate citizenship behaviors are predicted only by the supervisor primary psychopathy ($B = -.239, SE = .093, z = -2.566, p = .010$), not by supervisor agreeableness ($B = .060, SE = .316, z = .188, p = .851$). Regarding H2, our analyses

confirmed that subordinate qualitative job insecurity can be predicted by the supervisor level of primary psychopathy ($B = .067, SE = .026, z = 2.609, p = .009$). Finally, our mediation analyses presented in Table 3 supported H4 (indirect effect $B = -.057$,

$SE = .023, z = -2.500, p = .012$). Therefore, we can conclude that subordinate job insecurity partially mediated the relationship between

supervisor primary psychopathy and subordinate citizenship behaviors.

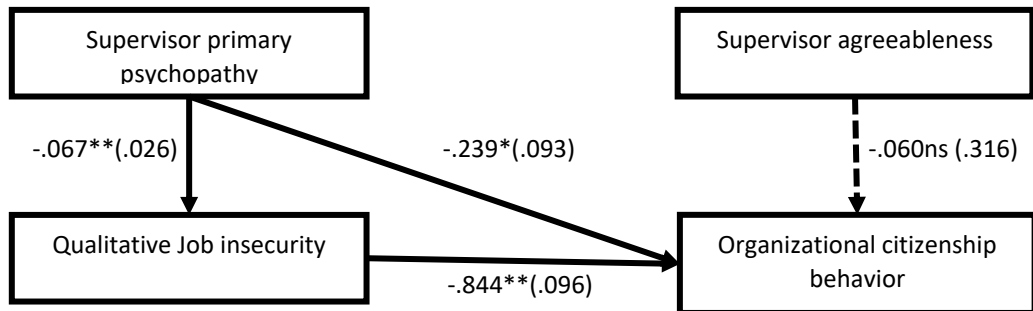


Figure 2. Multilevel SEM model (CFI = .995, TLI = .968, RMSEA = .033)

Discussion

The purpose of the present research study was to investigate the relationships that supervisor personality (i.e., assessed using the Big Five model and Levenson psychopathy scale) have with employee job perceptions (i.e., job insecurity) and with employee workplace behaviors (i.e., organizational citizenship behavior). Building on Bandura’s (1969) social learning theory, we anticipated that supervisor emotional stability, agreeableness, and psychopathy are the personality variables that are most relevant for their subordinate perceptions and behaviors.

Our results confirmed most of the associations anticipated in our hypotheses. We found that supervisor agreeableness and low primary psychopathy are associated with their subordinate organizational citizenship behaviors and with their subordinate qualitative job insecurity. These findings are in line with previous research studies that reported that manager agreeableness and emotional stability are negatively associated with subordinate retreat intentions (i.e., intentions to quit their job) and positively associated with subordinate positive evaluation of the manager (Smith & Canger, 2003). As the managers display positive interpersonal behaviors (i.e., more agreeable and less psychopathic), we found that their subordinates are more likely to report higher

levels of extra-role behaviors and feel more secured regarding the stability of their job characteristics. From the perspective of the social learning theory (Bandura, 1969), we can speculate that subordinates observed the positive interpersonal behavior of their supervisor, interpreted it as a desirable alternative, and engaged in similar positive behaviors.

Interestingly, the two forms of subordinate job insecurity displayed different correlation patterns with the supervisor personality dimensions, as only qualitative job insecurity was associated with some of the manager traits. Because the perceived probability of losing the job (i.e., quantitative job insecurity, De Witte, 2000) was not related to the supervisor behaviors, we can assume that these subjective evaluations are based on information that is either from other management levels (e.g., top management), based on information regarding the company as a whole (e.g., news regarding the economic performance of the company), or information specific to the region the employees live (e.g., the general unemployment level in the area).

In addition to the investigation of the correlations described above, we also investigated which personality perspective (i.e., the Big Five factors or Levenson psychopathy model) is more relevant to predict subordinate perceptions and behaviors. Our multilevel regression analyses suggested

that the "dark trait" (i.e., primary psychopathy) outperformed the Big Five factors in predicting the subordinate perceptions and behaviors. This result suggested that negative supervisor behaviors could have a stronger impact on employee perceptions and behaviors, as compared with positive supervisor behaviors. This type of negativity bias is well-known in the psychology of emotion research field (Rozin & Royzman, 2001), but it is less explored in organizational settings. From the negativity bias hypothesis, employees are inclined to give more weight to negative supervisor traits (i.e., as we found in our analyses) and, when working for a supervisor with high scores in primary psychopathy, are biased towards ignoring the supervisor positive behaviors when they occur (i.e., negativity dominance – Rozin & Royzman, 2001).

Finally, our mediation analyses indicated that some of the covariances between supervisor psychopathic behaviors and employee citizenship behaviors are mediated by the employee expectancies that their tasks will change. This result suggested that supervisor focus on their own objectives and goals could generate job-related uncertainties in their employees, and this could ultimately lead to fewer extra-role behaviors. Previous studies suggested that high levels of job insecurity are negatively associated with in-role and extra-role behaviors because the employees do not identify with the organization when they are uncertain regarding the content of their jobs (Piccoli et al., 2017). Although we did not assess subordinate identification with the organization, future research studies could investigate this variable as a potential mediator between supervisor psychopathic traits and subordinate citizenship behaviors.

The findings of the present research study have two major practical implications. First, practitioners responsible of managerial selection processes should be aware of the existence of correlations between supervisor personality and subordinate attitudes or subordinate behaviours. Based on our findings, future selection processes could define low agreeableness or high primary psychopathy as counter-indications for a successful future supervisor. The second

practical implication regards the fact that negative personality traits (i.e., primary psychopathy) are more relevant for predicting subordinate attitudes and behaviours, as compared with positive personality traits (i.e., agreeableness). This finding could be relevant for the training of supervisors, as they should exert more self-control when it comes to interacting in negative manners with their subordinates.

Limits

The results of the present research study should be interpreted with caution, as there are three major limitations that should be taken into account. First, the cross-sectional nature of our study prevents us from formulating causal conclusions. While the existence of significant correlations is a condition for the existence of causal relations, longitudinal research studies are needed to provide robust evidence regarding the direction of this effect. Second, although the subordinate sample was consistent, the manager sample was limited. This influenced our ability to obtain significant results at the second level of our analyses. As a consequence, we overlooked some medium associations because we did not have the statistical power to reach their acceptable probability levels. Therefore, although we focused our results only on the strongest associations, other relationships might be relevant in a more powerful study. Finally, another limitation is that we did not control for employee variables that might be relevant predictors for their citizenship behavior (e.g., employee personality – Ilieș et al., 2009).

Conclusion

In the present study, we identified some promising relations between the supervisor self-reported behaviors and their subordinate perceptions and behaviors. We found that supervisor negative behaviors (i.e., primary psychopathic behaviors) are better predictors for subordinate perceptions and behaviors, as compared with supervisor positive behaviors (i.e., agreeable behavior). This result is particularly important because it suggested that discouraging supervisor negative

behaviors is more important, as compared with encouraging their positive behaviors.

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RESEARCH ARTICLE

Development of a New Personality-Oriented Work Analysis Questionnaire: First Steps Towards Validation

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Abstract

In this paper we detail the construction process for a new personality-oriented work analysis instrument, in the form of a standardized questionnaire, based on extant research that shows that personality traits are good predictors of job performance. We present the process of item development, frame of reference training, rating scale creation, and the selection of subject matter experts. By administering the instrument to three distinct positions, the interrater reliability coefficients resulted between .80 and .94. We also investigated the instrument's ability to discriminate between the same rated positions, and the results for this indicator were quite low. Conclusions provide some possible explanations for the lower resulted discriminability. Practical and theoretical implications are discussed as well as other future research for general improvement of data quality.

Keywords

job analysis, personality traits, job performance, frame of reference training

Introduction

Following the number of meta-analyses that provide support in regards to personality traits as valid predictor of job performance (Barrick & Mount, 1991; Hogan & Holland, 2003; Hurtz & Donovan, 2000; Judge et al., 2013; Lee et al., 2019; Salgado, 1997; Tett et al., 1991; Tett et al., 1999; Vinchur et al., 1998; Woo et al., 2014), a new topic, namely personality oriented work analysis (O'Neill et al., 2013) is currently expanding in the broad spectrum of the job and work analysis field, with many encouraging results during the last three decades in different occupational fields (Arumugam et al., 2014; Atkins, 2012; Conrad & Schweizer, 2018; Goffin et al., 2011; Jordan

et al., 2018; Lubelski et al., 2016; Spielberg & Corey, 2014; Suresh et al., 2012).

Although there are a number of promising results in the field of personality-oriented work analysis (POWA), there is still a general need to develop valid predictive methodologies by addressing several current issues (Castille et al., 2019). First of all, it is necessary to explain the exact influence of personality traits on job performance, and how the job relevant traits needed for optimal performance can be identified for a certain job (Goffin et al., 2011; O'Neill et al., 2013). Also, besides the different sources of inaccuracy that can be present during the work analysis process (Morgeson & Campion,

1997, 2012), there are also other reasons for the need to develop valid POWA methodologies, such as reducing the number of assessed traits for predicting performance in a certain job and, last but not least, a better legal defense when personality-based organizational decisions might be challenged by other parties (O'Neill et al., 2013).

Having in mind the aforementioned information about the ongoing status of this new type of job and work analysis methodology, in this paper we will describe the steps made towards the construction and validation of a new proposed POWA instrument that will mainly follow the recommendations provided by O'Neill et al.'s (2013) review regarding the current best practices in this field. Also, we will focus on the mitigation of cognitive and social sources of inaccuracy usually present during questionnaire-based work analysis processes (Morgeson & Campion, 1997, 2012) and on the self-serving bias identified especially in POWA by Cucina et al. (2005); these are biases that most of the already existing POWA methodologies did not specifically approach.

In order to further improve the data quality gathered through our proposed POWA instrument, besides O'Neil et al.'s (2013) recommendations, the general design, instructions, items, rating scale, frame of reference training (FOR training) of our proposed POWA questionnaire and the selection of relevant subject matter experts (SMEs) will also take into account the results from the meta-analyses published so far in the job and work analysis field (Dierdorff & Wilson, 2003; DuVernet et al., 2015; Voskuijl & van Sliedregt, 2002).

Further following the first steps in the validation process of our new POWA questionnaire, we will investigate the data quality indicators already established in the job and work analysis field.

Interrater reliability is the most common data quality indicator used in the job and work analysis processes (Dierdorff & Wilson, 2003; DuVernet et al., 2015; Voskuijl & van Sliedregt, 2002), because it assesses the level of consistency across all the SMEs that provide ratings for the job in question.

Research Question 1: What is the consistency of trait ratings across the SMEs for each position?

Another important indicator in the job and work analysis field is the ability of the questionnaire to discriminate between jobs and it represents the extent to which the SMEs manifest enough variance when providing ratings (DuVernet et al., 2015; Morgeson & Campion, 1997).

Research Question 2: What is the level of variance provided by the SMEs for each position?

Methods

The POWA instrument

The items

The construction of the items is based on the Big Five model within the NEO PI-R personality questionnaire built by Costa and McCrae (1992) and on its Romanian adaptation done by Iliescu et al. (2008). The decision to use the Big Five personality model of Costa and McCrae was based not only on its popularity among researchers and practitioners, but also on its proven validity in the industrial-organizational field (Costa, 1996), on its high level of cultural adaptation for the Romanian population (Ispas et al., 2014) and due to the extensive meta-analysis regarding this model and job performance conducted by Judge et al. (2013).

With very few exceptions (Salgado et al., 2013; Salgado et al., 2015), the published research so far concludes that broader personality factors are better predictors of overall job performance than their respective facets, and instead the latter can provide higher predictions for task performance (Judge et al., 2013; Debusscher et al., 2017) and contextual performance (Dudley et al., 2006; Judge et al., 2013). Taking these into account, we have to mention that the predictive value of facets depends very much on the specific performance criterion investigated and the occupational category in question (Dudley et al., 2006; Jenkins & Griffith, 2004) which is our aim in investigating the data quality provided by our instrument. Nonetheless, having in mind the multidimensional nature of individual job

performance (Harrari & Viswesvaran, 2018), following the recommendations of O'Neill et al. (2013), we chose to use facets of personality in our POWA instrument for several important reasons, some specific personality traits assessed through facets can be not just important, but sometimes even harmful for job performance, also, facets are more specifically defined in comparison with broader factors, certain specific traits can be linked to correspondently specific aspects of job performance and lastly, if needed, facets can be aggregated into broader factors when necessary, but the opposite would not be possible.

The meta-analysis performed by Shaffer and Postlethwaite (2012) revealed that contextualized items for the specific field of interest usually generate higher levels of accuracy. Thus, we introduced in the descriptions of the personality traits as many stimuli related to the occupational field, such as: "at work", "activity", "work environment", etc. In order to further add to the contextualization of the items and to avoid clinical connotations, those referring to the "Neuroticism" factor were reversed (Costa, McCrae, & Kay, 1995).

Besides the recommendations provided by O'Neill et al. (2013) and by Goffin et al. (2011) regarding the general design of the POWA items, an important aspect that needs to be discussed is that of "observability". Although interrater agreement may increase when items have a lower degree of behavioral observability (Roch et al., 2009), simultaneously, when ratings for personality traits regarding their "importance" for job performance are used, the general interrater reliability might decrease (Dierdorff & Morgeson, 2009). Having in mind these indications, we also inspected the linguistic characteristics of the items, and for a greater reliability, we aimed that their content should have as few words as possible, so that we would not generate fatigue for the SMEs, also, a high degree of specificity and behavioral observability and to avoid double-barreledness, respectively, the sentences in question to address just one behavior (Brutus & Facticeau, 2003; Kaiser & Craig, 2005).

The resulted items follow a trait-based description (O'Neill et al., 2013), in which, each personality facet is described in terms of behaviors at work of a hypothetical incumbent in the rated position and the construction process was the following: a) we reviewed all the available sources regarding personality trait descriptions of the facets of either the Five-Factor (Costa & McCrae, 1995) or the Big Five (Goldberg, 1990) models b) based on these and on recommendations regarding observability and other linguistic aspects described above we created new trait descriptions, one for each facet c) we included in the trait descriptions not just "positive" aspects of the trait but also "negative" ones. The original items in Romanian can be viewed in Appendix 1 and a translated version is available in Appendix 2.

Also, regarding the order of placement of the items, for greater accuracy we used the recommendations of McFarland et al. (2002), to use an alternative order, respectively one item from each scale placed consecutively, and then the order resumed, until they are exhausted.

The rating scale

The evidence so far, shows us that there is also a linear personality-job performance relationship, even in a job analysis context, where the SMEs rate a certain trait in regards to its importance for performance in a certain job (Walmsley et al., 2018). It should also be noted that although subjective rating scales, such as those which assess the importance or difficulty regarding a characteristic or a task, produce higher levels of interrater agreement compared to objective ones, but at the same time are more prone to lower interrater reliability and discriminability between jobs (DuVernet et al., 2015), while Weekley et al. (2019) reported that the use of an "importance" rating scale when using personality traits as items, is valid enough to be used in the work analysis process.

For a better representation of the influence that personality traits can have, either positive or negative, on job performance (Tett et al., 1999), we opted to use a 5-point Likert type bidirectional scale on the "Disastrous

Influence - Optimal Influence” continuum according to the model used by Costa et al. (1995) and Goffin et al. (2011) and not one based on a classic continuum like the "Unimportant - Very Important". This decision was made in order to capture both the

negative influence and not just the simple importance of the respective personality trait on job performance (O'Neill et. al, 2013). A sample of the developed rating scale can be viewed in Figure 2.

