

## Psychometric properties of the Serbian version of the Negative Acts Questionnaire – Revised

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The Negative Acts Questionnaire-Revised (NAQ-R), together with its earlier version, The Negative Acts Questionnaire (NAQ), is one of the most utilized instruments for exploring workplace bullying, both in applied and scientific research. Contrary to its widespread use, there are a few published NAQ-R validation studies. In this paper we wanted to support developing grounds for future cultural analysis, comparison and development of the NAQ-R which was created as an instrument primarily for measuring workplace bullying in Anglo-American cultural settings. The aim of this study was to analyze the psychometric properties of the Serbian translation of the Negative Acts Questionnaire-Revised (NAQ-R) by exploring its factor structure, internal consistency and criterion validity. The sample comprised 1710 employees from both private and public sector in Serbia. Principal component analysis revealed one component that explained almost 60% of the total variance. The Confirmatory factor analysis was carried out in order to test the one, two and three factor solutions suggested by the authors of the NAQ. The results of CFA confirmed all three solutions, but only fairly, as some of the fit indicators did not reach the expected values. Reliability analysis showed excellent internal consistency of the NAQ-R (Cronbach's  $\alpha=0.96$ ). The significant correlations of the NAQ-R with job and organization related measures, and subjective health and well-being measures provided evidence of its construct validity. Higher correlations of the NAQ-R with a set of work related behaviors than the correlations with health related measures were in accordance with the nature of the phenomenon that is primarily focused on work-disabling behaviors. The results of this study showed acceptable psychometric properties of the Serbian translation of the NAQ-R. Obtained findings indicate that the future development of the Negative Acts Questionnaire-Revised could follow two streams: one would be a further refinement of the uniform NAQ as a true cross-cultural measure that would generate comparable findings and the second one the development of separate national and/or regional forms.

*Keywords:* Workplace bullying, Negative Acts Questionnaire-Revised, job and organization related measures, health and well-being, psychometric properties.

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*Acknowledgement:* This research was carried out with the support of the Ministry of Education, Science and Technological Development of the Republic of Serbia, grant number 179018 and in cooperation with the Confederation of Autonomous Trade Unions of Serbia

Workplace bullying has been identified as a widespread problem in contemporary organizational research (Petrović, Čizmić, & Vukelić, 2014). It is defined as a situation in which one or more employees are persistently and systematically subjected to negative acts by superiors, colleagues or subordinates (Einarsen, 2000; Hershcovis, 2011). Numerous negative acts are mainly of a psychological nature (Einarsen, Hoel, & Notelaers, 2009). As described by Einarsen et al. (2009), they can be subtle (such as ignoring, excluding, or giving unreasonable tasks) or open (such as constantly criticizing, giving offensive remarks, or threatening verbally). The negative acts can also be differentiated based on their focus, as person-related, work-related negative acts and physical intimidation. Person-related negative acts encompass behaviors such as humiliating, ridiculing, or spreading rumors, while giving unmanageable tasks, excessive monitoring and withholding information needed for the work to be done are examples of work-related negative acts. Physical intimidation is an example of extreme workplace bullying, either in the form of a physical threat or physical attack. Although very rare, physical intimidation still occurs at the workplace in different cultures (Einarsen et al., 2009; Leymann, 1990; Petrović et al., 2014). It should be noted that cases of extreme violence at work fall beyond the scope of workplace bullying.

If one or more varied negative acts at work last for some longer period, an employee becomes a victim that cannot defend him/herself and ends up in an inferior position (Einarsen, Hoel, Zapf, & Cooper, 2011). Authors agree in outlining the essential features of workplace bullying (Lutgen-Sandvik, Tracy, & Alberts, 2007; Matthiesen, 2006; Nielsen, Matthiesen, & Einarsen, 2010). Workplace bullying is: unwanted, persistent and repetitive, and there is a disparity of power between the bully and the target that makes it difficult for the target to defend her/himself. According to Nielsen and colleagues (2010), workplace bullying operationalization covers either employees' overall estimation of being bullied, mostly identified as a self-labeling approach, or employees' assessment of being exposed to a set of different negative acts, identified as a behavioral experience approach. The behavioral experience approach based on assessing a series of different negative acts gives more information and provides grounds for 'sophisticated' research (Rayner, Sheehan, & Barker, 1999) in a specific context. However, a growing number of research papers support combining the self-labeling and behavioral experience approaches in workplace bullying research (Nielsen et al., 2010; Petrović et al., 2014).

