Why teaching? A validation of the fit-choice scale in the Serbian context

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ABSTRACT

The aim of this study was to validate the structure of the FIT-Choice scale on a Serbian sample of pre-service teachers, as well as to determine the motivations and beliefs about the teaching profession, and test if motivation differs across different groups of pre-service teachers. After prospective class and subject teachers (N = 433) filled in the FIT-Choice scale, the CFAs were performed. For Motivations, the adjusted 12-factor model fits the data best. Ten original factors were replicated, and Bludging and Time for family appeared as separate factors, like in the first version of the FIT-Choice model, while Transferability and Security merged into one. The six-factor Beliefs model with one item removed had the best fit indices. Intrinsic value, Social utility value and Perceived teaching ability were the highest rated motivations. Females and prospective class teachers were more motivated by altruistic motives and perceived the profession as more demanding than males and prospective subject teachers. The authors conclude that the FIT-Choice scale demonstrated acceptable structural and known-groups validity and reliability, and that the results on Motivations were similar to those obtained in Western countries.

1. Introduction

Challenges related to the quality of teaching, teacher status, teacher shortages and turnover have led to a proliferation of studies addressing the topic of motivation for the teaching profession (Cooper and Alvarado 2006; Jeon and Wells 2018; Watt and Richardson 2008). Nevertheless, the number of studies investigating teacher motivation for teaching has remained relatively low in south-eastern European countries like Serbia, which face many educational and socioeconomic challenges, such as a low level of functional literacy, a high level of brain drain and high unemployment rates (see, e.g. Government of the Republic of Serbia 2018; Kovács-Cerovic 2006; Stanković 2011; Videnović and Čaprić 2020). Serbia also has specific challenges around poor social status of the teaching profession, low teachers’ salaries (European Commission/EACEA/Eurydice 2018; Nišević and Colić 2010; OECD 2013, 2014, 2016) and low interest from good candidates for a teaching career (Simić 2019). At the same time, due to a financial crisis and socio-political instability, numerous employment positions have been closed, which has made teaching positions more attractive, particularly among students.
educated to be class teachers and teachers of social science and humanities, who have few opportunities for employment elsewhere. On the other hand, teachers of Mathematics and Computer Science are lacking due to many other employment opportunities; however, the turnover of these teachers is more potential than real (Skocajić 2017).

Doing research on Serbian pre-service teachers’ motivation for choosing a teaching career is also relevant because of the specific pattern of cultural values that are present in Serbian society, which may also be present in other countries with a similar socio-political background. Due to a prolonged post-socialist transformation (Lazić and Cvejić 2007), Serbia has both the characteristics of countries that are typically referred to as capitalist, individualistic Western countries and also those that are referred to as collectivistic, as well as those of Eastern countries in terms of cultural values (Hofstede, Hofstede, and Minkov 2005; Simić, Toković, and Đorđević 2019). Young people display a specific blend of cultural values and gender role expectations, with significant differences being found between urban and rural areas, and also between youth of different educational levels (Manić 2017).

Few studies have compared different groups of teachers, such as males and females or those educated in different scientific disciplines, and they have yielded inconsistent results (e.g. Glutsch and König 2019; Klinč, Watt, and Richardson 2012; Müller, Alliata, and Benninghof 2009). Seeking to fill these gaps and to shed light on potential culture-specific issues in research on (prospective) teachers, this study explores Serbian pre-service teacher motivation for the teaching profession using the well-established theoretical and methodological framework FIT-Choice (Richardson and Watt 2006; Watt and Richardson 2007).

2. The theoretical framework and previous findings

2.1. Factors influencing teachers’ choice of the teaching profession

Watt and Richardson (2008) developed the first comprehensive theoretical model of motivations for the teaching profession – Factors Influencing Teaching Choice (FIT-Choice) (see Figure 1), identifying 12 motivational constructs. It distinguishes two first order values – Personal utility, usually referred to as extrinsic motivation (includes Job security, Job transferability, Time for family) and Social utility, usually named altruistic motivation (includes Shape future of children/adolescents, Enhance social equity, Making social contribution, Work with children/adolescents). Other motivational factors are: Intrinsic career value (refers to affinities towards teaching), Ability (perceptions of own abilities for teaching), Prior teaching and learning experiences, referring to one’s own teachers and schooling experiences, Social influences – significant others encouraging choice of teaching career and Fallback career – individuals who were unable to pursue their first-choice career (Watt & Richardson 2008).

The model also includes ‘task perceptions such as demands (difficulty and required expertise) and return (social status and salary) related to certain aspects of a teaching career’ (Jugović et al. 2012, 272), named Task demand, Task return and Social dissuasion – socialisation influences where the individual is being discouraged to pursue a teaching
career. Finally, it measures satisfaction with the choice of teaching as a career, as an outcome variable.

2.2. Previous studies with the FIT-choice model

On a large validation sample of Australian pre-service teachers (see Richardson and Watt 2006), 11 motivational factors were reproduced as theorised, while two factors merged into one (Bludging and Time for family) (Watt and Richardson 2007). The highest rated were Perceived teaching abilities, and the Intrinsic and Social utility value, while the lowest rated factor was Fallback career. Analyses of the perceptions and beliefs supported six rather than seven theorised underlying dimensions, with Social status and Teaching morale being merged into one (see Figure 1).

The subsequent studies mostly supported the FIT-Choice model. In some cultural contexts, Job transferability and Fallback career were not relevant or understood in the same way as in the original Australian context (Jugović et al. 2012; Watt et al. 2012), while in one study (Kılınç, Watt, and Richardson 2012), fewer motivation factors explained the data better (e.g. Shape future of children/adolescents, Make social contribution and Enhance social equity factor were combined into one). Teachers from Western European countries (Goller et al. 2019; Fokkens-Bruinsma and Canrinus 2012), USA (Lin et al. 2012), Australia (Watt et al. 2012) and Croatia (Marušić, Jugović, and Pavin Ivanec 2011) put emphasis on Intrinsic value and Social utility value over Personal utility value. In Turkey (Kılınç, Watt, and
Richardson 2012) and China (Lin et al. 2012) the highest value factor proved to be Social utility, but Job security had prevalence over Intrinsic value. These studies reproduced all perception factors as theorised, and although they showed that preservice teachers rate the job demands as high, they also showed that they were satisfied with their career choice (Kılınç, Watt, and Richardson 2012; Lin et al. 2012; Marušić, Jugović, and Pavin Ivanec 2011; Watt et al. 2012.)