DI = Disastrous Influence...	NI = Negative Influence...	N = No influence or relevance...	PI = Positive Influence...	OI = Optimal Influence...			
...on job performance in the rated position.							
Personality traits			Your rating				
Sociability – In this position the person prefers to interact with other people during the work activity. Enjoys and actively seeks other people’s presence in the work environment. Develops or easily integrates in different professional circles, groups and social networks.			DI	NI	N	PI	OI

Figure 1. Example of the rating scale regarding the influence of the “Sociability” personality trait on job performance for the rated position

Frame of Reference Training

In addition to providing expert instruction, FOR training helps in collecting higher-accuracy data from participants (Roch et al., 2012). The FOR training for our POWA instrument was also introduced in order to diminish the social and cognitive biases often encountered during the job and work analysis processes reported by Morgeson and Campion (1997, 2012) as well as self-serving bias (Cucina et al. 2005, 2012).

An important first step in implementing our FOR training was the one provided by Aguinis et al. (2009), in which they managed to significantly reduce the self-serving bias manifested by the SMEs in a similar POWA process. The other important step in building our FOR training is represented by Tsai’s et al. (2019) model, respectively a “restructured” type of FOR training. In this type of training, SMEs are first introduced to the “correct” type of rating, and then they are invited to practice the example ratings using the previously learned scheme and only afterwards to rate the items (in our case, the personality traits) of the

questionnaire itself. In contrast, in a “standard” or “typical” FOR training, the SMEs first practice the example items and only after, they receive feedback from the instructor regarding the “correct” type of rating, and finally they move on to filling the questionnaire itself.

Careless responding

Another important aspect that reduces the validity of work analysis processes is the tendency of SMEs to respond in a careless way (Sanchez & Levine, 2012). This may be due to both their lack of motivation (Morgeson & Campion, 1997) and their perceived ambiguity about the rated position (Dierdorff & Rubin, 2007; Stetz, Button, & Quist, 2012). To mitigate this possible tendency of the SMEs, we followed the recommendation of Morgeson et al. (2016) and used a warning text, informing them that a superior could verify their ratings and possible justifications might be asked of them regarding their choices made in rating the importance of personality traits.

The selection of relevant SMEs

In general, in the job and work analysis procedure, the process of selecting SMEs for a given position is based on five large groups of people, namely incumbents, supervisors - either direct supervisors or senior managers, technical experts - employees who do not directly perform the activity of the job in question, but have the necessary knowledge of its specific requirements, human resource specialists - either specialists in the human resources department or expert consultants in this field and other individuals relevant to the job, such as customers or suppliers of the company, etc... (Brannick et al., 2017; Guder, 2012; Morgeson & Dierdorff, 2011).

Regarding the selection of a certain person or a certain group from the categories described above, there are both disadvantages and advantages (Dierdorff & Wilson, 2003; DuVernet, et al., 2015; Voskuijl & van Sliedregt, 2002) and having in mind that there is no general consensus, in this case, for ensuring data quality and further research we will use all types of SME categories available (Manea, 2020).

Out of all the demographic information of the SMEs, Weekley et al. (2019) revealed that the most relevant one related to rating the importance of personality traits required for job performance was provided by individuals, both incumbents and supervisors, who reported that they "knew the job extremely well", regardless of either job experience in the field of activity or the job tenure. This last aspect was also strengthened by the results provided by DuVernet et al. (2015), respectively, job tenure was associated with a higher inflation of the mean ratings, and also by Morgeson et al. (2016) namely, a greater job experience was associated with careless responding and a lower convergence in terms of decomposed and holistic ratings. Taking into account the aforementioned information, we decided not to collect any information, or select SMEs based on job tenure or job experience. Also, we decided not to collect other demographic information, because gender-based characteristics in terms of sample heterogeneity have produced lower factor structure confirmation and other aspects such as race or age did not generate any

significant effects concerning data quality (DuVernet et al., 2015). Instead, we opted to add a four step Likert type of scale in which SMEs can assess their own level of job knowledge (Hunter, 1983) of the activity occurred within the rated job on the following continuum: (1) extremely well (2) very well, (3) somewhat and (4) not at all (Weekley et al., 2019).

Also, in order to follow the recommendations of O'Neill et al. (2013) regarding the construction of a O*NET type of database for POWA rated positions, we added a field in which the job code can be filled according to the Classification of Occupations in Romania (Noua clasificare a ocupațiilor din România, 2020).

Participants

The participants who acted as SMEs rated three of the following jobs, with their codes accordingly to the *Noua clasificare a ocupațiilor din România* (2020), as follows: "Insurance inspector" (COR code: 241206), "Insurance coordinator" (COR code: 241246) and "Insurance automotive claims inspector" (COR code: 241248). All the selected SMEs were employed in a private insurance company, which operates in Romania. For each rated position, the following individuals completed the POWA instrument (Table 1):

Insurance inspector (N = 14), respectively eight incumbents, a supervisor, a human resources specialist, four technical experts and another organizational member. The self-reported level of job knowledge was "extremely well" for two of them, for nine SMEs "very well" and for the remaining three as "somewhat".

Insurance coordinator (N = 19), namely 12 incumbents, three supervisors, a human resources specialist, two technical experts and another organizational member. Two of the participants self-assessed their job knowledge as "somewhat" known, while eight considered it as "extremely well" and the other nine as being "very well".

Automotive claims inspector (N = 23), respectively 12 incumbents, six supervisors, a human resources specialist and for technical experts. Of these, six participants reported

their job knowledge as “extremely well”, while 17 of them as being “very well known”.

Given that during the POWA process, the minimum number of SMEs recommended for

the rating a position varies, being around 8–15 individuals (Foster et al., 2012; Raymark et al., 1997), we can consider that we have met the necessary conditions for sampling.

Table 1. *SME categories and their respective self-ratings of job knowledge for each rated position*

	Insurance inspector	Insurance coordinator	Automotive claims inspector
SME: Incumbent	8	12	12
SME: Supervisor	1	3	6
SME: Human resources specialist	1	1	1
SME: Technical expert	4	2	4
SME: Other organizational member	1	1	-
Total SMEs	14	19	23
SMEs’ job knowledge: “Extremely well”	2	8	6
SMEs’ job knowledge: “Very well”	9	9	17
SMEs’ job knowledge: “Somewhat”	3	2	-
SMEs’ job knowledge: “Not at all”	-	-	-

Procedure

The POWA instrument was administered by a PhD student in organizational-industrial psychology, in a pencil-and-paper format, with the SMEs joining in groups of about 10 individuals. After reading and signing an informed consent form, the SMEs participated in a group POWA session that lasted approximately 30 minutes.

The SMEs went through the FOR training which began with five hypothetical examples regarding the influence of the personality trait "Sociability" on job performance and the rationale for using the 5 options in the Likert rating scale for each position (Tsai et al., 2019).

Building from Aguinis et al. (2009) and Goffin et al. (2011), the FOR Training also contained three exercises regarding the influence of the personality trait "Sociability" on the performance for three distinct positions, respectively "Area sales director", "Production line operator" and "Network and

computer technician". For each position, the SMEs were explained the reasoning for which they should select either the "Optimal Influence" or "Positive Influence" option for the first position, for the second the "No relevance or influence" option and for the last either the "Negative Influence" or "Disastrous Influence".

After asking any possible questions and being provided with the necessary answers by the researcher, the SMEs individually completed the POWA questionnaire for their assigned position.

Results

We computed the mean (M) and the standard deviation (SD) resulted after the administration of the POWA instrument for each of the 3 rated positions (Table 1).

Following the model of Goffin et al. (2011), we also highlighted three personality traits relevant to the performance for each position according to the highest level of the

average scores offered by the experts, and if they were equal, we selected them according to the lowest level of its corresponding standard deviation value. Four traits were highlighted instead of three for the “Insurance coordinator” position.

Table 2. POWA instrument: mean (M) and standard deviation (SD) values regarding the influence of personality traits on job performance for the three rated positions

Personality traits	Automotive claims inspector		Insurance inspector		Insurance coordinator	
	M	SD	M	SD	M	SD
(N1) Anxiety control	1.09	.73	.64	.92	1.47	.61
(N2) Anger control	.26	1.32	.21	1.67	1.05	.97
(N3) Resilience	.87	.54	.71	.61	1.37	.68
(N4) Social presence	1.04	.63	.79	.89	1.63	.49
(N5) Impulse control	1.09	.84	.64	.92	1.37	.83
(N6) Stress tolerance	1.61	.72	1.43	.51	1.63	.49
(E1) Cordiality	.52	.94	1.14	.53	1.16	.68
(E2) Sociability	.96	.82	1.07	.73	1.47	.77
(E3) Assertiveness	.39	.94	.29	1.20	.11	1.15
(E4) Dynamism	1.26	.75	.79	.69	1.47	.69
(E5) Enthusiasm	-.91	.99	-.86	1.16	-.47	1.30
(E6) Optimism	.91	.73	.79	.69	1.05	.70
(O1) Imagination	.78	.90	.21	1.12	.89	1.04
(O2) Aesthetic sense	-.35	.83	-.36	.84	-.26	.99
(O3) Self-awareness	-.30	1.10	.43	.93	-.21	.78
(O4) Flexibility	1.09	.94	.64	1.00	1.16	.95
(O5) Vision	.83	.88	.50	.94	1.00	.66
(O6) Tolerance for diversity	.22	.79	.50	.76	.21	.85
(A1) Trust	-.30	.97	.21	1.47	.05	1.12
(A2) Sincerity	.91	.79	.93	.82	.68	1.10
(A3) Altruism	.39	.89	1.07	.47	.32	1.00
(A4) Conformism	.61	.94	.43	1.22	.53	.90
(A5) Modesty	-.04	1.02	.00	1.03	-.42	.96
(A6) Empathy	.26	.86	.57	.75	.53	.96
(C1) Effectiveness	1.52	.59	1.07	.61	1.53	.61
(C2) Organization	1.65	.57	1.21	.42	1.68	.47
(C3) Responsibility	1.78	.42	1.43	.64	1.79	.41
(C4) Ambition	1.65	.57	1.00	.67	1.63	.49
(C5) Self-discipline	1.48	.59	1.29	.46	1.47	.69
(C6) Planning	1.39	.58	1.29	.61	1.42	.76

Note: The most relevant personality traits for each position are highlighted. In the case were mean (M) values were equal, we chose the trait with the lowest standard deviation (SD) value.

Results indicate that certain personality traits are considered specific to the activity of a position, such as “(N6) Stress Tolerance” and “(C5) Self-Discipline” for the position of “Insurance Inspector” and “(N4) Social Presence” for the position of “Insurance coordinator”. Instead, other features seem to be rather common across positions, e.g., “(C2) Organization” and “(C4) Ambition” for the positions “Insurance coordinator” and “Automotive claims inspector”, and “(C3) Responsibility” for all 3 positions.

Research Question 1, examined if the level of consistency of trait ratings across all the

SMEs for each job will be consistent enough. Thus, we computed the interrater reliability coefficient, as it is the most commonly used indicator of accuracy in job and work analysis questionnaire-based methods and we chose to express it by using the ICC method - Intraclass Correlation Coefficient (DuVernet et al., 2015; Dierdorff and Wilson, 2003; Morgeson et al., 2019; Voskuijl and van Sliedregt, 2002).

The interrater reliability coefficient turned out to be quite high, namely it varied between .80 and .94 for the rated positions as we can observe and in Table 2.

Table 3. *Interrater reliability coefficients and confidence intervals for the three rated positions*

Rated position	ICC	95% CI
Automotive claims inspector	.94	.90–.96
Insurance inspector	.80	.68–.89
Insurance coordinator	.93	.89–.96

In order to address Research Question 2 and to determine the discriminability between jobs of our POWA instrument, we computed an ANOVA procedure and, due to slight difference between the SME sample sizes for each position, a Gabriel Post Hoc test. The results present in Table 3 show us that only three rated traits could discriminate between two jobs, namely “(N3) Resilience” and “(N4) Social presence” for the „automotive claims inspector” and „insurance coordinator” and for the „insurance inspector” and insurance coordinator” positions, respectively. Subsequently, the “(C2) Organization” and “(C4) Ambition” traits could provide a significant difference for the ratings between

the „automotive claims inspector” and „insurance inspector” positions and between the „insurance inspector” and “insurance coordinator” positions. Also, “(N1) Anxiety control”, “(E4) Dynamism” and “(A3) Altruism” could offer a significant difference for the ratings between the „insurance inspector” and “insurance coordinator” positions, while “(E1) Cordiality” provided a significant difference between the „automotive claims inspector” and „insurance coordinator” positions. The other traits could not provide any other significant discriminability between the rated positions.

Table 4. ANOVA and Gabriel Post Hoc test results for discriminability among the three rated positions

Personality traits	F	df	η^2	p	M1	M2	M3	p(Dif 1-2)	p(Dif 1-3)	p(Dif 2-3)
(N1) Anxiety control	4.96	2	0.71	.01	1.09	.64	1.47	.22	.27	.00
(N2) Anger control	2.38	2	0.54	.10	.26	.21	1.05	.99	.16	.20
(N3) Resilience	5.48	2	0.73	.00	.87	.71	1.37	.83	.03	.01
(N4) Social presence	7.23	2	0.78	.00	1.04	.79	1.63	.58	.01	.00
(N5) Impulse control	2.86	2	0.58	.06	1.09	.64	1.37	.34	.64	.05
(N6) Stress tolerance	0.53	2	0.20	.59	1.61	1.43	1.63	.75	.99	.71
(E1) Cordiality	4.45	2	0.68	.01	.52	1.14	1.16	.06	.03	1.00
(E2) Sociability	2.38	2	0.54	.10	.96	1.07	1.47	.96	.10	.38
(E3) Assertiveness	0.36	2	0.15	.69	.39	.29	.11	.98	.77	.95
(E4) Dynamism	3.75	2	0.65	.03	1.26	.79	1.47	.15	.71	.02
(E5) Enthusiasm	0.83	2	0.29	.43	-.91	-.86	-.47	.99	.52	.71
(E6) Optimism	0.57	2	0.22	.56	.91	.79	1.05	.93	.89	.64
(O1) Imagination	2.03	2	0.50	.14	.78	.21	.89	.26	.97	.16
(O2) Aesthetic sense	0.06	2	0.02	.94	-.35	-.36	-.26	1.00	.98	.98
(O3) Self-awareness	2.73	2	0.57	.07	-.30	.43	-.21	.08	.98	.18
(O4) Flexibility	1.30	2	0.39	.28	1.09	.64	1.16	.44	.99	.35
(O5) Vision	1.46	2	0.42	.24	.83	.50	1.00	.57	.87	.25
(O6) Tolerance for diversity	0.65	2	0.24	.52	.22	.50	.21	.65	1.00	.67
(A1) Trust	0.97	2	0.32	.38	-.30	.21	.05	.46	.69	.97
(A2) Sincerity	0.41	2	0.17	.66	.91	.93	.68	1.00	.80	.83
(A3) Altruism	3.72	2	0.65	.03	.39	1.07	.32	.06	.98	.04
(A4) Conformism	0.14	2	0.06	.86	.61	.43	.53	.93	.99	.99
(A5) Modesty	0.97	2	0.32	.38	-.04	.00	-.42	.99	.54	.55
(A6) Empathy	0.72	2	0.26	.48	.26	.57	.53	.64	.69	.99
(C1) Effectiveness	2.93	2	0.59	.06	1.52	1.07	1.53	.09	1.00	.10
(C2) Organization	4.18	2	0.67	.02	1.65	1.21	1.68	.03	.99	.03
(C3) Responsibility	2.84	2	0.58	.06	1.78	1.43	1.79	.10	1.00	.11
(C4) Ambition	6.52	2	0.76	.00	1.65	1.00	1.63	.00	.99	.00
(C5) Self-discipline	0.52	2	0.20	.59	1.48	1.29	1.47	.71	1.00	.75
(C6) Planning	0.18	2	0.08	.83	1.39	1.29	1.42	.95	.99	.91

Note: M1 = mean values for the „automotive claims inspector” position; M2 = mean values for the „insurance inspector” position; M3 = mean values for the „insurance coordinator” position; p(Dif 1-2) = p difference between M1 and M2 values; p(Dif 1-3) = p difference between M1 and M3 values; p(Dif 2-3) = p difference between M2 and M3 values. Values of significant difference above .05 are highlighted.