As negative acts form the core of the workplace bullying, different workplace bullying scales are based on assessing employees' personal exposure to them (Nielsen, Notelaers, & Einarsen, 2011). Nielsen and colleagues listed 27 different inventories for the assessment of workplace bullying or phenomena similar to workplace bullying. There was a number of ad-hoc scales, while The Leymann Inventory of Psychological Terror, LIPT (Cowie, Naylor, Rivers, Smith, & Pereira, 2002; Leymann, 1990, 1996; Nielsen et al., 2011), and The Negative Acts Questionnaire, NAQ and the revised version NAQ-R (Einarsen et al., 2009; Nielsen et al., 2011) were among the mostly applied standardized

measures. Moreover, the application of different versions of the NAQ was identified in 47% of studies exploring workplace bullying (Nielsen et al., 2010; Nielsen et al., 2011).

The first version of the LIPT (Cowie et al., 2002; Leymann, 1996), the scale that historically initialized the development of workplace bullying research, was developed in Swedish. It consisted of 45 items about hostile activities that covered latent bullying dimensions: negative communication, humiliating behavior, isolating behavior, frequent changes of task to punish someone, and violence or threat of violence (Zapf, Knorz & Kulla, 1996). The studies utilizing the LIPT in German speaking countries have corroborated the repeatedly stated opinions about different behaviors being representative of workplace bullying in different cultures (Leymann, 1996).

Different versions of the NAQ, another standardized behavioral workplace bullying inventory, have been applied in a number of countries in diverse languages and cultures (for example: Djurkovic, McCormack, & Casimir, 2008; Einarsen et al., 2009; Giorgi, Arenas, & Leon-Perez, 2011; Lutgen-Sandvik et al., 2007; Mikkelsen & Einarsen, 2001; Öcel & Aydin, 2012; Tambur & Vadi, 2009). The literature often cites the NAQ and its newer, revised version NAQ-R (Mikkelsen & Einarsen, 2001; Nielsen et al., 2011). Einarsen et al. (2009) refined the initial NAQ scale in a number of iterations to develop a more reliable, yet comprehensive 22-item scale that could be applied in different organizational and cultural settings. The NAQ-R includes both direct and indirect forms of negative behaviors at work that exemplify work-related bullying, person-related bullying and physical intimidation. Following Arvey and Cavanaugh's (1995) approach to sexual harassment research, Einarsen and colleagues (2009) coined items in behavioral terms with no reference to the terms *bullying* or *harassment*. All items are assessed on a five-point rating scale which refers to the frequency of a negative act (1 – never; 2 – rarely; 3 – monthly; 4 – weekly, and 5 – daily). Items are assessed in the last six-month time frame.

Scores can be calculated in two ways: 1. as a raw sum of item responses on the entire scale that expresses the extent to which a respondent is directly exposed to negative acts, or 2. as a sum of dichotomized ratings of each item followed by the cut-off criterion defining the number of negative acts which would be considered as workplace bullying (Notelaers & Einarsen, 2013). Nevertheless, operational cutoff points are rather arbitrary (Einarsen et al., 2009; Notelaers & Einarsen, 2013) and tend to reduce the complex phenomenon of bullying to an 'either-or' phenomenon that should rather be explored on a continuum, from infrequent, discrete, subtle and hardly recognizable, to frequent, pervasive and bold negative behaviors. Thus, the NAQ-R raw sum approach provides data for exploring the entire spectrum of negative behaviors at work (Einarsen et al., 2009). It builds upon the notion of workplace bullying as an escalating process that usually starts with isolated, implicit and hardly observable behaviors and ends up with isolating and victimizing a person (Einarsen et al., 2011).