Several studies point to gender differences, suggesting that altruistic and, in some cases – intrinsic motives, are stronger for female prospective teachers (Kılınç, Watt, and Richardson 2012; Müller, Alliata, and Benninghof 2009; Simić, Purić, and Stančić 2018). Although authors agreed that there are differences among teachers educated in different disciplines and belonging to different age groups, there are no common conclusions yet (see e.g. Glutsch and König 2019; Kılınç, Watt, and Richardson 2012; Müller, Alliata, and Benninghof 2009; Sinclair 2008).

2.3. Present study

Despite the changes in legislation regarding the school system that Serbia underwent in recent years that produced new challenges for teaching professionals, and in spite of the unfavourable status of the teaching profession (e.g. European Commission/EACEA/Eurydice 2018; OECD 2014, 2016), the number of studies investigating teacher motivation in the Serbian context is relatively low (see, e.g. Marušić and Oikonomou 2013; Marušić Jablanović 2014; Simić 2015; Simić, Purić, and Stančić 2018). There were no studies that applied internationally validated instruments (except for one small-scale pilot study – see Marušić Jablanović and Vračar 2019), involving a larger sample of both class and subject pre-service teachers and comparing different groups. Therefore, the aim of this study was twofold: a) to validate the structure of the FIT-Choice scale with a sample of pre-service class and subject teachers in Serbia; and b) to determine the motivations and beliefs about the teaching profession among Serbian pre-service teachers and test if motivation differs across different groups – males and females and teachers with different educational trajectories.

Although Serbian law requires both prospective class teachers (working with children aged 7–11) and subject teachers (working with children aged 12–18) to have a Masters degree and at least 36 ECTS of psychological, pedagogical and subject didactical courses and school practice since 2009, their educational trajectories significantly differ. When entering university, prospective class teachers choose a teaching career, and are integrally prepared for both teaching and the subjects. Subject teachers choose a teaching career at different points, depending on the study programme, and have fewer courses that prepare them for teaching, less teaching practice and more career options once they graduate. Due to different professionalisation pathways of class and subject teachers, and previously reported differences between Science and Engineering and Social Science and Humanities teachers (Glutsch and König 2019; Kılınç, Watt, and Richardson 2012) we treated pre-service class teachers and two groups of pre-service subject teachers as separate groups.
Table 1. Number of participants divided by gender and educational trajectories and disciplines.

|                                 | Educational trajectories and disciplines. |
|---------------------------------|------------------------------------------|
|                                 | Teacher training faculty (class teachers) | Science and Engineering (subject teachers) | Social science and Humanities (subject teachers) | Total |
| Gender                          |                                         |                                           |                                               |       |
| Females                         | 85 (68.4%)                               | 76                                         | 135                                           | 296   |
| Males                           | 58 (31.6%)                               | 24                                         | 193 (44.6%)                                   | 55    |
| Total                           | 109 (25.17%)                             | 131 (30.3%)                                | 193 (44.6%)                                   | 433   |

3. Method

3.1. Participants

The data were initially collected from 450 pre-service teachers. We did not include the participants who reported that they had more than 240 days of teaching experience gained through engagement in schools as substitute teachers, given that such an engagement was longer than the mandatory internship time at any of the faculties and almost as long as the induction period in Serbia. Therefore, the motivation structure of those participants would reflect not only their dispositions and preparatory education, but their job experiences as well, making them significantly different from typical pre-service teachers and more like novice teachers. Focusing on pre-service teachers makes our results comparable to the results obtained in other cultures using FIT-choice (for example Kılınç, Watt, and Richardson 2012; Lin et al. 2012; Watt and Richardson 2007). This left us with a total of 433 participants.

Aiming for a diverse sample that would enable generalisations, we recruited participants from 14 faculties from four Serbian state universities (Belgrade, Novi Sad, Niš and Kragujevac) that educate the vast majority of future teachers in Serbia. The sample included both prospective class teachers and prospective subject teachers. The prospective subject teachers were students educated in various disciplines (e.g. Chemistry, History, Engineering, Serbian language, etc.) attending modules or courses necessary for getting teaching qualifications who we classified according to their main discipline – Science and Engineering, and Social Science and Humanities (see Table 1). Participants were in their third or higher year of study, with the average age of 22.6 (range 20–40) and the average GPA of 8.16/10.

The proportion of males and females in our sample (see Table 1) reflects the proportion from the entire population of Serbian pre-service and in-service teachers (Statistical Office of the Republic of Serbia 2020). The variety of profiles we covered reflects the diversity of disciplines and faculties in Serbia where students can obtain teacher qualifications.

3.2. Instruments and variables

The FIT-choice scale involves a 38-item Factors influencing choice of a teaching career scale. Each item begins with the statement ‘I chose to become a teacher because …’ and continues with the reasons for choosing a teaching career, which participants rate on the 7-point Likert type scale (1 standing for ‘not at all important’, 7 – for ‘extremely
important”). The item set consists of the previously described 12 motivational constructs. The scale reliability reaches .80 or above across diverse samples (Jugović et al. 2012; Kılınç, Watt, and Richardson 2012; Watt et al. 2012). The Fallback career scale demonstrated the lowest reliability coefficients across studies (ranging from .57 to .67) (Watt et al. 2012).

The 14-item Perceptions/Beliefs about teaching scale consists of four subscales reflecting task demand and return (Expert career, High demand, Social status, Salary), one subscale for Social dissuasion and one for Satisfaction with choice, again with 7-point Likert type scales (1 standing for ‘not at all’, and 7 – ‘extremely’). The scale has good reliability, with the subscales Expert career, High demand and Social dissuasion showing somewhat lower coefficients in some cultures (Jugović et al. 2012; Kılınç, Watt, and Richardson 2012; Lin et al. 2012; Watt et al. 2012).