Discussions and conclusions

Our study aimed at presenting the first steps towards the construction of a new POWA instrument which can keep at a minimum the effect of potential sources of social and cognitive Morgeson and Campion (1997) which can affect the data quality indicators. From our knowledge, no other POWA-based study did not set out to accomplish, and from our perspective this might be a significant step in the personality-job performance research and practice field, in exploring the exact influence of certain personality traits in predicting both the positive influence and especially, the negative one on certain work activities and outcomes (O'Neill et al., 2013; Tett et al., 1999).

The POWA instrument provided a high interrater reliability coefficient, thus Research Question 1 had a favorable answer and we can affirm that our instrument can be reliable enough so that we can continue future research by administering for other positions in different fields of activity.

The personality traits selected as relevant to job performance were considered by the SMEs to be somewhat similar for all three positions. This aspect could be explained either by the meta-analyses regarding the "Neuroticism" and especially "Conscientiousness" traits as general indicators of job performance (Hurtz & Donovan, 2000; Judge et al., 2013) or through a combination of different social or cognitive biases manifested by experts during the completion of the questionnaires, highlighted by Morgeson and Campion (1997, 2012).

While interrater reliability was considerably high, the discriminability between jobs was quite low; this might be explained from three perspectives. First, the general nature and design of our POWA instrument might be a cause, because in terms of general data quality, we know so far that more general activity work descriptors, non-traditional work analyses techniques and subjective rating scales provide lower levels of discriminability (DuVernet et al., 2015). The second explanation might lie within the selection of the participation, because among all the SME categories, professional analysts

produce the highest levels of discriminability in comparison with supervisors and incumbents (DuVernet et al., 2015), and since our study included just one professional analyst per position, which might not be enough for ensuring a high for this indicator. Last but not least, the lower discriminability might have been affected by the presence of one or more of the social and cognitive biases proposed by Morgeson and Campion (1997), such as motivation loss, information overload, heuristics, categorization and careless responding.

Nevertheless, the traits that showed a significant discriminability, were generally those based on the "Neuroticism" and "Conscientiousness" factors. As we already outlined above, these two factors are the best predictors of job performance, so this might be no surprise.

Practical and theoretical implications

Our paper adds more value regarding the use of personality traits as a valid concept for assessing the requirements for job performance in the work analysis processes (O'Neill et al., 2013). Also, Weekley et al. (2019) found that individuals with the highest level of job knowledge are those who will provide the most valid rated, which was not confirmed in this study, because not that many of the SMEs reported to know the rated position as "extremely well". A possible explanation could be related to the semantics of the expression "extremely well" compared to "very well" in the self-reports scale, and that participants may have shown a negative attitude towards the expression containing the term "extreme". Also, the researcher noticed that most of the SMEs had a negative, both verbal and non-verbal, reaction to the instruction that a superior might question them regarding some of their ratings. Although this instruction was meant to reduce careless responding tendencies (Morgeson et al., 2016) we think that this type of warning should not be used, instead other methods for reducing carelessness might be integrated such as the use of "bogus items" as provided by Dierdorff and Rubin (2007).

We should note that the FOR training seems to be effective, and it should be taken into account in future researches, especially in terms of increasing its effect on the accuracy of data provided by the SMEs, which occurs immediately after the presentation of the purpose and definitions of the dimensions rated by participants (Hauenstein & McCusker, 2017).

Limitations

The present study involved just three positions with SMEs belonging to the same company, in the insurance field of activity. In order to further investigate the data quality that can be gathered through our POWA instrument, we must administer it in other diverse fields of activity, and not just in “white-collar” mediums. Also, more technical experts and human resource specialists need to be involved as SMEs in the rating process for both accuracy and further research (Manea, 2020). For example, our SMEs involved just one human resource specialist for all three rated positions, and having in mind that this category is the most exposed to cognitive biases that can affect the data quality gathered (Morgeson & Campion, 1997) we should aim to include at least two of this category.

Future directions for research

Morgeson and Campion (1997) proposed that some social and cognitive biases such as motivation loss, information overload, heuristics, categorization and careless responding might have a negative impact on the effective discriminability between jobs of job and work analysis questionnaires, thus, as directions for further research and especially for reducing these biases and for the general improvement of the accuracy of the data collected through our POWA instrument, we consider addressing them with some immediate and practical decisions. For example, the SMEs motivation loss could be reduced by including in the instrument's instructions a short text that will highlight the benefits for both the organization and the individuals regarding the results of the work analysis process (Cecil, 2015; Ispas, 2010). We believe that information overload was not

an issue, as we have condensed the instrument's contents to a minimum and to its essential. Regarding the heuristics bias, although our FOR training was built in order to diminish the possible effects of anchoring and adjustment heuristics on the model based by Tsai et al., 2019, other two possible types of heuristics might be present, such as representativeness and availability (Morgeson & Campion, 1997). Firstly, we will inform the SMEs in the instructions section of the instrument that they can be unconsciously susceptible to some cognitive errors (Nisbet & Ross, 1980). Also, in order to prevent the representativeness heuristics, the SMEs will be noticed to base their ratings not just on small units of the position's activity but to also take into account its broader scope (Sanchez et al, 1994). Concerning the availability heuristics, we will also instruct the SMEs to not take into account the occasional factors that although they might cause strong memories and feelings when they provide their ratings, instead to focus just on the important and representative events of the respective position (Sanchez et al, 1994). Continuing with the categorization bias, we will ensure that there are no temporal pressures for the SMEs, that the instructions will be kept short enough and to the point, and that they will rate only one position per session (Fiske & Pavelchak; Kulik, 1989). Moreover, concerning careless responding, from the list of items present in the questionnaire, we will select at least one “bogus item” so that we can detect this type of responding type (Meade & Craig, 2012) and if the case, possibly eliminate the respective SMEs responses from the information database related to the position in question.

Moreover, another possible solution in reducing the aforementioned social and cognitive biases would be to administer the POWA instrument in an online medium and not in a pencil-and-paper format (Reiter-Palmon et al., 2006).

Finally, the future directions regarding the accuracy of our instrument will focus on gathering a greater number of positions from broader ranges of activity with a sufficiently number of SMEs and not only investigating the interrater reliability and discriminability

coefficients, but also other important data quality indicators used in job and work analysis such as intrarater reliability (Dierdorff and Wilson, 2003; DuVernet et al., 2015), interrater agreement, intrarater agreement, rate-rerate reliability, factor structure confirmation, endorsement of distractor items and the inflation or deflation of mean ratings (DuVernet et al., 2015).

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Appendix 1

Original items (trait descriptions) in Romanian

<p>(N1) Controlul anxietății - În acest post persoana este calmă și liniștită. Aceasta nu se îngrijorează în fața potențialelor probleme sau dificultăți întâlnite în munca sa. În cadrul activității sale, ia lucrurile așa cum sunt, fără să intre în stări de panică sau să resimtă alte stări de nervozitate sau anxietate.</p>
<p>(N2) Controlul furiei - În acest post persoana se înfurie și se supără cu greu. Aceasta nu se enervează atunci când întâlnește situații problematice în munca sa. Nu se simte ofensată sau iritată chiar și în situațiile în care este trasă la răspundere, criticată sau confruntată de către cei din mediu său de lucru.</p>
<p>(N3) Reziliență - În acest post persoana își revine rapid după eventuale eșecuri și nu se plânge de problemele din trecut sau din prezent. Aceasta nu se culpabilizează pentru greșelile din trecutul activității sale profesionale. Se descurajează cu greu în fața obstacolelor ce apar în munca sa.</p>
<p>(N4) Prezență socială - În acest post persoana se comportă într-un mod neînhibat în interacțiunile sociale. Aceasta se simte confortabil și se rușinează cu greu în situațiile în care trebuie să desfășoare activități în prezența altora. Inițiază cu ușurință conversații cu persoanele străine întâlnite în activitatea sa.</p>
<p>(N5) Controlul impulsurilor - În acest post persoana este rezistentă în fața propriilor dorințe și tentații de moment. Aceasta își ține sub control emoțiile și frustrările personale survenite în munca sa. Nu acționează pe baza impulsului de moment, indiferent de emoțiile personale trăite de-a lungul activității sale.</p>
<p>(N6) Toleranță la stres - În acest post persoana tratează în mod eficient situațiile stresante. Aceasta se adaptează și rămâne calmă în situațiile de criză și incertitudine din activitatea sa. În munca sa, își gestionează eficient propriile emoții chiar și în condiții ridicate de stres și presiune externă.</p>
<p>(E1) Cordialitate - În acest post persoana interacționează cu ceilalți într-un mod călduros și prietenos. Aceasta inițiază cu ușurință relații apropiate cu persoane din mediul său de lucru. Stabilește legături de amicitie și prietenie de lungă durată cu alte persoane pe care le întâlnește în activitatea sa.</p>
<p>(E2) Sociabilitate - În acest post persoana preferă să interacționeze cu alte persoane în activitatea sa. Aceasta apreciază și caută în mod activ compania altor persoane din mediul său de lucru. Dezvoltă sau se integrează cu ușurință în diverse grupuri, cercuri și rețele sociale profesionale.</p>
<p>(E3) Asertivitate - În acest post persoana preferă să preia inițiativa și conducerea în cadrul grupului său. Aceasta se exprimă fără ezitare și într-un mod în care poate influența acțiunile și deciziile celorlalți. Preferă să ia deciziile sau să facă parte din procesul decizional al activității sale.</p>
<p>(E4) Dinamism - În acest post persoana este energică și dorește un ritm intens și rapid de activitate. Aceasta își dorește să fie mereu ocupată sau implicată într-o activitate. Posedă resurse considerabile de energie pentru desfășurarea activității sale și obosește cu greu.</p>

<p>(E5) Entuziasm - În acest post persoana apreciază și caută în mod activ stimularea emoțională. Aceasta preferă incertitudinea și își dorește “senzații tari” în activitatea sa. În munca sa, este dispusă să-și asume riscuri în situații care pot avea urmări incerte.</p>
<p>(E6) Optimism - În acest post persoana este bine-dispusă și are o perspectivă pozitivă asupra activității sale. Aceasta apreciază glumele și râde des și cu ușurință în cadrul mediului său de lucru. Privește mereu „partea plină a paharului” în cadrul activității sale.</p>
<p>(O1) Imaginație - În acest post persoana posedă o imaginație bogată și activă. Aceasta este dispusă să se implice în activități ce presupun folosirea creativă a imaginației. Caută să ofere soluții neîncercate sau abordări originale pentru obstacolele pe care le întâlnește în munca sa.</p>
<p>(O2) Simț estetic - În acest post persoana este sensibilă față de latura artistică și estetică a activității sale. Aceasta își exprimă ideile pe care le propune în activitatea sa într-un mod artistic. Are un interes pronunțat pentru implicarea în activități ce necesită concentrarea asupra aspectelor estetice din munca sa.</p>
<p>(O3) Autoconștientizare - În acest post persoana este sensibilă și atentă la propriile emoții și sentimente. Aceasta resimte o gamă largă și intensă de stări, atât pozitive cât și negative, pe parcursul muncii sale. Acordă o mare importanță calității și intensității emoțiilor trăite de-a lungul activității sale.</p>
<p>(O4) Flexibilitate - În acest post persoana își adaptează ușor și rapid stilul de lucru la schimbările survenite în mediul său de lucru. Aceasta este interesată să fie implicată într-o gamă cât mai largă de activități profesionale. În munca sa, preferă varietatea și noutatea în dauna rutinei.</p>
<p>(O5) Viziune - În acest post persoana este curioasă și deschisă pe plan intelectual și abstract. Aceasta apreciază implicarea în dezbaterile și analiza problemelor și subiectelor complexe din cadrul activității sale. În munca sa, caută în mod activ idei și soluții inovatoare sau neconvenționale.</p>
<p>(O6) Toleranță la diversitate - În acest post persoana are un sistem de valori deschis, fără prejudecăți. Aceasta este tolerantă și receptivă la obiceiurile și convingerile diferite ale persoanelor întâlnite în cadrul activității sale. Dispusă să pună la îndoială normele sociale deja existente în mediul său de lucru.</p>
<p>(A1) Încredere - În acest post persoana acordă încredere cu ușurință altor persoane. Aceasta nu are atitudini de suspiciune sau de neîncredere față de persoanele întâlnite în activitatea sa. Consideră că acțiunile celorlalte persoane din mediul său de lucru sunt motivate la rândul lor de bune intenții.</p>
<p>(A2) Sinceritate - În acest post persoana este sinceră și directă în cadrul interacțiunilor sociale. Aceasta este dispusă să-și exprime adevăratele gânduri și sentimente față de persoanele întâlnite în activitatea sa. Preferă să joace „cu cărțile pe masă” în relație cu persoanele din mediul său de lucru.</p>
<p>(A3) Altruism - În acest post persoana oferă ajutor altor persoane în mod necondiționat. Aceasta are un interes autentic și activ pentru binele celorlalte persoane din mediul său de lucru. Are tendința să ofere sprijin altora chiar și în situațiile în care trebuie să-și pună interesele și activitățile pe plan secund.</p>

<p>(A4) Conformism - În acest post persoana este cooperantă și are o atitudine obedientă față de autoritate. Aceasta este dispusă să-și modifice comportamentul pentru a se integra în standardele și regulile impuse. Reticentă la exprimarea furiei și a propriilor nemulțumiri din activitatea sa.</p>
<p>(A5) Modestie - În acest post persoana are o atitudine modestă și este reticentă la a-și promova reușitele și abilitățile în fața celorlalți. Aceasta are tendința de se plasa pe plan secund în mediul său de lucru. Dispusă să accepte sarcini sau poziții inferioare experienței sau competențelor sale.</p>
<p>(A6) Empatie - În acest post persoana este receptivă la nevoile, problemele și emoțiile celorlalte persoane. Aceasta ia în calcul impactul deciziilor și acțiunilor sale asupra celorlalte persoane din mediul său de lucru. Dispusă să se pună în pielea persoanelor cu care lucrează pentru a le înțelege perspectiva.</p>
<p>(C1) Eficacitate - În acest post persoana se simte sigură pe sine și eficace. Aceasta este încrezătoare în propria judecată și în propriul potențial profesional. Consideră că este capabilă și pregătită pentru a-și atinge obiectivele și pentru a depăși obstacolele din activitatea sa.</p>
<p>(C2) Organizare - În acest post persoana este ordonată și atentă la detalii. Aceasta este minuțioasă și exigentă în ceea ce privește organizarea obiectelor și informațiilor din mediul său de lucru. Abordează sarcinile și activitățile sale într-un mod sistematic și metodic.</p>
<p>(C3) Responsabilitate - În acest post persoana are un simț ridicat al răspunderii față de obligațiile și sarcinile pe care și le asumă. Aceasta își respectă angajamentele și se simte responsabilă pentru munca sa. Încurajează în mod activ și aderă la sistemul de reguli existent în mediul său de lucru.</p>
<p>(C4) Ambiție - În acest post persoana este ambițioasă și muncește din greu pentru a atinge perfecțiunea în munca sa. Aceasta își stabilește, în activitatea sa, standarde de calitate foarte ridicate. Dispusă să depună efort în mod constant pentru a-și atinge obiectivele profesionale.</p>
<p>(C5) Autodisciplină - În acest post persoana este perseverentă. Aceasta are capacitatea de a-și finaliza sarcinile la timp. Își menține concentrarea și voința, chiar și atunci când sarcinile sunt plictisitoare sau obositoare, ori în dauna surselor de distragere a atenției survenite pe parcursul activității sale.</p>
<p>(C6) Planificare - În acest post persoana este prudentă și calculată. Aceasta ia o decizie doar după ce analizează informațiile disponibile și elaborează planurile de acțiune. Încearcă să anticipeze potențialele consecințe pe termen mediu și lung ale luării unei anumite decizii în cadrul activității sale.</p>
<p><i>Note:</i> in brackets are presented six facets for each personality factor; N = Neuroticism (reverse-coded); E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness</p>