The analysis of the NAQ-R Cronbach's alpha (0.90) showed that the instrument had a high internal consistency (Einarsen et al., 2009). Based on the underlying factor structure, the NAQ-R could be applied both as a single factor measure and as a measure of three factors: personal bullying, work-related bullying and physical intimidation. In demonstrating the NAQ/NAQ-R and other workplace bullying instruments' construct validity, both in validation studies (Einarsen et al., 2009; Giorgi et al., 2011; Jiménez, Muñoz, Gamarra & Herrer, 2007; Tsuno, Kawakami, Inoue, & Abe, 2010), and in other workplace bullying studies (Baillien & De Witte, 2009; Cooper-Thomas et al., 2013; Djurkovic et al., 2008; Høgh, Mikkelsen & Hansen, 2011, 2012; Lutgen-Sandvik et al., 2007; Vartia, 2001), authors applied two groups of measures:

1. Job and organization-related measures (interpersonal relations at work, organizational/social climate, perception of psychosocial work environment and leadership, perceived organizational support, organizational commitment; role conflict; job satisfaction; job insecurity; self-rated job performance; intention to leave), and
2. Health-related measures (general health and/or mental/psychological health, well-being, subjective/perceived stress, absenteeism, sick-leave, fatigue, burnout and depression).

Focusing on the prevalence, correlates and consequences of workplace bullying, the researchers paid less attention to the operationalization of the construct itself and, in particular, to the NAQ-R validation in different cultural settings (Giorgi et al., 2011; Nielsen et al., 2010). Moreover, the picture is somewhat blurred because researchers applied not only different versions of the NAQ and NAQ-R but they have also developed national shortened versions of the NAQ/NAQ-R (e.g. Giorgi et al., 2011; Jiménez et al., 2007).

The aim of the study was to analyze the psychometric properties of the Serbian translation of the NAQ-R by re-examining data from the large-scale workplace bullying survey of employees in Serbia (Petrović et al., 2014). In this paper we wanted to assess the Serbian translation of the NAQ-R by exploring its factor structure, internal consistency for the chosen factor solution, and criterion validity. Criterion validity was explored in relation to two groups of measures: job and organization related measures on the one side, and subjective health and well-being on the other. Also, we wanted to compare our findings with comparable NAQ-R published data i.e. from the UK validation study (Einarsen et al., 2009) and Norwegian data (Notelaers & Einarsen, 2013).

Based on the previously mentioned research body, we opted for the following variables as workplace bullying correlates in this research: job and organization-related variables (intention to leave, perceived productivity, perceived threat to a total job, powerlessness, perceived organizational support), and subjective health and well-being indicators (sickness absenteeism, self-rating of health status and satisfaction with life). Intention to leave, perceived threat to a total job, and sickness absenteeism were expected to be positive correlates and

perceived productivity, powerlessness, perceived organizational support, self-rating of health status and satisfaction with life were expected to be negative correlates of workplace bullying.

Following the form of similar validation studies (e.g. Einarsen et al., 2009; Giorgi et al., 2011; Jiménez et al., 2007; Tsuno et al., 2010), we wanted to contribute to the research of workplace bullying in Serbia by offering a solid and comparable methodological ground for the researchers of this phenomenon. Moreover, we wanted to support cultural analysis, comparison and further development of the NAQ-R, which was created as an instrument primarily for measuring workplace bullying in Anglo-American national settings (Einarsen et al., 2009).

## Method

### Participants and procedure

This study was carried out by re-analyzing data from a large workplace bullying survey (Petrović et al., 2014) that covered employees from 44 municipalities in Serbia. The sample included 1710 employees (53.1% women). The mean age of employees included in the sample was 44.18 years ( $SD = 10.30$ ), and the average tenure was 20.26 years ( $SD = 10.70$ ). The average length of service with their present organizations was 15.20 years ( $SD = 10.62$ ). Majority of respondents completed secondary education (55.2%), 24.3% had university degree, 16.7% completed trade school/college, and 3.7% had elementary education. There were 84.5% subordinates and 15.5% held supervisory positions. More than half of respondents (64.4%) worked in public organizations and slightly more than one-third (35%) were from private organizations.