For the purposes of this study, a forward translation process for adapting the scale was applied. The Fit-choice scale was translated from English to Serbian language by a bilingual speaker and tested on six students from the relevant population, highly proficient in both languages. The meaning of each item was discussed, and translation was adjusted in order to improve clarity. The original and Serbian version were then compared, checking for matching in meaning and tolerating only minimal changes. For Social dissuasion and Satisfaction with choice subscales, instead of questions, the items were given in the form of statements, without altering the meaning (for example, the original item How carefully have you thought about becoming a teacher? was changed into I have thought carefully about becoming a teacher). The translation was then approved by a five-member team of educational scientists highly proficient in English (items are given in Tables A1 and A2 in Appendix A).

The final instrument was extended by adding questions regarding students’ background (gender, age), educational trajectory and discipline, average grade – GPA, and previous teaching experience.

3.3 Procedure

The instruments were administered to the students during regular classes at their faculties. In the case of three faculties, the teachers asked the students to fill in the form online. The research was voluntary and anonymous, with a response rate of 91%.

3.4. Statistical analyses

Confirmatory factor analyses (CFAs) for Motivations and Beliefs were initially performed because a strongly thesored and previously empirically validated scale was applied. Prior to CFAs, missing values analysis was conducted, which showed that data were primarily missing due to item nonresponse. The percentage of missing values for both Motivation and Beliefs scales ranged from 0% to 0.9%. Given that values were missing at random (Schafer and Graham 2002), Multiple imputation was performed in IBM SPSS Statistics for Windows, version 24.0, using the default option of five imputations. The CFAs were performed in Amos 24.0, with Maximum likelihood method applied to test the original 12-factor (Motivation) and 6-factor (Beliefs) models, like in the validation study by Kılınç, Watt, and Richardson (2012).
In order to determine if the measurement pattern of latent constructs remains invariant across different samples, we calculated configural (testing if the same items measure our constructs across groups), metric (testing for the group equivalency of the factor loadings) and scalar invariance (testing for the group equivalency of the item intercepts), in line with, e.g. (Fischer and Fontaine 2011; Putnick and Bornstein 2016) in Amos 24.0. We compared male and female teachers with presumption that the structure of the Motivations and Beliefs scales for the two groups would not differ.

After examining factorial structure of the FIT-Choice scale, its known-groups validity was explored. MANOVAs were applied to test for already internationally demonstrated differences in motivations and beliefs between Serbian pre-service class teachers, Social science and Humanities and Science and Engineering subject teachers (e.g. Glutsch and König 2019). Educational trajectories and disciplines and gender were independent variables, while 12 factors for Motivations and six factors for Beliefs served as dependent variables. Descriptive statistics for the entire sample and subgroups were performed, and Bonferroni post hoc tests were used for group comparisons.

4. Results
4.1. Model testing – factorial validity and reliability
4.1.1. Motivations for teaching
CFA for the 12 motivations, as postulated by Watt and Richardson (2007) yielded somewhat unsatisfactory global fit indices (see Table 2). Therefore, we performed an exploratory factor analysis (EFA), using Maximum likelihood extraction, Direct Oblimin rotation and specifying 12 factors, (like Fokkens-Bruinsma and Canrinus 2012). KMO value of .884 verified the sampling adequacy for the EFA. This model explained 65.14% of the variance. Five cross-loading items were registered (B7 from Intrinsic value, B8 from Job transferability, B29 from Time for family, B39 from Prior T&L experiences, and B53 from the Shape future of children factor), and subsequently deleted. A CFA with five omitted items was performed and the obtained model-fit proved to be very good (see Table 2).

Table 2. Goodness of fit indices derived from CFA for the Factors influencing choice of a teaching career scale (Motivations).

|                      | \( \chi^2 \) | df | CFI  | NFI  | RMSEA | AIC         |
|----------------------|-------------|----|------|------|-------|-------------|
| Original 12-factor model | 1718.821    | 599| .882 | .831 | .066  | 2002.821    |
| Adjusted 12-factor model | 930.817     | 429| .939 | .903 | .052  | 1194.817    |

Good models usually show a \( \chi^2/df \) ratio under 3, Comparative fit index (CFI) over .90, Normed fit index (NFI) over .90, and Root mean square error of approximation (RMSEA) under 0.6. The model with the lowest Akaike information criterion (AIC) is usually considered the most parsimonious (Byrne 1994; Ullman 2001).

Table 3. Goodness of fit indices derived from CFA for Beliefs about teaching scale.

|                      | \( \chi^2 \) | df | CFI  | NFI  | RMSEA | AIC         |
|----------------------|-------------|----|------|------|-------|-------------|
| Original six-factor model | 278.230     | 155| .969 | .934 | .043  | 388.230     |
| Adjusted six-factor model | 246.756     | 137| .973 | .941 | .043  | 352.756     |

Note. Good models usually show a \( \chi^2/df \) ratio under 3, Comparative fit index (CFI) over .90, Normed fit index (NFI) over .90, and Root mean square error of approximation (RMSEA) under 0.6. The model with the lowest Akaike information criterion (AIC) is usually considered the most parsimonious.
For further analysis, we opted for the adjusted 12-factor model, because it fits the data better than the original model and still highly corresponds to the theory. This model replicated 10 original factors (Watt and Richardson 2008; see Table 4 and Appendix A), added one factor postulated in the first model version – Bludging (Watt and Richardson 2007), and yielded one new factor. Cronbach alpha coefficients of internal consistency for all 12 subscales were good, ranging from .685 to .923 (see Table 4). Correlations among 12 latent motivation factors are presented in Table B1 in Appendix B.

4.1.2. Beliefs about teaching

The CFA for six perceptions and beliefs factors yielded acceptable global fit indices (see Table 3). Like for Motivations, the same EFA was performed with six fixed factors. One item’s (C14 for Expert career) loading proved to be low (.29), and it was subsequently removed. The EFA without that item showed KMO value of .788 and yielded six factors explaining 62.21% variance. A CFA for the adjusted six factors yielded slightly better results (see Table 3), so we relied on the adjusted model for further analyses.