Appendix 2

Items (trait descriptions) translated into English

<p>(N1) Anxiety control - In this position the person is calm and composed. He/she does not worry about the potential problems or difficulties encountered during his/her work. Throughout work, takes things as they are, without panicking or feeling nervousness or other anxiety states.</p>
<p>(N2) Anger control - In this position the person randomly gets infuriated and upset. Does not get angry when he/she encounters problematic situations during work. Does not feel offended or irritated in situations where he/she is held accountable, critiqued or confronted by other people from the work environment.</p>
<p>(N3) Resilience - In this position, the person quickly recovers after eventual failures and does not complain about past or present problems. He/she does not feel guilty for the past mistakes from his/her professional activity. Rarely feels discouraged in the face of the obstacles that appear throughout his/her work.</p>
<p>(N4) Social presence - In this position the person behaves in an uninhibited manner during social interactions. He/she feels comfortable and seldom feels shy in situations in which he/she has to perform activities in the presence of others. Easily initiates conversations with new people encountered in his/her activity.</p>
<p>(N5) Impulse control - In this position the person is resistant against his/her own momentary urges and temptations. He/she controls his/her personal emotions and frustrations that appear in his/her work. Does not act on momentary impulse, regardless of the personal emotions experienced during his/her activity.</p>
<p>(N6) Stress tolerance - In this position the person efficiently treats stressful situations. He/she adapts and remains calm in crisis and uncertain situations from his/her activity. In his/her work, he/she efficiently manages his/her own emotions, even in high stress and external pressure conditions.</p>
<p>(E1) Cordiality - In this position the person interacts with others in a warm and friendly way. He/she easily initiates close relationships with people in his/her work environment. Establishes long-term amicabilities and friendships with other people met in his/her activity.</p>
<p>(E2) Sociability - In this position the person prefers to interact with other people during his/her activity. Appreciates and actively seeks other people's company from the work environment. Develops or easily integrates in different groups, circles and professional social networks.</p>
<p>(E3) Assertiveness - In this position the person prefers to take the initiative and the leadership inside his group. Expresses himself/herself without hesitation and in a manner that can influence the actions and decisions of others. Prefers to make decisions or to be a part of the decisional process of his activity.</p>
<p>(E4) Dynamism - In this position the person is energetic and wishes for an intense and rapid activity rhythm. He/she wishes to be always busy or involved in some sort of activity. Possesses considerable energy resources for performing his/her activity and rarely gets tired.</p>

<p>(E5) Enthusiasm - In this position the person appreciates and actively seeks emotional stimulation. He/she prefers uncertainty and wants “thrills” in his/her activity. In his/her work, he/she is willing to take risks in situations that can have uncertain outcomes.</p>
<p>(E6) Optimism - In this position the person has a good mood and a positive perspective regarding his/her activity. He/she appreciates jokes and laughs easily and often in his/her work environment. Always sees “the bright side of things” throughout his/her activity.</p>
<p>(O1) Imagination - In this position the person possesses a rich and active imagination. He/she is willing to get involved in activities that involve the creative use of imagination. Seeks to offer untried solutions or original approaches to deal with the obstacles encountered during his/her work.</p>
<p>(O2) Aesthetic sense - In this position the person is sensitive toward the artistic and aesthetic side of his/her activity. Expresses the ideas that he/she proposes during the work activity in an artistic manner. Has a pronounced interest for the involvement in activities that require focus on the aesthetical aspects from work.</p>
<p>(O3) Self-awareness - In this position, the person is sensitive and receptive to his/her own emotions and feelings. He/she experiences a wide and intense range of emotional states, both positive and negative. Pays attention to the quality and intensity of the emotions felt during his/her activity.</p>
<p>(O4) Flexibility - In this position, the person easily adapts his/her work style to the changes that appear in his/her work environment. He/she is interested in being involved in a wide variety of professional activities. In his/her work, he/she prefers variety and novelty over routine.</p>
<p>(O5) Vision - In this position, the person is curious and intellectually open towards the abstract. He/she appreciates to be involved in debating and analyzing complex problems and subjects from his/her activity. In his/her work, he/she actively seeks ideas and innovative or unconventional solutions.</p>
<p>(O6) Tolerance for diversity - In this position the person has an open value system, without preconceptions. He/she is tolerant and receptive to the different habits and beliefs of people encountered in his/her activity. Willing to doubt the already existing social norms found in his/her work environment.</p>
<p>(A1) Trust - In this position the person easily trusts other people. He/she does not have suspicious or distrustful attitudes towards the people met in his/her work. Considers that the actions of other people from the work environment are in turn, motivated by good intentions.</p>
<p>(A2) Sincerity - In this position, the person is honest and frank during social interactions. Is willing to express his/her true thought and feelings towards the people encountered during his/her activity. Prefers to “play with an open hand” in the relationships with the people from his/her work environment.</p>
<p>(A3) Altruism - In this position the person offers help to other people in an unconditional manner. He/she has an authentic and active interest for the welfare of other people from his/her work environment. He/she has the tendency to offer support to other people, even in situations in which he has to put his/her own interests and activities aside.</p>

<p>(A4) Conformism - In this position the person is cooperative and has an obedient attitude towards authority. He/she is willing to modify his/her behavior in order to fit in the imposed standards and rules. Reserved in expressing anger and complaints from his/her activity.</p>
<p>(A5) Modesty - In this position the person has a humble attitude and is reserved in promoting his/her own accomplishments and abilities to others. He/she has the tendency to stay in the background of his/her work environment. Willing to accept tasks or positions that are inferior to his/her experience or competencies.</p>
<p>(A6) Empathy - In this position the person is receptive to the needs, problems and emotions of other people. He/she takes into account the impact of his/her decisions and actions on other people from his/her work environment. Willing to “step in the shoes” of the people he/she works with in order to understand their perspective.</p>
<p>(C1) Effectiveness - In this position the person feels confident and effective. He/she is confident in his/her judgment and professional potential. Considers that he/she is capable and prepared to achieve his/her objectives and to overcome the obstacles that appear during his/her activity.</p>
<p>(C2) Organization - In this position the person is orderly and attentive to details. He/she is thorough and exacting in regards to the organization of the objects and information from his/her work environment. Approaches his/her tasks and activities in a systematically and methodic manner.</p>
<p>(C3) Responsibility - In this position the person has a high sense of responsibility towards the assumed obligations and tasks. He/she respects his/her commitments and he/she feels responsible for his/her work. He/she actively encourages and adheres to the existing rules systems from his/her work environment.</p>
<p>(C4) Ambition - In this position the person is ambitious and pushes hard in order to reach perfection in his/her work. He/she establishes, in his/her activity, very high quality standards. Willing to put in constant effort in order to reach his/her professional objectives.</p>
<p>(C5) Self-discipline - In this position the person is perseverant. He/she has the capacity to finalize his/her tasks on time. He/she keeps his focus and willpower even in situations in which tasks are either boring or tiring, or despite sources of distractions that appear during his/her activity.</p>
<p>(C6) Planning - In this position, the person is prudent and calculated. He/she takes a decision only after analyzing the available information and developing action plans. In his/her activity, he/she tries to anticipate the potential medium and long term consequences regarding a certain decision.</p>
<p><i>Note:</i> in brackets are presented six facets for each personality factor; N = Neuroticism (reverse-coded); E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness</p>

RESEARCH ARTICLE

Significant career change to software development. A life-course perspective

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Abstract

The present study, based on qualitative data, investigates the significant career change through the life-course lens. Biographical interviews were conducted with people who changed their profession and the findings were characteristically reflective and subjective, foregrounding the participants' interpretations of their layers of reality. Different type of resources: individual (Agency), community (Networking), and society (Labour market) were taken into account and the endeavour enabled to capture the triggers involved in career change process. The distinction between voluntary and involuntary career change decision helps to understand the reasons for which the change is chosen. There are major differences between those who leave involuntary their desired profession and those who discover that they have a calling for the software development. Moreover, the results advocate for the importance of early vocational counselling. On the other hand, evidence of discrimination encountered by new programmers could be addressed by HR departments in the IT organizations

Keywords

Career change; software development; life course; life trajectories

Nowadays, we discuss the labour market using concepts like *fluid*, *flexible* or *limitless* (Rodrigues & Guest, 2010). The traditional career model, as defined by standardised professions or occupational trajectories, assumes one or two career changes throughout a lifetime. Usually, this model is about laterally changing jobs, not significant career changes (from an initial profession to others). In the last 25 years, scholars have considered a *boundaryless* (Arthur, 1994; Cortini, Tanucci, & Morin, 2010; Sullivan & Arthur, 2006) or *protean* career as self-directed and having a values-driven orientation (Briscoe & Hall, 2006). As Tomlinson et al. (2018) stated, flexibility in the labour market occurs at the intersection of individual agency, organisations, institutions and policies. The first theoretical model of the cyclical nature of

a career was designed in 1980 by Super and demonstrates how careers are fragmented in cycles. Later, other studies described a cycle as lasting from between two to five years (Hall & Chandler, 2005). These cycles have been explained by the fact that during their lifetime, individuals are faced with very rapid changes in technology, products and the labour market, and even with various personal circumstances that lead to professional change (2005). One recent work (Tomlinson, Baird, Berg, & Cooper, 2018) added to the agentic vision of the boundaryless and protean career concepts a wider range of actors that exert an impact on individual career decisions (institutions, organizational settings, policy).

A significant career change represents a crucial turning point in the life course of the individual, potentially generating substantial

effects on various aspects of an individual's life: romance, family, finances, and physical or emotional health. The voluntary/involuntary distinction has offered the possibility to capture opportunity structures and how these act as triggers for the decision to change a career.

The initial career choice made by individuals in their early lives (as teenagers or young adults) could be an important predictor for their future career path. An incorrect or inappropriate career orientation could culminate in an unsatisfactory working life and ultimately prompt the decision to seek a significant career change. Previous research studies have identified a strong link between the formation of occupational aspirations during adolescence (as an essential developmental task) and occupational attainment in adulthood (Basler & Kriesi, 2019). In 1909, Frank Parsons offered a model about how career decisions are made by matching persons with occupations. His theory is based on the fact that specific skills and abilities make an individual suitable for a certain profession. Even though Parsons' approach remains valid and is as such used in vocational counselling, more recent studies have emphasised the importance of context and its essential role in choosing a career (Lent & Brown, 2020).

Whenever individuals choose to pursue one life trajectory or another, be it the decision to, say, relocate to another country, enter into or dissolve a relationship, or have children or remain childless, no single factor can be solely attributed to that decision. In this sense, the analysis of the factors involved in the career change should take into account different aspects of personal life (the stage of life, significant life events), professional life (working conditions, job satisfaction) or the labour market offers. The changes in the labour market have accelerated the demand for programmers and other associated professions (business analysts, testers, information project managers, etc.). The labour market is imbalanced such that even for individuals with the same level of education, labour conditions between professions, industrial sectors or locations often differ. The software development field is very desirable.

This article thus explores significant career changes in the labour market by considering both individual drivers and opportunity structures. Given that complex life circumstances can sometimes compel one to make decisions that ignore or conflict with personal abilities or interests, the current work examined how software developers' narratives both construct and re-construct important life events and shape their change experiences. The research was conducted from a life-course perspective (Elder Jr. & Giele, 2009) and therefore took into account individual-level factors in addition to meso (organisation, community) and macro (labour market and policy) factors (Tomlinson et al., 2018). The life-course approach has been shown to produce remarkable outcomes in studies of dynamic career change (Howes & Goodman-Delahunty, 2014). Accordingly, previous studies have evaluated turning points in life that can be regarded as facilitators of personal change (Zittoun, 2009) but also career change, which, of course, strongly influences most aspects of life (family, education and/or residence). On the other hand, previous research has identified the individual drivers of career change as self-determination, control theory or career satisfaction (McGinley, 2018). Career choices are typically made based not just on one's own abilities but also on one's capacity for acquiring new abilities, perception of potential future opportunities, and consideration for the wishes of significant others. As such, this article seeks to contribute to the growing body of literature on career change by conceptualizing the career transition to the IT domain as the product of ongoing interactions between individuals and their physical and social environments, *i.e.* community, family, and peer networks, and the structural opportunities these interactions and contexts entail. The data generated for the present study were qualitative insofar as the findings were characteristically reflective and subjective, foregrounding the participants' interpretations of their reality. That said, the qualitative research methodology also permitted the determination of the main triggers of career change and associated decisions. Ultimately, the primary objective of the study was **to identify the meanings attached to career change and the main**

triggers for career change. Related research objectives were as follows:

- To explore initial career options and how career decisions are made.
- To differentiate between voluntary and involuntary career change. Employing this dichotomy can enhance understanding of both the main triggers of and decisions relating to career change.
- To identify the resources and challenges involved in the process of career change.

Career change – a work and life event

A career change is an important event in both the working life and personal or family life of individuals, and it has become increasingly frequent in recent years. Career change is defined as the transition from one job to another, which is typically in a different field from the one for which an individual originally developed skills and responsibilities (Carless & Arnup, 2011), or as the “*entry into a new occupation which requires fundamentally different skills, daily routines, and work environments from the present one*” (Feldman, 2002, p. 76).

Previous studies have sought to delineate the main predictors for career change, with the research outcomes demonstrating that youths are more mobile than older individuals: “*increased mobility is a prominent feature of the modern career and the trend appears to be amplified with successive generations*” (Lyons, Schweitzer, & Ng, 2015, p. 16). In the cited research, career mobility was measured using the rates of job and organisational change per year of career employment. Based on these measurements, the authors concluded that the differences in these rates between generational cohorts were very large, as Millennials (born between 1981 and 1996) made almost twice as many job and organisational moves per year as Generation Xers (1965–1980), almost three times as many as Boomers (1946–1964), and 4.5 times as many as Matures, *i.e.* those born before 1946. Furthermore, Generation Xers had almost twice as many job changes per year as

Boomers and 2.5 times as many as Matures. Although these generational classifications pertain mainly to Western culture, they share many similarities with Eastern and ex-communist countries. As such, generational differences with regard to occupational mobility can be considered relatively universal.

Concerning gender, men are more flexible and appear to be more willing to change careers than women (Carless & Arnup, 2011). That said, the decision to make a career change, although often voluntary and independent from work-related circumstances or conditions, can also be involuntary, particularly when job conditions or labour market forces become unfavourable or outright adverse.

To elaborate, a *voluntary* career change is often positive in that it occurs not as the result of adverse work circumstances or discontent but instead as a calling, as a choice made by individuals to improve their lives by shifting from one career to another (Dik, Sargent, & Steger, 2008; Steger, Pickering, Shin, & Dik, 2010). Taken together, identifying a new career and initiating the change process have been shown to significantly increase one’s life satisfaction (Smart & Peterson, 1997).

According to studies in the field of career change, the main reasons for *involuntarily* changing careers are low job satisfaction, burnout (Barrick & Mount, 1996) or deficient job security (Schein, 1978). Yet, structural changes in the labour market (*e.g.* high unemployment rate, low demand for certain jobs, changing demand for others professions) can also result in involuntary career change. The contemporaneous transition to a global market economy has contributed significant transformations and disruptions, with entire industries or their subsidiaries vanishing and, consequently, also the professions tied to them (especially specialised professions). More recently, a very similar effect has occurred due to digitalisation, with certain professions being either outright replaced by machines or diminishing in importance over time, according to forecasts.