Participation was voluntary and not compensated in any way. Due to the sensitivity of the issue, confidentiality was guaranteed to the participants.

### Measures

*The Serbian version of the NAQ-R* was translated through the committee technique in three iterations (Brislin, Lonner, & Thorndike, 1973). Initial research ( $N = 216$  employees) showed high reliability, Cronbach's alpha was 0.96 (Čizmić & Vukelić, 2010) and that version was retained for further research.

*Job and organization related measures* included in the research were: intention to leave, perceived productivity, job insecurity (perceived threat to a total job and powerlessness to counteract threats in organization), and perceived organizational support.

Intention to leave and perceived productivity were estimated following the validation research of Einarsen and colleagues (2009). *Intention to leave* was assessed by the incidence of considering quitting the current job (five-point scale, from 1 – never to 5 – very often). *Perceived productivity* was estimated in comparison to the usual working capacity on a five point rating scale varying from 100% to less than 25% (rating scale was modified to include wider range of working capacity compared to the original research where the capacity ranged from 50 to 100%).

Job insecurity was assessed based on the Serbian versions of *The perceived threat to a total job scale* (Petrović et al., 2014) and *The powerlessness to counteract threats scale* (Vukelić, Čizmić, & Petrović, 2013b), two sub-scales from the Job insecurity scale (Ashford, Lee, & Bobko, 1989). To assess the perceived threat to a total job, threats were described in

eight items and their probability was rated on a five-point scale, from 1 – very unlikely to 5 – very likely. Cronbach’s alpha was 0.88 (Petrović et al., 2014). Powerlessness to counteract threats was assessed on a three-item scale indicating the power of an individual to counteract threats in organization that could jeopardize his/her job. The power to counteract threats was assessed on a five point scale from 1– strongly disagree (indicating powerlessness) to 5 – strongly agree (indicating power), thus greater score indicates stronger power to counter threats. Cronbach’s alpha for this scale was 0.89 (Vukelic, Cizmic, & Petrovic, 2013a).

Organizational support designates the extent to which an employer cares for employees and respects them (Rhoades & Eisenberger, 2002). The perceived organizational support was assessed using Serbian translation of Eisenberger and colleagues’ (Eisenberger, Huntington, Hutchison & Sowa, 1986) *Survey of Perceived Organizational Support, SPOS* (Vukelić et al., 2013b). SPOS was designed to measure the extent to which employees perceive that organization values their contribution and cares about their well-being. The Serbian translation of the SPOS (eight items rated on a 7-point Likert scale) had high internal consistency – Cronbach’s alpha was 0.87 (Vukelic et al., 2013a).

*Subjective health and well-being* were analyzed based on sickness absenteeism, self-assessed health status and satisfaction with life. *Sickness absenteeism* was estimated following Einarsen’s et al. validation research (2009) by the duration of sick leave (five options, from no sick leave to more than twenty days during the previous six months). *Current health* was self-assessed by a single-item measure on a five point scale (from 1 – very bad to 5 – very good). The *Satisfaction with life scale* (SWLS, Diener, Emmons, Larsen, & Griffin, 1985) consists of five items that measure general life satisfaction rated on a 7-point Likert scale. The Serbian translation of SWLS had high internal consistency – Cronbach’s alpha was 0.91 (Vukelic et al., 2013a).

## Results

### Exploratory Factor Analysis

The 22 items of the NAQ-R were subjected to Principal components factor analysis (PCFA). Previous to the PCFA, the adequacy of the data was analyzed. The inspection of the correlation matrix has shown that all the coefficients were greater than 0.3. The value of Kaiser-Meyer-Olkin measure was 0.971, while Bartlett’s sphericity test showed statistical significance ( $\chi^2 [1710] = 26105.244$ ;  $p = .000$ ) demonstrating that the data were adequate for the PCFA.