The internal reliability of the scale proved to be acceptable (see Table 4). Cronbach alpha for the subscale Expert career was poor (α = .441), so subsequent analyses were performed without this scale. The correlations between five latent belief factors are presented in the Table B2 in Appendix B.

4.2. Invariance testing

We tested three levels of measurement invariance across genders (see Table 5 for Motivations and Table 6 for Beliefs), with the unconstrained (adjusted 12-factor) model representing a baseline model against which subsequent models were compared. From Table 5 we can see that the three models are not significantly worse than the baseline model.

Metric ($\Delta \chi^2 = 20.521$, $df = 21$, $p = .488$) and scalar ($\Delta \chi^2 = 68.589$, $df = 78$, $p = .768$) invariance for the Factors influencing choice of a teaching career scale were established comparing to the baseline (unconstrained model).

As for Beliefs, it was found that the three models fit the data in a similar way as the baseline unconstrained (adjusted 6-factor) model (see Table 6). Model comparison showed that metric and scalar models were satisfied ($\Delta \chi^2 = 19.359$, $df = 13$, $p = .317$ and $\Delta \chi^2 = 25.566$, $df = 21$, $p = .223$, respectively). Somewhat lower NFI for both Motivations and Beliefs might be explained by the sample size of the groups (Ullman 2001).

4.3. Serbian teachers’ motivation and beliefs about the teaching profession and groups comparison – known-groups validity

The highest rated reason for choosing a teaching career among Serbian pre-service teachers was Intrinsic value ($M = 6.14$). Mean scores for Personal utility value, including Bludging, and Social utility value were 4.12 and 5.37, respectively, while Fallback career was the lowest ranked factor. The participants were on average satisfied with their career choice ($M = 5.47$), although the Task demand ($M = 5.82$) and Task return ($M = 3.19$) ratio proved to be unfavourable (see Table 7). Descriptives for the three groups based on
Table 4. *Motivations for teaching and Beliefs about teaching*: Cronbach alpha reliabilities and CFA factor loadings (LX) for 12 motivation factors/subscales and six beliefs factors/subscales.

| Scale                                           | Subscale a | Item | LX  |
|-------------------------------------------------|------------|------|-----|
| Adjusted Factors influencing choice of a teaching career scale | .887 |       |     |
| Time for family**                               | .885       | B29  | .84 |
| Intrinsic value**                              | .773       | B1   | .78 |
| Prior T&L experience**                         | .923       | B17  | .89 |
| Enhance social equity*                         | .836       | B36  | .91 |
| Social influences*                             | .895       | B3   | .82 |
| Job security and Transferability***           | .810       | B14  | .73 |
| Work with children*                            | .877       | B13  | .77 |
| Shape future of children**                     | .805       | B9   | .79 |
| Ability*                                       | .814       | B5   | .81 |
| Fallback career*                               | .685       | B11  | .65 |
| Bludging***                                    | .831       | B4   | .81 |
| Make social contribution*                      | .772       | B6   | .75 |
| Adjusted Beliefs about teaching scale          | .779       |     |     |
| High demand*                                   | .645       | C2   | .60 |
| Expert career**                                | .441       | C10  | .41 |
| Social status*                                 | .879       | C4   | .67 |
| Salary*                                        | .911       | C1   | .89 |
| Social dissuasion*                             | .865       | D2   | .73 |
| Satisfaction with choice*                      | .860       | D1   | .59 |

* Subscales that entirely correspond to the original subscales.
** Subscales that correspond to the original subscales with only one item removed.
*** Subscales that slightly differ from the original subscales.
Table 5. Multigroup (male-female) confirmatory factor analysis for the Factors influencing choice of a teaching career scale (Motivations).

| Model            | $\chi^2$ | df  | CFI  | NFI  | RMSEA | AIC    |
|------------------|----------|-----|------|------|-------|--------|
| Configural invariance | 1567.487 | 858 | .911 | .826 | .044  | 2095.487 |
| Metric invariance | 1588.008 | 879 | .911 | .824 | .043  | 2074.008 |
| Scalar invariance | 1656.597 | 957 | .912 | .816 | .041  | 1986.597 |

Good models usually show a $\chi^2$/df ratio under 3, Comparative fit index (CFI) over .90, Normed fit index (NFI) over .90, and Root mean square error of approximation (RMSEA) under .06. The model with the lowest Akaike information criterion (AIC) is usually considered the most parsimonious.

Table 6. Multigroup (male-female) confirmatory factor analysis for the Beliefs about teaching scale (Beliefs).

| Model            | $\chi^2$ | df  | CFI  | NFI  | RMSEA | AIC    |
|------------------|----------|-----|------|------|-------|--------|
| Configural invariance | 550.577  | 287 | .934 | .872 | .046  | 736.577 |
| Metric invariance | 614.935  | 300 | .921 | .857 | .050  | 774.935 |
| Scalar invariance | 640.502  | 321 | .920 | .851 | .048  | 758.502 |

Good models usually show a $\chi^2$/df ratio under 3, Comparative fit index (CFI) over .90, Normed fit index (NFI) over .90, and Root mean square error of approximation (RMSEA) under .06. The model with the lowest Akaike information criterion (AIC) is usually considered the most parsimonious.