Regarding the phenomenon of *voluntary* career change, the extant literature on the subject includes relatively few studies. This is

because up until the labour market became flexible, voluntary career changes rarely occurred due to the low willingness on the part of employers to hire older persons for entry-level jobs that did not require experience. Therefore, the current proliferation of voluntary career change could be explained by 'the sense of a calling' as a predictor for the intrinsic motivation of work, the efficacy of career decisions and the career level (Dik, Sargent, & Steger, 2008; Duffy, Bott, Allan, Torrey, & Dik, 2012; Steger, Pickering, Shin, & Dik, 2010; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). Further, voluntary career change may be stimulated by new work challenges, more competent leaders or better training opportunities (Rouse, 2001).

The structural opportunities – transformation of the labour market

During communist period, occupational trajectories were standardised in clear stages and consisted of two transitions: from school to the labour market, and from the labour market to retirement (Vlase & Preoteasa, 2017). The transition to a market economy introduced significant changes to the labour market and consequently to different life domains. The transformation of the economy, as in many other ex-communist countries, resulted in mass redundancies and increased demand for labour in various new fields (services, information technology and communication). At the individual level, such developments in the Romanian labour market prompted the development of new coping strategies: early retirement, migration or professional changes. At the same time, the global development of the IT field led to the emergence of new professional demands and a higher need for IT professionals.

The IT domain accelerated considerably due to both international economic conditions and national policies geared towards stimulating this field. Between 1995 and 2018, the number of employees in this domain in the European Union increased 2.87 times; in the US, the number of employees increased 2.32 times; and in Romania, the number of employees increased 3.24 times (Mas et al.,

2019). In 2003, a tax exemption for software developers was included in the Romanian Fiscal Code, with some restrictions. For example, employers had to position software development as the main business activity, and employees had to be graduates of universities with an established IT profile. Since February 2018, these restrictions have become more relaxed (e.g. programmers who are not university graduates are now permitted), while the number of employees benefiting from tax exemption has increased.

In 2017, the IT sector constituted 5.5% of Romanian GDP, which is about double that of 2012. At the same time, the number of employees in the field has increased yearly. One study (Aries Transilvania, 2017) showed that in 2016, the number of employees in the IT field in Romania was 100,000, an increase of 75% since 2011. One forecast for 2021 predicts that the number of employees in the Romanian IT industry will increase to about 125,000. Concerning the distribution of income, about 77% of IT sector revenue originates from exports (ANIS, 2018). Therefore, many Romanian companies are working as service centres for international clients. As such, Romania is competitive at the international level, particularly in attracting customers for whom projects in services or outsourcing are the primary interest.

In such a context, one in which the demand for experts in the IT field is inexorably increasing, but also one in which labour market conditions are prone to severe inequalities between professions despite similar educational and experience levels (from the viewpoint of both wages and working conditions), the emergence of the career change phenomenon in the IT area is increasingly evident. Specialised companies have been created with the express purpose of offering training and professional reorientation services to software developers, testers and business analysts, among other professionals. Training courses are typically either short or medium in duration (between one month and one year), and often the companies that deliver these courses may recommend the trainees to potential employers. So far, the number of companies in Romania providing professional reorientation services is increasing at a constant rate. Even

though this phenomenon has not been statistically well documented, the high demand for software development professionals in the IT sector and the consequent and associated increase in the number of individuals changing careers in response to this demand are readily apparent.

By the beginning of the 1990s, many claims were being made about computer science, which was described as a field of the future, while competition for computer science specialization was high. In Romania, automation and computer science universities admitted youths who excelled in mathematics and physics. Also, simultaneously, in the computer science industry, only those who had tertiary education in the field (i.e. graduates of computer science or cybernetics) had access to employment opportunities. A number of changes have occurred in the past 14 years in the field of software development after multiple state measures were launched to support the domain (e.g. tax exemptions) concurrent with the outsourcing of IT services from Western to Eastern countries. All these factors generated considerable changes in the labour market. The demand for programmers and other associated professionals (business analysts, testers and information project managers) has exponentially increased. In the absence of an adequate response from the education field, and due to out-migration of the highly skilled labour force, professional reorientation in the software development field was easily and eagerly accepted by both employees and employers. Likewise, at the international level, either by direct application or through digital employment platforms, professional reorientation has become a reputable and competitive arena for attracting talented employees, especially in the IT area.

Methods

Participants and sampling

Eleven in-depth interviews were conducted with individuals who had undergone a significant career change – namely, transitioning to an IT career. To ensure comparative value, but also to guarantee unaltered recollection on the part of participants, individuals who were in the

process of undertaking a career change or who had recently changed careers (within three years of the study) were selected for interviewing. Purposive sampling (Patton, 2002) was employed, and the main selection criteria were as follows: (1) the participant had to either be undergoing a significant career change or have undergone such a change within the prior three years; (2) the participant had to be employed as a software developer at the time of the interview. The overarching intention was to ensure a common destination profession, regardless of whether the actual trajectories towards this destination were different. The selection procedure was developed according to the snowball method, with each interviewee being asked to recommend other potential interviewees who met the above criteria. The software developers included in the sample all worked in Bucharest, Romania's capital city. Six of these developers graduated from departments in the social sciences and humanities (law, sociology, political science, marketing, psychology and education sciences), whereas the remaining five graduated from technical fields (construction, transportation, engineering and materials science). The participants ranged in age from between 24 to 40 years, and comprised two women and nine men. This gender imbalance is unsurprising, as the majority of software developers are typically male.

Instruments

Generally speaking, the study considered the ways in which participants narrated their career change process and the meanings they attached to their experiences. Towards this end, biographical in-depth interviews were conducted. The interview guide included topics such as childhood, education, family of origin, initial career orientation, decision to make a career change, the process of career change, adaptation to the new career, residence type, health status, leisure activities, family characteristics and romantic relationships. These topics were addressed within the framework of the life-course approach, which was aimed at capturing key concepts, such as linked lives, turning points, trajectories or transitions (Elder Jr. & Giele, 2009).

Data collection

The interviews, which lasted from between 40 to 120 minutes, were conducted face to face and were recorded. Various locations (e.g. coffee shops, malls, researcher's office and park) served as interview settings. A total of nine interviews were conducted by the author of the article, while the remaining two interviews were conducted by two other doctoral students. All respondents were fully informed about data protection regulations, and all signed an informed consent form before being interviewed.

Analysis

The nature of the analysis was at once thematic, inductive and deductive (Green & Thorogood, 2004; Saldana, 2011). MAXQDA12 was employed to code the interviews. The thematic analysis served to organise all the collected information (Braun & Clarke, 2006) and to identify key life-course concepts, such as life events and transitions, as well as to outline the multidimensional life trajectory for each participant. Next, meanings were extracted from the participants' narratives. In order to preserve anonymity, any information that might have exposed the participants' identities was excluded, and each participant was assigned a pseudonym.

Concerning trustworthiness in qualitative research, the article is an interpretative research and the study met the criteria of authenticity (Morrow, 2005) and *verstehen* (i.e. deep understanding) (Patton, 2002). The author of the article, who also served as the main interviewer, shared the same context and culture as those of the participants.

Findings

Four main themes were theoretically established (i.e. deducted from the life-course approach): individual resources, opportunity structures, policies and decision-making processes. Other subthemes were inductively identified. The main themes derived from the analysis of career change processes are presented below.

Table 1. *Thematic Analysis: Themes and Sub-themes*

1. Individual resources
Recruiting
Marriage/romantic relationships
Introvert/extravert
Personal development
Health problems
Ethics/values
Inspiration
Desire to learn
Agency
Job satisfaction
Abilities
Personal life/leisure
Live events (in the past)
Standard of living
Future plans
2. Opportunity structure
2.1. External support
Family of origin
Linked lives
Networking
Advice
2.2. Training system
University
Second faculty
Certifications
Training/self-learning
Foreign languages
Quality of education system
Career counselling
First career choice/high school
2.3. Organisation
Employment
Perceived discrimination
Co-workers
Challenges
Work programme
Work contract
Work from home
Work-life balance
Internship
Job search/selection
Previous experience
Social status of developer
Adaptation to new career/job
3.State support/policy
Tax facilities
Labour market policies

4. Decision to change career
Software training
Self-confidence/validation
Self-determination
The calling
Change agent
Triggers
Obstacles/difficulties in career change
Disadvantages
Regrets/negative feelings

Each individual case presented a distinct life story and occupational narrative. The life-course approach that guided the entire research process viewed each trajectory as unique and accounted for the influence of individual, family and/or structural factors. Moreover, the examination of each life story generated rich information that in turn provided a comprehensive picture of the career change processes as experienced by each participant. Graphics of life trajectories were designed to better comprehend aspects unique to each of the participants' lives. Two of these graphics are included in the analysis section.

Table 2 includes the full range of information collected about each participant.

Initial career choice

The participants spoke comprehensively about their experiences with the career change process. The process typically began in high school, where the participants received career guidance but were not provided with clear counselling nor with assistance in choosing a profession. All interviewees attended high schools with a theoretical science programme (mathematics – computer science; mathematics – physical sciences; or technological). Admission to such high schools is difficult, requiring students to demonstrate above average performance irrespective of their skills or the field in which they intend to pursue later study.

The interview data showed that the choice of university major was usually made in direct consultation with **persons vested with authority**, namely parents, peers, teachers or classmates, or as a consequence of mass-media influence. Only one participant reported

completing a vocational test online, the results of which were inconclusive and therefore did not help him make a decision. High school teachers, who are typically viewed by students as possessing authority, play a very important role in the choice of career. Viorel (24 years of age) revealed the information he had received from his high school mathematics teacher:

R: I had a math teacher who was highly rated, who told me on each occasion that we will never work anywhere, that there are no more jobs, that he doesn't know what we are going to do, that woe is on our heads.

I: That is, I mean this was the discussion about your career guidance...

R: Precisely.

I: And did you believe him?

R: I tried not to, but I think it had a rather strong impact because he was our most regarded teacher ... he had authority, being the math teacher... (Viorel).

Initial decisions concerning career choice were justified rationally, with those charged with advising high school students referring to wages or employment opportunities after graduation. In all cases included in the sample, the choice of college was made by accounting for prevailing labour market conditions (as perceived by either the students themselves or by significant persons in their life), considering the likelihood of being admitted, and, to a lesser extent, self-assessing skills and aptitudes. Additionally, self-confidence – or the lack thereof – was also considered as an important factor in choice of faculty.

One participant, Mariana, who was raised in a small town in southern Oltenia, recalled advice she had received in high school that had influenced her choice of one of two, although only after much vacillation. The source of this advice (although not clearly stated by the participant) seems to have been a teaching staff member. In Mariana's narrative, the theme of a lack of courage emerged; retrospectively, she believed that she did not have the courage to pursue admission to Cybernetics (a department within the Academy of Economic Studies [AES] Bucharest). Even after 20 years, she still regrets not opting for a technical university.

Table 2. Description of the sample

	Year of birth	High school	Education (first option)	Professional experience	Relevant factor for the career change decision	Strategies for entering the IT field	Current occupation	Current employer
Ionut	1983	Maths-CompSc	Political Science, Master's in Marketing	Journalist, editor, sales agent, call centre operator	Fell out with his girlfriend (she worked in IT)	Informal education, self-taught. No graduation certificate	Application administrator	IT and Marketing company (100 employees)
Mihai	1987	Maths-CompSc	Sociology (and Master's degree in Security Studies)	Receptionist, call centre operator, entrepreneur, sales agent in health tourism	Began learning programming for maintaining his company's website and databank	Informal education, self-taught. No graduation certificate	Software developer	Software company (100 employees)
Costin	1985	Maths-CompSc	Faculty of Construction	Sales agent for metallic roofs, quality assurance inspector for construction sites	Began managing the website of the company and he discovered he enjoys programming	Participated in a programming training course of 6 months	Software developer	IT Service Centre for an international organisation (3,000 employees)
Viorel	1994	Maths-CompSc	Faculty of Engineering and Materials' Science	Internship programme/practice in a metallurgic enterprise	His cousin recommended he should learn programming	Began a Master's Programme at the Faculty for Computer Science. He participated in a training course for programmers	Software engineer	Romanian software medium company
Alex	1993	Maths-CompSc	Faculty of Transportation	Practice/internship in the field	A faculty colleague recommended he learn programming and loaned him materials and books	Free online courses and a scholarship for a training with Google	Software developer	IT Service Centre (800 employees)
Sorin	1989	Maths-CompSc	Faculty of Law	Lawyer and notary assistant	After he failed the notary examination	The Faculty of Cybernetics	Software developer	IT Service Centre (800 employees)

Table 2. Description of the sample (continued)

	Year of birth	High school	Education (first option)	Professional experience	Relevant factor for the career change decision	Strategies for entering the IT field	Current occupation	Current employer
Cosmin	1992	Maths-CompSc	Faculty of Transport	Internship	Determination, calling to the computer field	Three months' training for learning JAVA	Software engineer	IT Service Centre (800 employees)
Mariana	1977	Maths Physics science	Faculty of Marketing, AES	Call centre operator, technical support	Opportunity at the former job	Informal training and Certification	Developer	Small Romanian software company
Vlad	1989	Maths-CompSc	Faculty of Law	Assistant at the office of a bailiff	Technologically passionate, a friend recommended he turn to IT	Online courses, JAVA certification	Software developer	IT Service Centre (2,000 employees)
Ioana	1990	Technological High school	Psychology and education sciences	Kindergarten teacher	Attempted unsuccessfully to find a job in HR. A friend recommended she turn to programming	JAVA 2 months training course	Software engineer	IT Service Centre (800 employees)
Andrei	1992	Maths-CompSc	Faculty of Transportation	Car engineer with a big company	A friend guided him to the field of programming and even taught him the main JAVA concepts	JAVA 3 months training course	Software developer	IT Service Centre (2,000 employees)

In cases where labour market conditions were considered when deciding on future university education, social and economic changes prevalent over the last few years have led to disappointment and adjustment difficulties in the chosen profession. In the 2000s, fields like Law and Construction seemed to be sectors that would ensure material welfare. However, economic crisis, digitalisation and the rapid development and prominence of the IT field have catalysed major changes in the labour market in a very short amount of time.

Thereafter, as regards faculty, I was somewhat undecided; I didn't know whether to continue on this computer science path. My mother kept nagging me that I must continue with computer science, and somehow there were some material restrictions, as well. I failed in attending the Polytechnic, and I thought, maybe pass the exam for something that was demanded then in 2003-2004, respectively, Construction. There was an enormous boom of companies, so... (Costin).

Career pathways were also linked to the preference to remain in close contact with **friends**. Living far from home frequently involves significant stress, and as such it is not uncommon for friends to attend the same university and/or department, a logical decision for young students at the time. Cosmin, for instance, gave up his initial plan to attend computer science college in order to remain in close proximity to his colleagues and hometown friends. This strategy is especially common for young people from rural or small towns who relocate to larger towns or big cities alongside their friends or colleagues. Remaining together, living together, and sharing transportation with friends can be a powerful emotional, but also instrumental, aid, as can correspondence and gifts sent from the students' families.

We were a group of friends planning to go – the three of us – to the same university, and, so to speak, I was advocating for Automation, while the others were for Road Vehicles, they said that it is much

harder [Automation college, author's note], that ... So, I didn't go there.

I.: Thus, they gained ...

R.: Yes, and so I went to (Department of) Road Vehicles, as I also had this passion for cars. I dreamed about a programming system for road vehicles – that is, for electronic systems installed in cars. More or less this was the target, so to speak. Then I began with programming, but without studying comprehensively in earnest during the college years and having an advanced level. Only after I finished the college did I start earnestly with it, and at the same time I learned I also had the master admission test, and I learned for admission... (Cosmin).