The Guttman-Kaiser’s criterion revealed two components with Eigenvalues over one that explained 59.56% of the total variance. The contribution of the first component was 54.89% (Eigenvalue=12.10) and the contribution of the second one was 4.67% (Eigenvalue=1.03). Cattell’s scree test and Horn’s parallel analysis suggested one principal component solution. Namely, in Horn’s parallel analysis only the first component’s Eigenvalue was higher than the threshold value extracted from the equally large matrix of random numbers (22 variables  $\times$  1710 participants). Since Cattell’s scree test and Horn’s parallel analysis are more robust criteria than the Guttman-Kaiser’s criterion (Zorić & Opačić, 2013), we analyzed the one factor solution. All the NAQ-R items were strongly correlated with the first component and the variance explained by the first component for each item was above 0.450 (Table 1).

Table 1

*NAQ-R: Items' means, standard deviations, correlations with the first principal component, and variance explained by the component*

	Contents of the item	M	SD	Item-component correlation	Variance explained
13	Persistent criticism of work	1.50	0.84	.811	.660
2	Humiliation in connection with work	1.46	0.81	.803	.645
20	Excessive teasing and sarcasm	1.33	0.73	.789	.703
17	Allegations against employee	1.65	0.87	.785	.616
14	Opinions and views ignored	1.74	0.93	.784	.644
11	Constant reminders of errors or mistakes	1.47	0.79	.782	.612
12	Being ignored or facing a hostile reaction	1.59	0.84	.778	.610
6	Being ignored	1.53	0.86	.769	.592
18	Excessive monitoring	1.67	1.01	.752	.612
8	Being shouted on, or being the target of anger	1.61	0.84	.752	.572
7	Insulting or offensive remarks	1.41	0.79	.749	.608
9	Intimidating behavior (e.g. finger-pointing, blocking the way)	1.30	0.67	.740	.673
15	Practical jokes about employee	1.44	0.78	.739	.626
10	Hints or signals to quit a job	1.28	0.70	.735	.572
16	Tasks with unreasonable targets or deadlines	1.54	0.83	.728	.569
4	Key areas of responsibility removed	1.50	0.94	.725	.593
3	Given assignments below the level of competence	1.70	1.02	.701	.606
19	Pressure on employee not to claim his/her rights	1.60	1.01	.690	.521
21	Exposure to an unmanageable workload	1.69	0.99	.687	.521
5	Gossip and rumors about employee	1.80	1.02	.675	.457
1	Withholding important information	1.72	0.92	.652	.488
22	Threats of violence, physical abuse, or actual abuse	1.18	0.57	.641	.603

### Confirmatory factor analysis

Besides the one-factor solution suggested by the PCFA, we tested with the CFA another two possible solutions that were confirmed in the UK validation analysis of the NAQ-R (Einarsen et al., 2009). Thus, the CFA was carried out without cross-loadings or correlation between errors in order to test the following solutions:

1. One-factor model suggested by the PCFA, all 22 items (Table 1);
2. Two correlated factors suggested by Einarsen et al. (2009), work related bullying, items: 21, 19, 18, 16, 14, 3, 1; person-related bullying, items: 20, 17, 15, 13, 12, 11, 10, 7, 6, 5, 4, 2, 8, 9, 22;

3. Three correlated factors as it was also suggested by Einarsen et al. (2009), work related bullying, items: 21, 19, 18, 16, 14, 3, 1; person-related bullying, items: 20, 17, 15, 13, 12, 11, 10, 7, 6, 5, 4, 2, and physically intimidating bullying, items: 8, 9, 22.

Having in mind that the phenomenon of workplace bullying is not expected to be normally distributed in the population and that consequently the NAQ-R data are expected to be non-normal (Einarsen et al, 2009; Nielsen et al., 2011; Notelaers & Einarsen, 2013), in performing the CFA we have used Asymptotically Distribution-free Estimates method as it is more sensitive to non-normal distribution of scores (Benson & Fleishman, 1994; Maydeu-Olivares, Coffman, & Hartmann, 2007).