Table 7. Descriptive statistics for the entire sample and for the subsamples based on educational trajectories and disciplines for the entire FIT-choice scale (listed from highest to lowest rated on the entire sample for Motivations and Beliefs separately).

|                      | Entire sample (N = 433) | Class teachers (N = 109) | Subject teachers – Social Science and Humanities (N = 191) | Subject teachers – Science and Engineering (N = 133) |
|----------------------|-------------------------|---------------------------|-------------------------------------------------------------|------------------------------------------------------|
|                      | M          | SD         | M          | SD         | M          | SD         | M          | SD         |
| **Motivations for teaching** |            |            |            |            |            |            |            |            |
| Intrinsic value      | 6.14       | 1.084      | 6.05       | 1.12       | 6.16       | 1.05       | 6.17       | 1.10       |
| Shape future of children | 5.72       | 1.344      | 5.99       | 1.14       | 5.74       | 1.37       | 5.49       | 1.42       |
| Ability              | 5.43       | 1.157      | 5.59       | 1.01       | 5.30       | 1.26       | 5.50       | 1.10       |
| Work with children   | 5.41       | 1.558      | 5.92       | 1.18       | 5.10       | 1.73       | 5.43       | 1.47       |
| Enhance social equity | 5.21       | 1.508      | 5.64       | 1.27       | 5.14       | 1.53       | 4.95       | 1.59       |
| Prior T&L experience | 5.18       | 1.859      | 4.88       | 2.02       | 5.22       | 1.84       | 5.36       | 1.73       |
| Make social contribution | 5.12       | 1.462      | 5.28       | 1.32       | 5.17       | 1.47       | 4.91       | 1.54       |
| Time for family      | 4.95       | 1.732      | 5.24       | 1.51       | 4.58       | 1.85       | 5.24       | 1.64       |
| Job security and Transferability | 3.98       | 1.434      | 4.13       | 1.43       | 3.70       | 1.43       | 4.27       | 1.37       |
| Bludging             | 3.43       | 1.855      | 3.35       | 1.97       | 3.31       | 1.90       | 3.66       | 1.69       |
| Social influences    | 3.06       | 1.907      | 3.52       | 2.02       | 2.87       | 1.87       | 2.95       | 1.82       |
| Fallback career      | 1.78       | 1.162      | 1.80       | 1.31       | 1.74       | 1.00       | 1.83       | 1.26       |
| **Beliefs about teaching** |            |            |            |            |            |            |            |            |
| High demand          | 5.56       | 1.015      | 5.82       | .95        | 5.58       | .99        | 5.32       | 1.05       |
| Satisfaction with choice | 5.47       | 1.478      | 5.95       | 1.28       | 5.31       | 1.48       | 5.32       | 1.55       |
| Social dissuasion    | 3.66       | 1.952      | 3.31       | 1.95       | 3.91       | 1.98       | 3.60       | 1.87       |
| Social status        | 3.94       | 1.337      | 3.93       | 1.40       | 3.97       | 1.30       | 3.92       | 1.35       |
| Salary               | 2.45       | 1.439      | 2.56       | 1.56       | 2.49       | 1.42       | 2.30       | 1.36       |

M = mean; SD = standard deviation.

educational trajectories and disciplines yielded somewhat different results, mostly regarding the Motivations (see Table 7).

There were multivariate effects of educational trajectories and disciplines (Pillai’s Trace = 1.175, $F(12, 412) = 3.305, p = .000, \eta_p^2 = .088$) and gender (Pillai’s Trace = .089, $F(12, 412) = 3.346, p = .000, \eta_p^2 = .089$) for the Motivations, while multivariate interaction was non-significant (Pillai’s Trace = .042, $F(24, 826) = 0.733, p = .820, \eta_p^2 = .021$). There
were no significant univariate interactions between gender and educational trajectories and disciplines, so we proceeded with the analyses of their main effects.

Following Bonferroni correction, only one gender difference remained significant – female students reported higher values on Working with children and adolescents compared to males ($p = .003$), with the effect size being small ($\eta_p^2 = .021$). Based on their educational trajectories and disciplines, omnibus tests revealed that prospective teachers significantly differ on the following factors: Working with children/adolescents ($F(2, 430) = 10.226, p = .000, \eta_p^2 = .045$), Enhance social equity ($F(2, 430) = 6.706, p = .001, \eta_p^2 = .030$), Time for family ($F(2, 430) = 8.148, p = .000, \eta_p^2 = .037$) and Transferability and Security ($F(2, 430) = 7.161, p = .001, \eta_p^2 = .032$). Post hoc tests showed that prospective class teachers scored significantly higher than both groups of prospective subject teachers on Work with children/adolescents ($P_{Social} = .000, P_{Science} = .038$) as well as on Enhance social equity ($P_{Social} = .017, P_{Science} = .001$); they also proved to be more strongly motivated by Shape future of children than the prospective Science and Engineering teachers ($P_{Science} = .015$). Students from Social Science and Humanities faculties had lower scores compared to other groups on two factors: Time for family ($P_{Class} = .004, P_{Science} = .002$) and Transferability and Security ($P_{Class} = .035, P_{Science} = .001$).

MANOVA for the Beliefs about teaching showed multivariate effects of educational trajectories and disciplines (Pillai’s Trace $= .84, F(12, 838) = 3.078, p = .000, \eta_p^2 = .088$) and gender (Pillai’s Trace $= .046, F(6, 418) = 3.383, p = .003, \eta_p^2 = .042$), while multivariate interaction was again non-significant (Pillai’s Trace $= .023, F(12, 838) = 0.803, p = .648, \eta_p^2 = .011$).

After using Bonferroni correction, one significant gender difference appeared – females scored higher on High demand scale than males ($p = .000, \eta_p^2 = .041$). Omnibus univariate tests for educational trajectories and disciplines revealed differences on Satisfaction with career choice and High demand factor. Subsequent post-hoc tests showed that future class teachers reported higher satisfaction with their career choice compared to prospective subject teachers ($P_{Social} = .001, P_{Science} = .003$) and experienced significantly less social discouragement than students in Social Science and Humanities ($P_{Social} = .046$). Students in the Science and Engineering field evaluated the teaching profession as less demanding than both other student groups ($P_{Class} = .000, P_{Social} = .054$).