Here, it is evident that Cosmin continues to have a calling for programming, such that even though he made a different decision because of his friends, he still plans to pursue a programming career. Via the snowball selection procedure, the opportunity was presented to include in the sample two high school classmates who could speak about their common life history (Cosmin and Andrei). Cosmin was the first to decide to learn Java, which, after this had been successfully achieved, influenced Andrei, who enrolled in the same three-month training programme for Java.

The mass media plays an extremely important role in the modern world. Digitalisation helps youths to obtain information faster and more efficiently than ever before and, if applied appropriately, such information can be used to identify valuable resources critical to pursuing a future career. Vlad had already dreamt of becoming a lawyer in his childhood, when he had become fascinated with movies about lawyers, even though he never tested his abilities. Mariana spoke about how, during high school, she always followed the written press and created a shortlist of schools in which 'girls on page 5' were enrolled (in her local newspaper, an artistic picture of a beautiful girl was presented every day). Clearly, then, at least for these respondents, media information played an essential role in career decisions. In Mariana's case, during the 1990s (the period in which she

had prepared for university admission), access to information related to professions or specialties, universities and departments, and even labour market conditions was much more limited. After 2000, alongside widespread access to the Internet, the availability of information of all types increased dramatically, enabling youths to make much more informed decisions.

The involuntary path to programming

The discourse of non-technical faculty graduates is permeated by expressions of **disappointment about the profession** initially chosen. For Sorin and Vlad, both law school graduates, having failed their examination for a notary's licence was the decisive factor in guiding them towards IT. In their comments, they spoke not necessarily in terms of failure, but instead about incorrect examinations and uneven chances.

Exactly, and in that year, when I was employed for the second time at the Notary's Office, they opened this thing [the Notary's Licence examination, author's remark], and they said that absolutely anyone may enrol for it. Well, I thought, let's try my luck, but then I remained... There were six such openings at the level of Bucharest, seven openings for the entire municipality, and the candidates were all from the 'movers and shakers circle', that is, they were... Right. We were about 300 candidates for six to seven openings. I trained for the exam while I was working at the same time, and the experience was super disappointing, because instead of... I mean, there was also the written examination, but the first test was the oral examination. There were five notaries in the commission; you drew two cards and they told you the grade. It was one of the saddest experiences ever. They didn't even look at me while I talked on topic. They were talking to each other; nobody listened to me. As I

finished speaking, they were like, 'Well, thanks, have a nice day' (Sorin).

There is clearly an (over)abundance of law school graduates, making access to this particular labour market exceedingly difficult in terms of pursuing a career as a lawyer, a magistrate or a notary. Both Sorin and Vlad considered the admission examinations and selection procedures to be cumbersome and often unfair.

The narratives of those who switched from humanities to IT consistently emphasised the different statuses between the two professions, with a higher status afforded to programmers, as well as better economic and working conditions. Likewise, in terms of gaining employment, the process involved in becoming a programmer was considered to be quite reasonable. Although participants noted that significant efforts had to be made to learn and prepare for this new career, they also regarded the selection procedure to be straightforward. At the same time, their successful experiences pursuing this career offered some hope that they could also inspire others to benefit from these experiences.

I have a better quality of life, and the fact that I shifted from humanities, where I spent a lot of time, to the IT area shows that it is possible, and it should be... I mean, what I did should also inspire others to take this step, and no longer waste time in humanities, where there's no future, actually.

No, I wouldn't advise anyone to pass the political science examination for several reasons. 1. No people studying political science are employed in management positions. 2. You cannot apply what is taught in political science. Actually, political science pertains to philosophy, the combination of philosophy with history, so it's in fact a specialty like philosophy, a faculty... (Ionuț).

In some cases, while working in their first job (not an IT area), the interviewees were assigned additional tasks in the field of programming (they were asked to maintain some apps or web pages). This was the first

step for them in understanding that they possessed obvious skills in the field and that they could realistically pursue a career in IT. Doing so was further described as a smooth transition to the IT profession and also an opportunity to acquire additional skills or develop latent talents.

Yes, there was a programme for tourists, where they were asked to write about their needs, and depending on that, to find out about prices. As there was nobody that could do this, I thought, let me try to write a script, that super easy stuff in Java script, and rather simple. I mean easy, but it was super easy, but at the time for me ... I mean, see, here I was just learning this thing and I realised I liked it a lot, I mean to do this, so that for a couple of days I paid attention to no one, I was caught in that thing (Mihai).

Such practical experience permitted the participants to discover their skills and to make the decision to transition to programming. To better understand the career paths of the participants, life trajectory schemes were devised along four dimensions: education, employment (with details on occupation, employer, type of contract and months of employment), residence, family (couples) and health. Here, the life trajectory of Ionuț, a political science graduate, is introduced. As the life trajectory scheme is by nature very visual, a clear image of life events and transitions emerges, as do links with significant others in personal and professional life. For Ionuț, the occupational trajectory comprises a long line of career changes, with unsafe, skilled or unskilled jobs of short duration (from a few weeks to a few months).

Ionuț's life trajectory (Table 3) illustrates the intersection of multiple life domains, as well as how his very uncertain career path has interfered with family, romantic relationships and educational pursuits.

While Ionuț was employed as a journalist, he was hospitalised, realising only after his discharge that he did not have the health insurance to pay for it. His difficult health condition made him acutely aware of his urgent need for health insurance, and so he decided to switch to a more decent job, one

that offered stability and security. In his case, the transition to a new career felt natural due to his innate programming skills. He had always been interested in computers and phone applications.

Ionuț's career decision was ultimately made after breaking up with his long-time girlfriend, who had also transitioned to the same type of career. In his discourse, Ionuț attributed wage differences to ending his relationship. This, combined with his chronic **health issue** and lack of medical insurance were reason enough to commit to changing his career.

Precisely, and it was purely about insecurity, instability, and this permanent fear. As of the moment I got sick, I mean at the time when the symptoms showed and I was hospitalised, and I was compelled to pay for each hospitalisation day... (Ionuț).

The humanities and social sciences graduates decided to switch to the IT area in order to have a better life, especially as they all already possessed skills in the programming area. They did not consider the transition process to be difficult, crediting the openness of the IT companies to absorbing and training talented resources in the required skills for their easy career shift. The primary challenge they currently face is sufficiently advancing their careers and obtaining the requisite formal certifications needed to be fully integrated into the industry.

The voluntary path to programming

In this category, participants who made a voluntary decision to change careers to IT without having faced any negative circumstances at their previous jobs were included. These participants made the decision to switch professions early on, either during their studies, as they came to understand that IT was their preferred path, or immediately after obtaining their first job. Although they had no negative experiences in their first profession, they knew that working conditions for programmers and the increasing demand for programmers in the labour market were more appealing than the benefits of remaining in their original profession.

Andrei's trajectory contained two work transitions, with two jobs. Although he was very young at the time of the interview (24 years old), he had already declared that he had found his chosen career path. His personal history led him to be a responsible person at a young age. As the oldest of three siblings, and after losing his mother (in his last year of high school), Andrei assumed responsibility for educating his younger brother (16 years old) and sister (8 years old). Andrei also helped his father on the family farm and at local markets, where they sold agricultural produce.

From his educational and employment paths, it is clear that Andrei demonstrated a high level of agency and self-confidence, and that he chose a career very soon after graduating from university (Table 4).

Andrei's computer skills had been developing since high school, when he had participated in computer science school contests. He talked about his new career in terms of having a 'fascination' for IT, but he also mentioned the risk of change.

Being in contact with software development, I don't know how, I got fascinated completely and knowing which were the opportunities in the field, of course, the material side might play the role of promoter, but no matter, as at the time I had no idea about wages in the field. It was all of them together that made me make this risky decision to resign (Andrei).

Andrei was assisted in his career decision by a university peer who had already begun his own change process, learning Java and participating in formal training. As a result of his successful decision, Andrei became an important change agent, one who helped many of his peers and also his relatives to enter the same career:

One is my brother, who is one year younger than me. He has also worked for some time now. Nine months. I also helped my cousin, a friend, and my girlfriend, who has finished psychology and trains a lot, as well (Andrei).

Having mathematical skills and an engineering background made their transition to a different career easier and conferred them

with the characteristic of higher employability. After completing an internship programme, they all received good offers at top companies, especially international service centres.

For many of them, their previous experiences with their peers or friends helped them make a smooth transition with instrumental means, in the form of information exchange (about training, various handbooks, internships and job openings) and recommendations or emotional support. It is evident from the discourses that even those whose career could be considered very successful asked for advice, thereby highlighting the differences among vocations, skills and resources offered in the IT industry.

If the respective someone decides to make this career change, he or she must like it because if it's only based on the material aspect, or because he or she disliked what they did before, they might come to hate the decision and, even worse, become demoralised. I, for instance, would like to change what I'm doing and try programming, but I don't like programming... (Cosmin).

This type of change illustrates, to a significant degree, situations in which young people initially choose inappropriate career orientations. Even though they possessed strong computer skills during high school, they nonetheless chose different careers, for various reasons.

The career change process – Resources and adaptation challenges

In this study, the decision to change careers emerged as a result of evaluating one's skills in the sphere of programming but also due to the recognition of opportunities in the labour market. For those who voluntarily changed careers, the narrative was thematically collective, as they practised solidarity and helped each other as a group to improve their chances for success (not only the participants in the present study but also others in the same situation).

Table 4. Respondent A's life trajectory

	1992	1999–2006	2007–2011	2011	2012	2013	2014	2015	2016	2017	2018
Andrei											
Education	Birth	Elementary school and gymnasium	High school	Polytechnic University - Automotive				Engineering University - Faculty of Electronics Master's degree	Software development training (4 months)		Formal software development trainings and certifications
Occupation			Household production (family farm)								
Employer								Engineer	Software developer intern		Software developer
Type of contract								Automotive company		International IT company	
Month worked								Contract	Temporary		Permanent
Residence		Countryside			Bucharest			8	4		Ongoing contract (20 months)
Family		Two siblings, lives in family multigenerational house		Mother's death	Provided support to the younger siblings			Romantic relationship		Dwelling bought	Marriage

When the steps taken to become programmers are considered, different elements arise. As can be seen from Table 1, most had learned programming on their own, either from books or online by attending informal courses.

Two of the participants decided to attend a formal programme. Sorin, a law school graduate, enrolled in the Faculty of Cybernetics, Statistics and Informatics, and graduated. During his studies, he found employment as a software tester, and he subsequently changed his career to software development. Viorel, a recent metallurgical engineering graduate, was admitted to the masters' programme at the Faculty for Computer Science but, during his first year, he dropped out. He was already employed as a software developer, and it was very difficult to balance school and a full-time job, so Viorel interrupted his courses for an unspecified period of time. Therefore, all of the respondents were first employed as software developers or engineers (job title) in the absence of any formal certification. In their discourses, some of them talked about perceived discrimination from their co-workers (computer science graduates). To mitigate or circumvent the effects of an 'inferiority complex', the participants employed a coping strategy with the intention of completing formal training. Mihai, a sociology graduate, discussed how he felt that he lacked the fundamentals of computer science, and accordingly started to learn and better understand basic computer concepts:

How does the actual computer work, what the hell is memory, what does it do... I don't know, what are the bytes, what is the binary system and so on, nah, these are things that I am still working on, I still build the foundation' (Mihai).

On the other hand, another participant, a political sciences graduate, described his experiences and relations with his co-workers in terms of 'contempt' and a lack of empathy:

They look with contempt, and the fact that they have access to greater financial resources, they never faced serious social

problems, they did not have to fight, they do not know what a man coming from a humanistic area is going through, they do not. He (a man from a humanistic area) does not find a job, he has a low salary, he does not have a contract. That makes them happier, makes them more superficial, makes them more detached, not all but... (Ionut).

Ionut's perception of his co-workers as different, as having a lower level of tolerance and understanding, placed him in an unequal relationship, one that could potentially produce tension and conflict in his professional relationships.

Among the engineers included in the sample, only Viorel talked about these uncomfortable feelings in relation to his more qualified co-workers. He experienced this situation during his first internship programme, where all of his colleagues were graduates of computer science. He felt that he did not know as much as his colleagues did, and he preferred not to ask for help in order not to disturb them or waste their time. After a few months, he decided to resign; and after a period of learning, he applied for, and found, another job.

The perceived discrimination and sense of an inferiority complex could be harmful to job satisfaction and consequently pose obstacles not only to career development but also to performance in the workplace (Wallace, Pichler, & Bernadette, 2007).

Discussions

Making a career change towards software development professions is an intricate and complex process, and it is therefore futile to attempt to discuss such a transition in terms of homogenous career paths. Those who chose this new career were all very different in their own ways, e.g. previous profession, gender and age. More precisely, the participants in this study made the decision to change careers at different ages and at different life stages. As such, the current paper highlighted the importance of the career change process in light and from the perspective of individual and societal points of view.

The first research objective was to explore participants' initial career options. The results of the analysis in this regard demonstrated the conspicuous absence of professional guidance or counselling for high school youths at a time when such guidance would be most crucial (*i.e.* prior to university enrolment or vocational training). The participants' initial choices were made mainly without awareness of their own skills. During high school, they were guided by either the teaching staff or their parents. The lack of information regarding university domains and the labour market, in addition to deficient self-knowledge, culminated in inappropriate career choices, at least initially. Such choices were often made based on ultimately self-defeating or irrelevant factors, such as the difficulty of admission examinations or the desire to remain close to friends. In the Romanian educational system, vocational and career counselling or facilitation are virtually absent. 'The *calling*' towards the software engineer profession was clear in the case of those who already showed a passion for computer science in high school but who ultimately abandoned computer science, for various reasons. The narratives of these participants were replete with feelings of regret over initially opting for different professions and, already during their university studies, the commitment to learn programming and apply for a career in this sector.

For the second research objective, the voluntary/involuntary distinction was instrumentally used to differentiate between these two seemingly similar paths. The results showed that differences existed between the career patterns of technical graduates and those who graduated in non-IT technical fields. Graduates in the humanities, although correctly choosing their field in accordance with their abilities and skills, were disappointed by subsequent job offers in the labour market. Although the work content was not unsatisfactory, their working conditions were inadequate (salary, type of contract, job security, number of hours worked). In the case of technical graduates, the situation was decidedly different. These graduates entered a profession surrounded by and overflowing with others with similar technical skills, and as

such they were confronted by fierce competition on the one hand, and by obsolescence on the other. Consequently, they re-assessed their technical skills and made the decision to join industries in which these skills would be more appreciated. Some of these individuals were fortunate enough to make this decision early on during their undergraduate studies or immediately after graduation.

The life-course approach permitted a comprehensive depiction of the career change process at the individual level and from the perspective of community or society. From a theoretical and methodological point of view, the article contributes to the career change literature by showing how individuals, regardless of their abilities, are influenced by networks or structural opportunities.

Individual resources involved in this type of change are agency, the capacity to identify and acquire proper learning resources, and substantive programming and self-learning efforts. Additionally, networking is an important resource, especially for people in technical areas who support each other instrumentally in order to locate learning resources or job offers or internships.

Community and society are another strong point in decision making. The labour market is open to cultivating talent in software development via internships or training programmes (short duration programmes or special reorientation programmes).

Implications

The findings of the present study can be applied both theoretically and practically, and can additionally serve as the foundation for making educational policy recommendations. From a theoretical point of view, the main contribution of the current study are the significant insights it generated into the career change process via the methodological lens of the life-course approach. The results of this study are in line with those obtained by prior research, which emphasised the role of context in career flexibility (Tomlinson et al., 2018). Specifically, both labour market opportunities and fiscal capabilities offered by the state weighed heavily in the decision by

interviewees to make a significant career change to IT.