Table 2  
*Goodness-of-fit indicators for three proposed models*

Proposed model	Goodness of fit indices						
	$\chi^2$	df	p	CMIN/df	RMSEA	GFI	CFI
One-factor model	556.309	209	0.000	2.662	0.031	0.735	0.554
Two-factor model	551.770	208	0.000	2.653	0.031	0.737	0.558
Three-factor model	549.467	206	0.000	2.667	0.031	0.738	0.559

In the analysis of Goodness-of-fit indices (Table 2), we have used the indicators that were included in the articles about psychometric properties of different versions of the NAQ (e.g. Einarsen et al., 2009; Giorgi et al., 2011; Jiménez et al., 2007). As all three models could not have been immediately rejected based on  $\chi^2$  value due to the large size of the sample, they were estimated on the basis of CMIN/df (Wheaton, Muthén, Alwin & Summers, 1977). Since the values of CMIN/df were in the range up to 5 for our models, they were acceptable according to Wheaton and colleagues (1977). These values of CMIN/df are also acceptable by Kline (2005), who suggested that in the acceptable cases this value should not be greater than 3. Since RMSEA is less than 0.05 it could be concluded that it indicates a suitable fit (Blunch, 2013). On the other hand, the GFI and CFI did not reach desirable values that would be close to 1, thus GFI indicates a close, but not preferred fit, and CFI a not so good fit (Blunch, 2013).

Correlations between all three factors or dimensions are very high, exceeding 0.70 (from 0.72 between work related bullying and physical intimidation, to 0.86 between work related bullying and person related bullying), thus corroborating the findings of Einarsen et al. (2009). This finding is in line both with theoretical conceptualization of workplace bullying as a complex phenomenon, and different factor structures that highlight its previously mentioned complexity. All the items had factor loadings equal to or greater than 0.5, except for the items 22 and 10. The item 22 (*threats of violence, physical abuse, or actual abuse*) had loading 0.12 on the physically intimidating bullying factor (in the three-factor solution model), 0.10 on the person-related bullying



factor (in the two-factor solution model), and 0.11 for the one factor solution. In addition, the item 10 (*hints or signals to quit a job*) did not exceed the value of 0.35 being associated to person-related bullying factor in both two and three factor solution models.

### Internal consistency and descriptive measures

Cronbach’s alpha of 0.96 demonstrated exceptional internal consistency of the NAQ-R scale. Further analysis using ‘alpha if item deleted’ option has shown that there were no items whose removal would raise the internal consistency of the scale. We have also calculated alphas for three subscales: person related-bullying (Cronbach’s alpha=0.88), work related bullying (Cronbach’s alpha= 0.93), and physically intimidating bullying (Cronbach’s alpha= 0.76).

The NAQ-R scores were not normally distributed (Kolmogorov-Smirnov  $Z = 8.240$ , 2-tailed sig. = .000), as it was expected based both on theoretical conceptualization and previous research (Einarsen et al., 2009; Notelaers & Einarsen, 2013). It should be noted that the majority of respondents rated majority of items “never” and “rarely”.

The comparison of means on the Serbian sample (Table 3) with the UK validation sample (Einarsen et al., 2009) and Norwegian representative sample (Notelaers & Einarsen, 2013) showed that, based on the NAQ-R total scores, the employees in Serbia were more exposed to negative behaviors at work than the employees in the UK (t-test for independent samples,  $t = 5.8567$ ,  $df = 6996$ ,  $p = 0.000$ , Cohen’s  $d = 0.150$ , effect-size = 0.07) and employees from Norway (t-test for independent samples,  $t = 22.2188$ ,  $df = 4247$ ,  $p = 0.000$ , Cohen’s  $d = 0.648$ , effect size = 0.308).

Table 3

*Comparison of the Serbian sample with UK validation and Norwegian samples: Means and Standard Deviations for the total NAQ-R and the three sub-scales*

	Serbian sample (N=1710)		UK sample <sup>1</sup> (N=5288)		Norwegian sample <sup>2</sup> (N=2539)	
	M	SD	M	SD	M	SD
NAQ-R total	33.70	13.86	31.88	10.15	26.75	6.16
Work-related bullying	17.96	7.71	13.78	5.20		
Person-related bullying	11.66	5.15	14.51	5.04		
Physically intimidating bullying	4.07	1.73	3.88	1.85		