5. Discussion

The authors strove to gain a deeper understanding of the Serbian pre-service teachers’ motivation for the teaching profession by relying on a well-established and parsimonious theoretical model. Our first aim was to validate the FIT-Choice scale (Watt and Richardson 2007) in the Serbian context and to test measurement invariance across genders. The second aim was to determine prospective teachers’ motivations and beliefs about the teaching profession and compare them between different groups of teachers, based on their gender and educational trajectories and disciplines.
5.1. Structural validation of the FIT-Choice scale, reliability and measurement invariance

After the deletion of five items due to factor cross-loadings, a 12-factors model, similar to those proposed by Watt and Richardson (2007), demonstrated a good fit. Six original factors were entirely replicated, and four were replicated with the removal of one item per factor. In terms of differences, Bludging appeared as a separate factor from Time for family, and Job security and Transferability merged into one factor. Bludging and Time for family being separate is in line with the first version of the theoretical model (see Watt and Richardson 2007). Empirical merging of Job security and Transferability is theoretically defensible, given that both are included in the same higher-order factor – Extrinsic motivation, and given that Transferability has already proven to be irrelevant in certain contexts (Watt et al. 2012). We assume that Transferability appeared less relevant in the Serbian context due to low career mobility of Serbian teachers and low levels of cooperation with international partners, giving them poor chances to find teaching positions outside of Serbia (Kovács-Cerovic 2006). Similar findings were reported in Croatia (Jugović et al. 2012), suggesting that this subscale should be carefully interpreted in the countries where teachers do not have internationally recognisable qualifications. The reliability of the entire scale was high, with only Fallback career demonstrating a low reliability coefficient, which is in line with previous studies (Goller et al. 2019; Kilinç, Watt, and Richardson 2012; Watt et al. 2012). Moreover, the basic organisation of the construct Motivations was supported among male and female prospective teachers, and the loadings and intercepts were equivalent across groups.

A six-factor model for the Beliefs/Perceptions about teaching (with one item removed) fit the data well; however, the Expert career scale demonstrated very poor reliability. Although carefully translated, we believe that this scale’s items were not sufficiently clear to our participants, who might understand expert knowledge, didactics and subject didactics skills differently from how they are defined in theory. This can be attributed to the quality of teacher education (Simić 2014), where some prospective subject teachers attend only a few college courses for developing their teaching competences. Like for Motivations, we proved the psychometric equivalence of the construct Beliefs across genders.

5.2. Teaching motivations and beliefs about teaching in Serbia and known-group validation

Serbian pre-service teachers had the highest motivation scores for Intrinsic career value, followed by Social utility value and Perceived teaching ability, while the lowest scores were on Personal utility value and Fallback career. This means that Serbian prospective teachers choose the teaching career because of their love for teaching and working with youth, which they believe can lead towards making a wider social contribution, while the job security and shorter working hours are less valued. As for Socialisation influences, prior teaching and learning experiences had a strong impact on career choice, suggesting the importance of good teacher role models, while the influences of significant others were low.
These results match previous findings on motivation for choosing the teaching profession of Serbian pre-service and in-service teachers (Marušić Jablanović 2014; Simić et al. 2013; Simić 2015). They are also in accordance with results obtained in Croatia (Jugović et al. 2012). The profile of the pre-service teachers’ motivations in Serbia was more alike to the profile of their peers from Western countries (see Watt et al. 2012), than those from Turkey or China (see Kilinc, Watt, and Richardson 2012; Liu and Qi 2006). This could be attributed to Serbia’s strong inclination towards the European Union with the beginning of democratic changes in 2000, which resulted in young people (particularly those college educated and living in urban areas) being EU-oriented and adhering to values promoted in Western countries (Popadić, Pavlović, and Mihailović 2019; Tomanović and Stanojević 2015).

As for Beliefs about teaching, our participants perceive teaching as a demanding career with moderate social status. These findings are in accordance with previous studies with Serbian teachers, indicating major dissatisfaction with the imbalance between levels of autonomy and status in society, on the one hand, and amount of administrative work and other requirements, on the other (OECD 2013; Pantić and Čekic Markovic 2012; Simić 2015). Findings on perceptions of the teaching profession are also in line with those obtained in Turkey, Australia, USA and Germany (see Watt et al. 2012). The difference is that Serbian prospective teachers clearly consider teachers’ income more unfavourable than pre-service teachers from other countries where FIT-Choice was applied (see Kilinc, Watt, and Richardson 2012; Watt et al. 2012); their perceptions match those of teachers from Ghana (Salifu, Alagbela, and Ofori 2018). This can be explained by the fact that in Serbia, average teacher salaries were below the state average salary at the time of research (European Commission 2018; OECD 2016). Despite this, our respondents expressed greater satisfaction with their career choice than those from Turkey and China, though somewhat lower than pre-service teachers from Croatia and Germany, and much lower than their peers from Australia and the USA. This could be explained by differences in overall socioeconomic situation, and to a certain extent, by slight differences in the sample structures (for example, in the Croatian study, only class teachers were included).

It was confirmed that female students are more enthusiastic about working with children (Müller, Alliata, and Benninghof 2009; Sinclair 2008). This can be explained through internalised traditional beliefs about gender roles that are particularly influential in Serbian society, specifically that females are more caring and competent to work with children (Pešić 2006). However, they perceived teaching as a more demanding job than their male counterparts, probably due to their traditional orientation towards raising children, which makes females more aware of the demands, subsequently having higher expectations of themselves. In line with dominant social values and expectations, we can also assume that females anticipate stronger conflict between work and family roles, and consequently perceive the future job as more demanding. Prospective class teachers were more altruistically motivated and reported higher career choice satisfaction than prospective subject teachers. Although the system requires pre-service subject teachers to have pedagogical preparation, their motivation for choosing a teaching career is clearly less altruistic and child-centred than the motivation of pre-service class teachers. This can be explained by different value priorities, with a higher rating of universalism and benevolence values among the prospective class teachers (Marušić Jablanović 2018).
Another interpretation is that different pathways of professionalisation, leading to different processes of identity formation, are responsible for this difference. Due to the organisation of their pre-service education and various career opportunities, we can expect that academic sub-identity or the identity of the subject matter expert, as proposed by Beijaard, Verloop, and Vermunt (2000), takes precedence over the pedagogical and didactical sub-identities in the majority of subject teachers.