Career guidance is a relatively new field in Romania, and it has as such received relatively little scholarly scrutiny. The analysis of the interviews demonstrated, first, the absence of professional guidance or counselling for youths in high school. It is therefore recommended that such guidance, especially geared towards preparing for a future career, be included as part of educational policy, with dedicated services and faculty members in schools and universities.

Also, the discrimination experienced by new programmers from co-workers with computer science background constitutes a stressor that could in turn result in counterproductive psychological and physical distress. Consequently, HR specialists should work to eliminate workplace discrimination by enacting a more tolerant and welcoming work environment.

On the other hand, digitalisation has created new, precarious jobs (such as platform workers) with very low requirements and direct effects on workers' personal lives. This new workforce demands special attention in regard to their work contracts, working conditions and wages.

The continuous and rapidly accelerating transformation of the labour market due primarily to digitalisation is an essential research issue. Employees working in skilled jobs as programmers or in other associated occupations have a high standard of living, with high wages and good working conditions. However, when major changes occur in the field of software development, questions frequently arise about whether such careers are stable in the long term, especially for those who transition to the field with incomplete qualifications. Currently, the Romanian IT industry is dominated by cross-border services (such as outsourcing) to the detriment of original, innovative software production. For the foreseeable future, there is the risk that, if the costs of such outsourced services in Romania increase, they will be relocated elsewhere to exploit cheaper labour forces, such as in Asia.

Limitations and future research

The sampling method used in the present research had some limitations via the network effect (the potential interconnections among participants). That said, the life-course approach benefited from this type of selection by enhancing the opportunity to depict and thereby understand how the lives of participants were linked personally or professionally. On the other hand, purposive sampling allowed for the selection of participants who had common characteristics but also exhibited differential attributes conducive to the identification of patterns. Generally speaking, this method is appropriate for studies in which the unit of analysis are concepts as defined by participants. In the present research, this translated into the capacity to effectively design the life trajectories of individuals. Additionally, the interview methodology employed was effective insofar as unstructured interviews generated in-depth information, while the number of interviewees (11) was appropriate to the research objective and type of analysis (Morse, 2000).

As all respondents were from Bucharest, career change processes as they play out in the IT industry in other important cities elsewhere in Romania as well as abroad were not considered. Future research should thus attempt to address this limitation. In addition, the long-term effects of a significant career change could be assessed in further research by employing a quantitative and qualitative longitudinal design, one that could evaluate the effects of multiple factors on career decisions and/or skills development.

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RESEARCH ARTICLE

The Role of Work Alienation in the Relationship Between Perceived Organizational Justice and Counterproductive Work Behaviors

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Abstract

Previous studies supported the relationship between the lack of perceived organizational justice and counterproductive behaviors at work, and in the current research the emphasis is on the explanatory mechanism of alienation. This study aims to investigate whether work alienation could be a potential mediator in the relationship between the two constructs. In an attempt to research an explanatory mechanism that is less addressed in the literature, a non-experimental cross-sectional study was conducted, based on a sample of 145 participants from different industries. The statistical analysis' results indicated that the lack of perceived organizational justice is a significant predictor of counterproductive behavior. Furthermore, workplace alienation has completely mediated the relationship between the lack of perceived organizational justice and employees' counterproductive behaviors. These findings reiterate the role and importance of employees' perceptions of organizational justice in the emergence and possible reduction of counterproductive behaviors that are detrimental to both the organization and individuals. The data obtained also supported a possible explanatory mechanism of their relationship.

Keywords

perceived organizational justice, counterproductive behaviors, work alienation

This study addresses the understudied concept of work alienation in the relationship between organizational justice and counterproductive work behaviors. This work is original in terms of considering together in an explanatory model of counterproductive work behaviors, the concepts of organizational justice and work alienation.

Numerous studies in the literature support a relationship between perceived organizational justice and counterproductive behaviors at work (Chernyak-Hai & Tziner, 2014; Dalal, 2005; Fox et al., 2001). There are several explanatory mechanisms (e.g.,

burnout; Wu et al.; 2016) regarding the effect of the perceived organizational justice on counterproductive behaviors at work. One of these possible explanatory mechanisms is the less studied concept of workplace alienation (Ceylan & Sulu, 2011; Jesús Suárez-Mendoza & Zoghbi-Manrique-de-Lara, 2008; Nair & Vohra, 2009). Although researchers have repeatedly proposed, as a criticism of the construct, that alienation is the reverse of involvement in work, no significant negative correlation between these two constructs was found in a meta-analysis conducted by Chiaburu and his peers (2014), there was also

a considerable difference between job satisfaction and work alienation, and, in general, the two constructs can be easily distinguished.

According to Nair and Vohra (2009), other possible causes that led to a relative lack of attention to the alienation concept in the organizational field studies are its excessive use in the sociological literature, an aversion to the negative tone of the construct, a conceptual confusion with other terms and a poor operationalization and measurement of the construct.

Based on these observations, one of this paper's goals is to examine the relationship between perceived organizational justice and its effect on counterproductive behaviors, and also to investigate the mediating effect of work alienation.

Theoretical Framework

Counterproductive work behaviors. Every year, counterproductive work behaviors and their consequences lead to excessive costs for organizations and companies around the world. The estimated economic costs for deviant behaviors such as theft, absenteeism or violence varies by source, but usually reaches billions of dollars (Bennet & Robinson, 2000) and their effects are detrimental to both the employer and the employee (Khan et al., 2013).

In the recent years, there has been a growing interest in organizational research regarding counterproductive behaviors at work, such as aggressiveness, interpersonal conflicts, sabotage and theft. The basis for these behaviors is the damage to the organization by directly affecting its functioning or property or by harming employees in a way that will reduce their effectiveness (Fox et al., 2001). A large amount of research has been conducted to discover the external (e.g., perceived justice, job satisfaction, organizational commitment/engagement) and internal antecedents (e.g., personality characteristics: conscientiousness, positive affectivity and negative affectivity) of counterproductive behaviors (Dalal, 2005; Reflector et al., 2006).

The relationship between organizational justice and counterproductive behaviors

One of the most influential conceptual paradigms used to understand workplace behaviors and that also made it possible to study the relationship between perceived organizational justice and counterproductive behavior possible is Social Exchange Theory (Cropanzano & Mitchell, 2005). There are several variations for social exchange, but organizational models have some common features: initial treatment to an individual, the emergence of both attitudinal and behavioral responses, and the formation of relationships (Cropanzano et al., 2017). Based on this theory, numerous studies claim that the employees' responses to unfair treatment of the organization take the form of counterproductive behaviors (Wu et al., 2016). The above-mentioned authors' statements were reiterated by Colquitt and his collaborators (2013) who indicated that the theory of social exchange was most used in examining reactions to the perceived justice.

Two meta-analyses conducted by Cohen-Charash and Spector (2001) and Colquitt et al. (2001) identified that organizational justice is an important antecedent for organizational commitment, job satisfaction and organizational civic behavior among employees. At the same time, it is inferred that the lack of perceived justice produces counterproductive behaviors and negative results.

In line with the above, the relationship between organizational justice and counterproductive work behaviors has been observed in a number of other studies. One of these studies is the one carried out by Monanu and his colleagues (2015) whose results supported the hypothesis that the dimensions of organizational justice had a significant impact on the dimensions of counterproductive behaviors in the workplace. At the same time, perceived interactional justice scores were negatively correlated with counterproductive behaviors in the workplace (Le Roy et al., 2012), in a study that specifically investigated the dimension of interactional justice and its effect on

counterproductive behaviors, mediated by the role of negative emotions.

Moreover, Fox and its collaborators (2001) also state that „Adams' Equity Theory and empirical work (1963) suggest that inequity (injustice) motivates people to have adaptive responses in a variety of ways, both cognitive and behavioral” (p. 294). The results of their study argued that workplace stressors, including perceived injustice, are linked to both negative emotions and counterproductive behaviors.

Based on the arguments presented, the first hypothesis states:

H1: Employees' perception of organizational justice will be negatively associated with counterproductive behaviors, as such, lack of perceived justice determines a higher occurrence of counterproductive behaviors.

The mediating effect of alienation in the workplace.

Fox and his colleagues (2001) investigated the lack of perceived justice as a stressor in the workplace, based on numerous comparisons between work-related stress and organizational justice as explanations of counterproductive organizational behavior, including the roles of emotional responses and affective dispositions. The authors have reached a unifying framework for understanding counterproductive behaviors that incorporate constraints, conflict, perceived justice, control (autonomy), emotional responses and affective dispositions as antecedents of distinct categories of behavioral responses. The data also showed that negative emotions acted as an explanatory mechanism by mediating the relationships between workplace stressors and counterproductive behaviors. In the same register, that of explanatory mechanisms, the results of another study carried out by Wu and his colleagues (2016) supported the phenomenon of burnout as a mediator of the relationship between perceived organizational injustice and counterproductive behaviors, assuming that the premise that a low level of perceived organizational justice can lead to stress-related issues such as burnout and counterproductive behaviors. The results of their research supported moral identity as a moderator of the relationship between burnout and the level of perceived organizational justice.

The current research aims to study alienation as an explanatory mechanism of the relationship between the lack of perceived organizational justice and counterproductive behaviors.

From a historical point of view, the concept of work alienation has its origin in Marx's writings. He argued that creative work is a basic aspect of human nature and that this "need" was most fully satisfied in the work activity (Mottaz, 1981). The roots of the concept are highlighted in Seeman's alienation model (1983), a prominent author in the study of alienation, who treats its measurement from a multidimensional perspective. Work alienation has also been treated as a state of dissociation (a cognitive sense of separation) in relation to another element in the environment (Kanungo, 1979) and psychological disengagement from the task (Banai & Reisel, 2007).

According to Seeman (1991) most of the studies related to alienation contain a certain concept of "discrepancy". Applied in the workplace, this discrepancy usually takes the form of a gap between perceptions of the objective work situation and certain individual concerns such as needs, values, ideals, desires or expectations. The concept of alienation has been approached in literature in one form or another, but in the past, it has often been found under other names. This is indicated, for example, by the prominence of concepts and measures found in the literature, which are closely /related to the sub-dimensions of alienation (e.g., ambiguity, social isolation at work).

It was found that alienation was measured in a considerable number of different ways. The meaning and measurement of work alienation is problematic and ambiguous. The ambiguity surrounding the concept of alienation is rooted in a number of factors. Firstly, the concept has been treated on various occasions as one-dimensional or multidimensional, and in research so far there is no consensus on the definition and operationalization of the construct (Chiaburu et al., 2014; Nair & Vohra, 2009). In the current research, the concept of alienation is seen and measured through the conceptualization of Nair and Vohra's theory (2009), which observed the notion of

estrangement or separation as a common theme in the concept of alienation. Based on this observation, the authors argued that "estrangement or disconnection from work, context or self" is an operational definition of work alienation. The new scale proposed by them was designed to measure alienation, especially at the workplace, and help detect and remedy employee alienation.

Regarding the concept of alienation, addressed in the current research, the data obtained by Ceylan and Sulu (2011) indicated that work alienation was influenced by the dimensions of organizational injustice. A study by Jesús and Zoghbi (2008) also concluded that work alienation acts as an explanatory mechanism between perceptions of the concept of person-organization fit and the degree to which employees are prone to retaliation by decreasing organizational citizenship behaviors. Following these results, the authors propose alienation as a trigger mechanism of retributive behaviors depending on the perceived organizational justice. It is important to note that there is a negative association between the concept of organizational citizenship behaviors and counterproductive behaviors (Dalal, 2005). On a note of concordance, Nair and Vohra (2010) propose, as future directions, research into the link between work alienation and outcomes such as deviance at work, and focusing on exploring the consequences of alienation.

Corroborating the previously presented evidence, the present study predicts the effect of alienation as an explanatory mechanism in the relationship between the lack of perceived organizational justice and counterproductive behaviors. Based on the existence of the various explanatory mechanisms, some of them mentioned above, and their inability to fully explain the relationship, we expect that the direct effect of the antecedent on the dependent variable will remain significant with the introduction of the mediator in the equation. Thus, the second hypothesis of the study is formulated.

H2: Work alienation will partially mediate the relationship between perceived organizational justice and counterproductive behavior.

Method

The study is based on a non-experimental research model. The analyzed variables were organizational justice as an independent variable, counterproductive work behaviors as a dependent variable and work alienation – the presumed mediating variable. Due to the inability to control or manipulate the independent variable, the research design was cross-sectional.

Procedure

The data was collected through a Google form that was distributed online on social networks from 26 April to 12 May 2020. Participants were informed about the study and the conditions of inclusion (the respondent should have a job), about the confidentiality of the data provided and about the possibility of withdrawing at any time. Participation was voluntary and anonymous and no personal data was required. No incentives were used.

Participants

To determine the sample size for mediation analysis, power analysis was performed using G * Power (Faul et al., 2009). The analysis was based on the multiple linear regression that will be used for this study. With an average effect size of .15, alpha of .05, a standard power level of .80 and a total of 2 predictors, the power analysis' results showed that a minimum of 68 participants were needed to achieve an adequate power level for this study. Following the preliminary data analysis of the data, cases with missing values or identified as extreme values were excluded. The final sample consisted of 145 people.

The sample consisted of 145 employees from private (58.6%) and public (41.4%) institutions, from various sectors of activity. Respondents were both male (21.4%) and female (78.6%), aged between 20 and 64 ($M=35.14$; $SD=10.71$). Of these, 85.5% have a university degree and 14.5% have only secondary education. The length of the working period at the participants' current job varies as follows: less than 1 year (19.3%), between 1-5 years (41.4%), between 5-10 years (11.7%) and over 10 years (27.6%).

Regarding the size of the organization, 19.3% of them work in a micro-organization (1-9 employees), 17.2% in a small organization (10-49 employees), 35.2% in a medium organization (50-249 employees) and 28.3% in a large organization (over 250 employees). The work schedule is part-time (12.4%) or full-time (87.6%).

Table 1 shows the demographic information of the sample. Before actually testing the hypotheses, the variables were subjected to a preliminary analysis. Data was complete and no missing values were identified. Scores considered extreme values were eliminated, resulting in a sample of 145 participants.

Table 1. *Descriptive statistics for demographic variable*

Variables	N	Percent (%)
Age	M = 35.14	SD = 10.71
Gender		
Male	31	21.4%
Female	114	78.6%
Education		
High school	21	14.5%
University/College	124	85.5%
Work sector		
Public Sector	60	41.4%
Private Sector	85	58.6%
Organization Size		
Micro	28	19.3%
Small	25	17.2%
Medium	51	35.2%
Large	41	28.3%
Work schedule		
Part-time	18	12.4%
Full-time	127	87.6%
Length of current employment		
0-1 years	28	19.3%
1-5 years	60	41.4%
5-10 years	17	11.7%
+10 years	40	27.6%

Note: *M* = Mean; *SD* = Standard deviation; *N* = 145

Instruments

Counterproductive work behaviors. Counterproductive behaviors at work were measured using the Counterproductive Work Behavior Checklist (CWB-C) 32-item version (Spector et al., 2006), translated into

Romanian by Coralia Sulea and Dragoş Iliescu and contains 32 items ("Purposely wasted your employer's materials/supplies."; "You stole something that belonged to your employer."; "You did not follow the instructions intentionally."), measured on a 5-point Likert scale (1 = Never, 2 = Once or

twice a year, 3 = Once or twice a month, 4 = Once or twice per week, 5 = Daily). The Cronbach's Alpha coefficient of 0.76.

Perceived organizational justice.

Perceived organizational justice was measured using the Organizational Justice Scale (ORGJUST) (Colquitt, 2001) translated into Romanian by Coralia Sulea. It contains 20 items ("Have you been able to express your views and feelings during these procedures?"; "Does your outcome reflect the effort you have put into your work?"; "Has he/she treated you in a polite manner?"), measured on a 5-point Likert scale ranging from 1 = „To a small extent” to 5 = „To a very large extent”. The scale had a high level of internal consistency, as determined by the Cronbach's Alpha coefficient of 0.93.