<sup>1</sup>Einarsen et al., 2009; <sup>2</sup>Notelaers & Einarsen, 2013

### Validity analysis

The validity of the NAQ-R was analyzed by correlating the NAQ-R total score and scores on the person related-bullying, work-related bullying, and physically intimidating bullying subscales with job and organization related measures, and subjective health and well-being measures. As can be seen from Table 4 all the correlations were significant at 0.01 level and in expected

directions – low for sickness absenteeism and perceived productivity, medium for perceived threat to a total job, powerlessness (note that a higher score on the powerlessness scale indicates more power), self-rating of health, and satisfaction with life and high for intention to leave and perceived organizational support. The perceived organizational support has the strongest correlations with the NAQ-R total and all three dimensions of workplace bullying, while sickness absenteeism and perceived productivity have the lowest. Physically intimidating bullying has the weakest correlation with both job and organization related indicators, and subjective health and well-being indicators.

Table 4

*Pearson product-moment correlation between the NAQ-R, PRB, WRB and PIB and the job and organization related indicators, and subjective health and well-being indicators*

	Job and organization related indicators					Subjective health and well-being		
	Intention to leave	Perceived productivity	Perceived threat to a total job	Powerlessness	POS <sup>1</sup>	Sickness absenteeism	Self-rating of health	SWL <sup>2</sup>
NAQ-R total	.457**	-.145**	.354**	-.213**	-.497**	.135**	-.315**	-.273**
PRB, Person-related bullying	.427**	-.153**	.318**	-.192**	-.462**	.150**	-.303**	-.238**
WRB, Work-related bullying	.475**	-.122**	.387**	-.234**	-.521**	.094**	-.299**	-.305**
PIB, Physically intimidating b.	.345**	-.119**	.263**	-.152**	-.364**	.131**	-.281**	-.212**

<sup>1</sup> POS Perceived organizational support, <sup>2</sup> SWL Satisfaction with life

\*\* Correlation is significant at the 0.01 level

## Discussion

The main goal of this research was to analyze the psychometric properties of the Serbian translation of the NAQ-R by exploring its factor structure, internal consistency and criterion validity. Taking into account the results of Cattell's scree test and Horn's parallel analysis, as well as item-component correlation and variance explained by the component, one principal component solution was chosen as the most appropriate. Item-component correlation was in the range from .641 to .811 (Table 1), while the variance explained by the component did not fall under the value of .457 indicating the expected co-occurrence of different negative behaviors (Einarsen et al., 2009). In the confirmatory factor analysis we have further analyzed all three models suggested by Einarsen and colleagues (2009). Based on satisfactory values of CMIN/df and RMSEA goodness-of-fit indices (Table 2), we can conclude that our data roughly support fit for all three models (one, two and three-factor solutions). It is important to note that the entire NAQ-R scale and all three subscales have high internal consistency. As expected, correlations between all three factors are very high. Our overall results confirm Einarsen and colleagues' conclusion that the NAQ-R could be used as one, two and three dimension workplace bullying measure (Einarsen et al., 2009).

The results indicate that one-factor solution can be identified as representing employees' exposure to varied negative behaviors at work to a different extent and in different duration. It supports the concept of workplace bullying defined by Einarsen and colleagues (2011) as a process that comprises different negative behaviors that interchange and combine expressing the same underlying harassing behavior towards the target. On the other hand, the one-factor solution can also be regarded as a reduction of the multi-dimensional phenomenon of workplace bullying (Einarsen et al., 2009). Namely, two and three-factor solutions from the CFA (work-related bullying, person-related bullying, and physically intimidating bullying) highlight a specific pattern amongst these negative behaviors.

When discussing the findings obtained in this research, it is important to note that in translating the NAQ-R to Serbian, contrary to some other national validation studies (for example, in Italy, Giorgi et al., 2011 and in Spain, Jiménez et al., 2007), we kept the composition of the scale (i.e. the number of items) unchanged. The advantage of such an approach is the possibility of cross-cultural comparisons of workplace bullying at the level of specific negative behaviors. It also gives grounds for further exploration of workplace bullying in its full complexity. In line with the national validation studies that produced different versions of the NAQ and the fact that some of the checked CFA indicators did not show adequate fit in this study, the future research of the NAQ-R in Serbia might include redefining and further development of items. Future research should also pay attention to the reconceptualization of the physical aspects of workplace bullying in different cultural contexts.