6. Conclusions and implications for teacher education

Given that the deviations from the FIT-Choice scale’s (Watt and Richardson 2008) factor structure determined in our study had already been recognised elsewhere (e.g. Kičin, Watt, and Richardson 2012) and are theoretically justifiable (Watt and Richardson 2007), we concluded that the Serbian version of the FIT-Choice scale has an acceptable structural and known-groups validity and reliability. Only the Expert career scale should be reformulated to contain fewer technical terms and more descriptions of teachers’ behaviour and skills. When used in countries with low teacher career mobility and internationally unrecognised teacher qualifications, the Transferability items should either be reformulated to correspond better to the participants’ experience and opportunities, or the subscale determined in this study that merges Security and Transferability should be applied.

The motivations for teaching and perceptions of the teaching profession in Serbia are more similar to those in Western European countries, than they are to Turkey or China. The current study suggests that despite (maybe – indeed because of) the unfavourable socioeconomic situation, Serbian prospective teachers are driven by a desire to teach, work with children and contribute to their better future. Strong intrinsic and altruistic motivations might account for the greater satisfaction with career choice than in Turkey and China, despite the unsatisfactory wages and low status of the teaching profession in Serbia. This might reflect their somewhat idealised view of the profession (primarily – with direct interaction with students), a phenomenon already recognised in the Serbian context (see e.g. Simić, Jokić, and Vukelić 2017; Simić 2014). Therefore, we recommend providing pre-service teachers with more opportunities for school practice and more mentor support, which could prevent ‘reality shock’ (Veenman 1984) once they enter schools. We also recommend more continuous support, starting from initial teacher education, in improving coping mechanisms that can prevent burnout. Intellectually fulfilled, enthusiastic but realistic teachers would in turn represent great role models to their students and consequently motivate some of them to become teachers, as we saw that prior school experience played an important role in choosing a teaching career.

Knowing that intrinsic and altruistic motivations are related to a more favourable job attitude and smaller attrition intentions (Simić 2015), we can expect different behavioural patterns and career cycles of class and subject teachers. With fewer possibilities for finding a career elsewhere, and motivated mostly by Intrinsic value, Social utility value and Social influences, class teachers are expected to be more devoted and satisfied with their job, like highly engaged ‘persisters’, a category recognised by Watt and Richardson (2008). Subject teachers, and particularly those in Science and Engineering, being more motivated by Job transferability and Security and less by altruistic motives than the other groups of pre-service teachers can be considered similar to ‘low engaged desisters’ (Watt and Richardson 2008). Therefore, they might need even more psychological support during
their studies, and their initial education should involve more psychological and pedagogical courses and school practice than it currently does. Given that initial teacher education proved to be the main generator of teacher professional identity (Vranješević and Vujisić-Živković 2013), in the case of both groups of pre-service subject teachers it should involve more reflection on the relationship between personal and professional identity and support the development of those aspects of identity that are related to ‘being a teacher’ rather than ‘being a subject matter expert’. This should include ‘know-what’ knowledge regarding professional roles or sub-identities that a modern teacher is expected to assume (e.g. reflexive practitioner, interculturally sensitive teacher, leader, etc.), as well as ‘know-how’ knowledge that provides them with practical tools for developing these roles and enacting them in the classroom. We would also recommend more professional and psychological support during the induction period, although one might expect them to fluctuate when opportunities to work in IT, bank, pharmacy etc. appear.

Finally, we can suggest using the FIT-Choice scale in the process of professional selection, career guidance and professional coaching of pre- and in-service teachers, where it can be used as both assessment and self-assessment tool.

7. Limitations

For the model to have a good fit, five items were removed from the Motivations for teaching scale, which resulted in having five factors with only two items. However, two-item subscales have been acknowledged in many studies applying the FIT-Choice scale (see e.g. Jugović et al. 2012; Klinč, Watt, and Richardson 2012). The Expert career and the Transferability subscales proved to be more context-dependent than other subscales, so the future studies need to take into account some sociocultural-specific issues, such as teacher mobility and the characteristics of initial teacher education.

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## Appendices

### Appendix A

**Table A1. Serbian translation of the items for the FIT-Choice motivations factors.**

| Factor                          | Item in Serbian Code | Item in English                                                                 |
|---------------------------------|----------------------|---------------------------------------------------------------------------------|
| Perceived teaching abilities    | B5                   | I have the qualities of a good teacher.                                         |
|                                 | B19                  | I have good teaching skills.                                                     |
|                                 | B43                  | Teaching is a career suited to my abilities.                                    |
| Intrinsic career value          | B1                   | I am interested in teaching.                                                     |
|                                 | B7**                 | I have always wanted to be a teacher.                                           |
| Fallback career                 | B12                  | I like teaching.                                                                 |
|                                 | B11                  | I was unsure of what career I wanted.                                           |
|                                 | B35                  | I was not accepted into my first-choice career.                                 |
|                                 | B48                  | I choose teaching as a last-resort career.                                      |
| Job security                    | B14                  | Teaching will offer a steady career path.                                       |
|                                 | B27                  | Teaching will provide a reliable income.                                        |
|                                 | B38                  | Teaching will be a secure job.                                                   |
|                                 | B2*                  | Part-time teaching could allow more family time.                                |
| Time for family                 | B16                  | Teaching hours will fit with the responsibility of having a family.            |
|                                 | B29**                | School holidays will fit in with family commitments.                             |
| Bludging                        | B4                   | As a teacher I will have lengthy holidays.                                      |
|                                 | B18                  | As a teacher I will have a short working day.                                   |
| Job transferability             | B8**                 | Teaching will be a useful job for me to have when travelling.                   |
|                                 | B22                  | A teaching qualification is recognised everywhere.                               |
|                                 | B45                  | A teaching job will allow me to choose where I want to live.                    |
| Shape future of children/adolescents | B9              | Teaching will allow me to shape child/adolescent values.                        |
|                                 | B23                  | Teaching will allow me to influence the next generation.                        |
|                                 | B53**                | Teaching will allow me to have an impact on children/adolescents.              |

(Continued)
Table A1. (Continued).