Work alienation. Work alienation was measured using the Work Alienation Questionnaire (Nair & Vohra, 2009), translated into Romanian in this study. It contains 8 items ("I do not enjoy my work"; "At work, I feel estranged/disconnected from myself."; "I do not feel connected to the events in my workplace."; "Over the years I have become disillusioned about my work."), measured on a 7-point Likert scale ranging

from 1 = „Total disagreement” to 7 = „Total agreement”. The scale had a high level of internal consistency, as determined by the Cronbach's Alpha coefficient of 0.88.

Results

All data were analyzed using SPSS 24. Initially, descriptive statistics were obtained for all variables included in the study.

In order to test the distribution for normality and multicollinearity, a multiple regression analysis was performed. The analysis of the tolerance index (.87) and the VIF coefficient (1.14) indicated values within the normal limits, not indicating a multicollinearity problem. For normality, the distribution of residual values was analyzed. There was an independence of residual values, indicated by the Durbin-Watson value (1.602). There was also homoscedasticity assessed by visual inspection of the Scatter/Dot graph consisting of studentized residuals values (Y axis) and unstandardized predicted values (X axis). Table 2 shows the means, standard deviations and correlations for all three variables.

Table 2. *Inter-scale correlations*

	M	SD	1	2
1 Perceived organizational justice	3.77	.36		
2 Work alienation	2.32	.50	-.349**	
3 Counterproductive work behaviors	1.31	.27	-.282**	.44**

Note: M = Mean; SD = Standard deviation; N = 145. * $p < .05$, ** $p < .001$.

The correlations between the variables have small and moderate values, all statistically significant. There is a small negative correlation between perceived organizational justice and counterproductive behaviors ($r = -.28$; $p < .001$), i.e., the lack of perceived justice at work is associated with the emergence of counterproductive behaviors. At the same time, perceived organizational justice is negatively associated with alienation ($r = -.34$; $p < .001$), which means that employees who perceive higher levels of lack

of justice are more likely to experience high levels of alienation. There is also a statistically significant positive correlation between work alienation and counterproductive behaviors ($r = .44$, $p < .001$), which means that an increase in work alienation is associated with a higher level of counterproductive behaviors.

The hypotheses were tested using PROCESS v3.5. The research model examined the effect of the lack of perceived organizational justice on counterproductive behaviors through work alienation as an

explanatory mechanism. This program runs multiple regression analyzes providing information about the total effect, directly and indirectly. The advantage of this software, compared to the algorithm proposed by Baron & Kenny (1986), is a greater statistical power and indications of the statistical significance of the indirect effect, using the bootstrap method.

The first hypothesis (H1: Employees' perception of organizational justice will be negatively associated with counterproductive behaviors, as such, lack of perceived justice determines a higher occurrence of counterproductive behaviors) corresponds to the total effect. The results of the regression analysis displayed by PROCESS indicates that the lack of perceived organizational justice is a significant predictor of counterproductive behaviors ($\beta = -.28, p < .001$). Perceived organizational justice represents 8% of the variance of counterproductive behaviors ($R^2 = .08, p < .001$). Perceived organizational justice is also a significant predictor of work alienation at work ($\beta = -.34, p < .001$), explaining 12% of its variance ($R^2 = .12, p < .001$).

A final regression analysis presents both the relationship between work alienation and

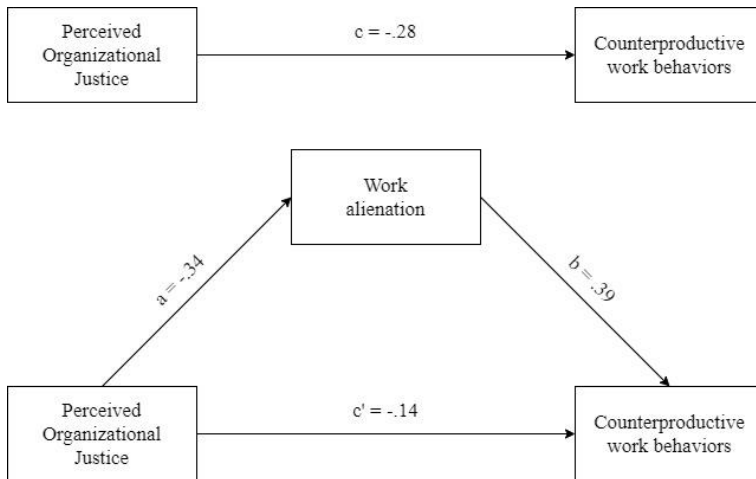
counterproductive behaviors and the direct effect of the mediation relationship. The results indicate that work alienation is a predictor of counterproductive behaviors ($\beta = .39, p < .001$). Together with the lack of perceived organizational justice, alienation at work explains 21% of the variance of counterproductive behaviors ($R^2 = .21, p < .001$).

The detailed results and coefficients for these variables, as well as the results of the mediation analysis that test the second hypothesis (H2: *Work alienation will partially mediate the relationship between perceived organizational justice and counterproductive behavior*) are presented in Table 3. The results of the direct effect show that the relationship between perceived organizational justice and counterproductive behavior has become statistically insignificant when controlling for work alienation ($\beta = -.14, p > .05$). The analysis of the indirect effect, i.e. the effect of the lack of perceived justice on counterproductive behaviors through work alienation, showed that zero was not within the confidence interval, suggesting a statistically significant indirect effect. Thus, it is indicated the existence of a total mediation.

Table 3. *Total, direct and indirect effect of perceived organizational justice on counterproductive behaviors*

	Coefficient β	Standard deviation/SE	R ²	CI95%
Total effect	-.28***	.05	.08***	
Direct effect	-.14	.05		
Indirect effect	-.13	.05		[-.24, -.05]

Note: $p > .05$, * $p < .05$, ** $p < .01$, *** $p < .001$



Note: Reported values correspond to standardized coefficients (); a - effect of perceived organizational justice on work alienation; b - effect of work alienation on counterproductive work behaviours; c - total effect; c' - direct effect

Figure 1. Final Research Model

Discussion

The current study aimed to investigate the extent to which the lack of perceived organizational justice is associated with counterproductive behaviors and to test whether work alienation mediates this relationship. The results indicated that the lack of perceived organizational justice is a significant predictor of counterproductive behaviors, in line with the results previously obtained by other authors in the organizational literature (Cohen-Charash & Spector, 2001; Colquitt & Rodell, 2011; Le Roy et al., 2012).

These results can be explained from the perspective of Social Exchange Theory and Equity Theory (Cropanzano & Mitchell, 2005; Fox et al., 2001). The contribution of the current study was to treat work alienation as an attitudinal response to exchanges and unfairness in the organization.

Summarizing the model, the lack of perceived organizational justice makes employees more prone to feel a lack of fairness and determines the appearance of a series of adaptive responses, both cognitive and emotional. Thus, the employee, in response to the perceived stimulus, through the prism of those felt cognitively and emotionally, will engage/be involved in a series of counterproductive behaviors.

The second hypothesis was confirmed, the data indicated a total mediation in the relationship between the lack of perceived justice, work alienation and counterproductive behaviors. According to these results, work alienation is a mechanism by which the lack of perceived justice exerts its effect on counterproductive behaviors.

Theoretical and Practical Implications

A number of theoretical and practical implications emerge from the current research. Firstly, from a theoretical perspective, perceived organizational justice and counterproductive behaviors were previously investigated in the light of Social Exchange Theory, Social Inequity Theory and in the theoretical framework of stressors as explanations for the organizational behavior proposed by Fox and its collaborators (2001). Similarly, the current research is built on these theoretical frameworks, thus contributing to their support through the data obtained that indicate the existence of the theorized relationship. Secondly, another theoretical implication is the introduction of alienation as an explanatory mechanism of the relationship.

The practical implications of the study result in underlining the effect of the lack of

perceived organizational justice on the manifestation of counterproductive behaviors. This reiterates the importance of the organization's efforts to reduce employees' negative perceptions of various phenomena in the organization, such as perceived justice, in order to reduce undesirable behaviors and their associated costs. This would contribute to the well-being of organizations in particular and a lack of significant financial losses through the aforementioned mentioned manifestations (e.g., absenteeism, theft, sabotage, conflict, etc.) when looking at organizations in a global manner.

Also, the possibility of addressing the alienation felt by employees is another relevant practical implication. Thus, strategies can be developed to combat the sense of disconnection and alienation at work. In doing so, important variables can include the types of leaders, the relationships between employees or within groups, but also the complex dynamics and types of climate that arise in the organizational context.

Research Limitations

Cross-sectional studies are subject to many concerns and methodological limitations (Teti, 2006), which is also one of the limits of the current research. The nature of the mediation analysis itself is a causal one, in the current study it is inferred the causal relationship between the predictor (perceived injustice) and the dependent variable (counterproductive behaviors), having as an explanatory mechanism the mediating variable work alienation. Obviously, additional studies are needed to support causal inferences.

The questionnaires were administered at the same time, the data for each variable being obtained together. Participants reported the level of perceived organizational justice, the degree to which they engage in counterproductive behaviors at work, and the level of alienation felt. Collecting data at the same time using a single method, from the same source, through self-report questionnaires, has attracted the skepticism of the authors over time, a main criticism being the alleged phenomenon of common method bias. Also, given the negative nature of the

questionnaire measuring counterproductive behaviors, the researchers argue that it may be affected by variables such as social desirability, which refers to participants' tendency to deliberately or unconsciously represent themselves in a favorable light (Bowling & Gruys, 2010; Podsakoff & Organ, 1986).

However, Lance and Vandenberg (2009) argue against the exaggeration of the common method bias phenomenon in the organizational literature, which seems to have reached the rank of "urban legend", arguing that it is possible, but not necessary, to affect the relationships between variables. Regarding social desirability, which is manifested, for example, when the participant reports things about himself in order to obtain a stake (e.g., obtaining a job at a job interview), the authors claim that it does not manifest itself similarly or necessarily in the different types of self-report questionnaires. Due to the absence of a stake, we tend to believe that social desirability was not an important factor in reporting counterproductive behaviors in the current study. A future direction could be the addition of a questionnaire to measure the tendency to respond in a desirable way, as a control variable and the adoption of a multi-method design.

Additionally, questionnaires that measure counter-productive behaviors are assumed to be the subject of response distortion by the participants (Stewart et al., 2009). Therefore, the literature notes researchers' initiatives to develop questionnaires such as other-report ones, in which colleagues/teammates, supervisors or the leader describe the incidence of counterproductive behaviors among colleagues. In this regard, in a meta-analysis carried out by Berry and its colleagues (2012), which compares the self-report questionnaires and other-report counterproductive behaviors, the patterns and the magnitude of relationships with other variables were mostly similar, and the other-report questionnaires often do not bring a relevant incremental level of variation compared to the self-report ones, at the same time the value of the first ones is not denied. The authors also state that the reporting of counterproductive behaviors is more likely to

be more accurate as the number of guarantees of anonymity increases, which suggests that researchers can obtain better data when participants perceive their responses as more anonymous, as is done in the current study, both by not having to enter the name or any other kind of identification code in the questionnaires distributed to participants, and by reiterating the anonymity in the description of the study that was available to participants.

Considering that two concepts are multidimensional (organizational justice and counterproductive work behaviors), and that we use the global scores, it would be informative in further studies to investigate this effects separately. It is largely known the dimensions of organizational justice have different outcomes, and, in consequence, there is possible that the explanatory mechanisms between these dimensions and their outcomes are different.

The current study identified that work alienation completely mediates the relationship between organizational injustice and counterproductive behaviors. Future research could focus on introducing several variables into the equation, such as personality characteristics: conscientiousness, negative affectivity; other job characteristics, organizational climate, person-environment matching, civic behaviors, etc., thus providing a more comprehensive framework of current variables and various possible interactions.

The theoretical framework provided by the current study and the data obtained support the desirability of acting to reduce the lack of perceived organizational justice felt by employees, in order to improve employee attitudes and reduce counterproductive behaviors within organizations. Managers should be interested in the attitudes of their employees because attitudes influence behavior and indicate potential problems. Evidence suggests that managers' efforts to improve employee attitudes are likely to lead to positive results, including greater organizational effectiveness, greater customer satisfaction and increased profits.

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PUBLISHING STANDARDS

Psychology of Human Resources – guide for authors

THE EDITORS

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Author, A.A., Author, B. B., & Author, C. C. (year). Title of article. *Title of Periodical*, *xx*, pp-pp. doi: xx.xxxxxxxx

Author, A. A., Author, B. B., Author, C. C., Author, D. D., Author, E. E., Author, F.F., ... Author, Y.Y. (year). Title of article. *Title of Periodical*, *xx*, pp-pp. doi: xx.xxxxxxxx

Author, A.A., Author, B. B., & Author, C. C. (year). Title of article. *Title of Periodical*, *xx*, pp-pp.

Author, A.A., & Author, B.B. (in press). Title of article. *Title of Periodical*. Retrieved from <http://cogprints.org/5780/1/ECSRAP.F07.pdf>

2. Books

Author, A. A. (year). *Title of work*. Location: Publisher.

Author, A. A. (year). *Title of work*. Retrieved from <http://www.xxxxxxx>

Author, A. A. (year). *Title of work*. doi: xxxxx

Editor, A. A. (Ed.) (year). *Title of work*. Location: Publisher.

3. For chapters in a book or entry in a reference book (selective example)

Author, A.A., & Author, B.B. (year). Title of chapter or entry. In A. Editor, B. Editor, & C. Editor (Eds.), *Title of book* (pp. xxx-xxx). Location: Publisher.

Author, A.A., & Author, B.B. (year). Title of chapter or entry. In A. Editor & B. Editor (Eds.), *Title of book* (pp. xxx-xxx). Retrieved from <http://www.xxxxxxx>

Author, A.A., & Author, B.B. (year). Title of chapter or entry. In A. Editor, B. Editor, & C. Editor (Eds.), *Title of book* (pp. xxx-xxx). Location: Publisher. doi: xxxxxxxx

4. Meeting and symposia (selective examples)

Contributor, A.A., Contributor, B.B., Contributor, C.C., & Contributor, D.D. (Year, Month). Title of contribution. In E.E. Chairperson (Chair), *Title of symposium*. Symposium conducted at the meeting of Organization Name, Location.

Presenter, A.A. (Year, Month). *Title of paper or poster*. Paper or poster session presented at the meeting of Organization Name, Location.

5. Unpublished works (selective examples)

Author, A.A. (Year). Title of manuscript. Unpublished manuscript [or "Manuscript submitted for publication," or "Manuscript in preparation"].

For a detailed description of the procedure related to the citation of other types of work than those listed above, consult the 6th APA Publication Manual.

Footnotes

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Appendices

The appendices of the manuscript (labeled APPENDIX A, APPENDIX B etc.) contain materials that supplements article content such as lengthy methodological procedures, calculations of measures, scales etc.

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 Insert Table 1 about here

Each table or figure needs an introductory sentence in your text. The format agreed is the standard (canonical) one. Each table should report one type of analysis (which is identified in the title), and each vertical column and horizontal row should contain only one type of data.

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When a work has no identified author, the author should cite in text the first few words of the reference list entry (usually the title) and the year. Use double quotation marks around the title of an article, a chapter, or a web page and italicize the title of a periodical, a book, a brochure, or a report:

on organizational commitment
 (“Study Report”, 2011)
 the book *Motivational Outcomes*
 (2011)

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(Johnny, 2011, p. 13)

6. Secondary sources

When the original work is out of print, unavailable through usual sources, the author should give the secondary source in the reference list and in the text you should name the original work and give a citation for the secondary source

Minnie’s report (as cited in Smith, 2011).

Thank you for paying attention to the conventions outlined in this guide – it will help the work of everyone involved in the publication of this journal.