As for the distribution and prevalence, skewed ratings of negative behaviors at work are in line with findings from other studies (e.g. Einarsen et al., 2009; Nielsen et al., 2011; Notelaers & Einarsen, 2013). As Einarsen and colleagues noted, this finding in essence underlines the validity of the NAQ-R "as it intends to measure experiences outside or at the outer limits of the normal range of social interaction at work" (Einarsen et al., 2009: 39). For illustration purposes, we compared our NAQ-R total score (Table 3) with published scores obtained on representative samples in the UK (Einarsen et al., 2009) and Norway (Notelaers & Einarsen, 2013) and found that employees in Serbia reported more exposure to the same set of negative behaviors at work than employees in these countries. This is a fairly expected result since Northern European countries, especially Norway, are widely known as the countries with the least exposure of employees to negative behaviors at work (Zapf, Escartín, Einarsen, Hoel, & Vartia, 2011). However, in a previous analysis of workplace bullying in Serbia, taking into account the broader international perspective of workplace bullying, we found that the overall prevalence in Serbia fits the international data (Petrović et al., 2014). It should be noted that international comparisons are hampered by a plethora of methodological issues. Namely, even when authors apply the NAQ, they use a number of its versions, different criteria of defining workplace bullying, and incomparable samples, often from specific occupational groups.

The correlations of the NAQ-R total score and scores on person related-bullying, work-related bullying, and physically intimidating bullying subscales

with job and organization related measures, and subjective health and well-being measures (Table 4) confirm the validity of the NAQ-R in the specific context of Serbian working organizations. Correlations of NAQ scores are in line with published findings from other countries, both for work related measures (Baillien & De Witte, 2009; Djurkovic et al., 2008; Lutgen-Sandvik et al., 2007) and health related measures (Høgh et al., 2011, 2012; Vie, Glasø & Einarsen, 2011).

On the whole, correlations of the NAQ-R total and subscale scores with a set of job and organization related behaviors are higher than their correlations with health related measures (subjective health and well-being). Since job and organization related measures used in this study are closer to the phenomenon of workplace bullying as defined by Einarsen et al. (2011), we could conclude that these results corroborate the validity of the scale. Likewise, correlations with health related measures are in accordance with longitudinal studies that indicate that bullying at work may have long term effects on employees' health (Høgh et al., 2011). Thus, work-related behaviors could be regarded as more immediate and sensitive 'reagents' of negative behaviors at work while health related measures could be regarded as 'reagents' of a sustained and more severe exposure to negative behaviors at work.

In conclusion, the Serbian translation of the NAQ-R has acceptable psychometric properties, and hence could be considered as a reliable and valid instrument for measuring bullying behaviors at work. Since the results of the CFA did not show the uniform fit on all the analyzed indicators, further development of the questionnaire is obviously needed. In order to obtain solid grounds for a cross-cultural comparison of the phenomenon, we have tried to conserve the originality of each item and the scale as a whole, which probably resulted in some kind of cultural and contextual remoteness of the listed behaviors. Thus, the future development of the NAQ-R for the Serbian context should include a certain refinement and redefinition of items that would lead to better cultural embeddedness of workplace bullying behaviors.

As Nielsen and colleagues pointed out (Nielsen et al. 2010), only a few studies of workplace bullying focused on the critical investigation and development of methodology for measuring workplace bullying. Prioritizing the necessity to give more information on the phenomenon, the researchers obviously put aside further developing and readjusting of the scales. Therefore, the future development of the NAQ could follow two streams: one would be a further refinement of the NAQ as a true cross-cultural measure and the other one would be the development of national and/or regional forms of the NAQ. By integrating both streams in the wider perspective of exploring workplace bullying, researchers could obtain reliable, sensitive and 'sophisticated' (Rayner et al., 1999) methodology, as well as an instrument that would enable expanding the knowledge of workplace bullying. As Einarsen et al. (2009) suggested in their validation study, the NAQ-R could become a useful instrument for collecting benchmarking data from different countries.

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