| Enhance social equity | B36 | Teaching will allow me to raise the ambitions of under-privileged youth. |
|-----------------------|-----|---------------------------------------------------------------------|
|                       | B49 | Teaching will allow me to benefit the socially disadvantaged.         |
|                       | B54 | Teaching will allow me to work against social disadvantage.           |
| Make social contribution | B6  | Teaching will allow me to provide a service to society.               |
|                       | B20 | Teachers make a worthwhile social contribution.                       |
|                       | B31 | Teaching enables me to give back to society.                          |
| Work with children    | B13 | I want a job that involves working with children/adolescents.         |
|                       | B26 | I want to work in a child-centred environment.                        |
|                       | B37 | I like working with children/adolescents.                             |
| Prior teaching and learning experiences | B17 | I have had inspirational teachers.                                   |
|                       | B30 | I have had good teachers as a role models.                           |
|                       | B39** | I have had positive learning experiences.                           |
| Social influences    | B3  | My friends think I should become a teacher.                           |
|                       | B24 | My family thinks I should become a teacher.                           |
|                       | B40* | People I have worked with think I should become a teacher.            |

*Serbian adaptation of item; **Items deleted to enhance subscale reliabilities and CFA fit indices.
## Appendix B

### Table A2. Serbian translation of the items for the **FIT-Choice perceptions** factors.

| Factor                  | Item code | Item in English | Item in Serbian                                                                 |
|-------------------------|-----------|----------------|-------------------------------------------------------------------------------|
| Expert career           | C10**     | Do you think teaching requires high levels of expert knowledge? | Da li smatraš da nastavnici treba da budu stručnjaci za oblast koju predaju? |
|                         | C14**     | Do you think teachers need high levels of technical knowledge? | Da li smatraš da nastavnici zahteva vrlo razvijena metodička znanja?          |
|                         | C15**     | Do you think teachers need highly specialised knowledge? | Da li smatraš da nastavnici treba da imaju razvijena usko stručna znanja? |
| High demand             | C2        | Do you think teachers have a heavy workload? | Da li smatraš da nastavnici imaju mnogo posla?                                |
|                         | C7        | Do you think teaching is emotionally demanding? | Da li smatraš da je posao nastavnika emocionalno zahtevan?                     |
| Social status           | C11       | Do you think teaching is hard work? | Da li smatraš da je posao nastavnika težak?                                 |
|                         | C4        | Do you believe teachers are perceived as professionals? | Da li misliš da ljudi doživljavaju nastavnike kao stručne osobe?               |
|                         | C8        | Do you believe teaching is perceived as a high-status occupation? | Da li misliš da se posao nastavnika smatra poslov koji ima visok status u društvu? |
|                         | C12       | Do you believe teaching is a well-respected career? | Da li misliš da je posao nastavnika visoko cenjen?                             |
| Salary                  | C1        | Do you think teaching is well paid? | Da li misliš da je posao nastavnika dobro plaćen?                             |
|                         | C3        | Do you think teachers earn a good salary? | Da li misliš da nastavnici dobro zaradjuju?                                    |
| Social                  | Were***   | You encouraged to pursue careers other than teaching? | Drugi su me navodili na to da odaberem neki drugi posao, a ne posao nastavnika. |
|                         | D4        | Did others tell you teaching was not a good career choice? | Drugi su mi govorili da posao nastavnika nije dobar izbor.                     |
|                         | D6        | Did others influence you to consider careers other than teaching? | Drugi su me navodili da razmislim o izboru nekog drugog zanimanja.             |
| Satisfaction with choice*** | D1   | How carefully have you thought about becoming a teacher? | Pažljivo sam promislilo/la kada sam donosio/la odluku o tome da postanem nastavnik. |
|                         | D3        | How satisfied are you with your choice of becoming a teacher? | Drago mi je što sam odlučio/la da postanem nastavnik.                         |
|                         | D5        | How happy are you with your decision to become a teacher? | Zadovoljan/na sam svojim izborom da postanem nastavnik.                       |

*Serbian adaptation of item; **Items deleted to enhance subscale reliabilities and CFA fit indices; ***For part D of the questionnaire that entails subscales Social dissuasion and Satisfaction with choice, the formulation of the original items was changed – instead of questions, the items were defined in the form of statements. Meaning of the items remained unaltered.
Table B1. Correlations between latent motivation factors.

|            | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. |
|------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|
| 1. Time for family |    |    |    |    |    |    |    |    |    |     |     |     |
| 2. Intrinsic value  | .10 |    |    |    |    |    |    |    |    |     |     |     |
| 3. Prior T&L experience | .16 | .25 |    |    |    |    |    |    |    |     |     |     |
| 4. Enhance social equity | .04 | .38 | .29 |    |    |    |    |    |    |     |     |     |
| 5. Social influences  | .32 | .10 | .19 | .21 |    |    |    |    |    |     |     |     |
| 6. Job security and Transferability | .60 | .19 | .21 | .17 | .37 |    |    |    |    |     |     |     |
| 7. Work with children  | .30 | .45 | .31 | .49 | .25 | .33 |    |    |    |     |     |     |
| 8. Shape future of children | .08 | .43 | .22 | .59 | .18 | .16 | .43 |    |    |     |     |     |
| 9. Perceived teaching ability | .29 | .59 | .28 | .34 | .28 | .35 | .45 | .39 |    |     |     |     |
| 10. Fallback career  | .03 | -.22 | -.16 | -.13 | .06 | .12 | -.23 | -.19 | -.17 |     |     |     |
| 11. Bludging  | .58 | -.13 | .03 | -.17 | .30 | .47 | -.04 | -.16 | .10 | .29 |    |     |
| 12. Make social contribution | .14 | .44 | .28 | .51 | .26 | .25 | .42 | .60 | .48 | -.09 | -.07 |     |

Bolded numbers denote p < .01

Table B2. Correlations between latent beliefs factors.

|            | 1. | 2. | 3. | 4. | 5. |
|------------|----|----|----|----|----|
| 1. High demand |    |    |    |    |    |
| 2. Social status | .10 |     |    |    |    |
| 3. Salary  | -.04 | .48 |     |    |    |
| 4. Social dissuasion | -.00 | -.07 | -.06 |     |    |
| 5. Satisfaction with choice | .24 | .33 | .16 | -.00 |     |

Bolded numbers denote p < .01