



# An ordinary moonlighting activity? Determinants of the provision of private tutoring by Czech schoolteachers

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## ABSTRACT

Teacher moonlighting (teachers working other jobs in addition to teaching) may have positive as well as negative implications. In the context of post-socialist countries, the provision of private tutoring is one of the common forms of teacher moonlighting. The aim of the paper is to analyse the prevalence and factors that are associated with a) having a paid job in addition to one's regular teaching obligations; b) provision of private tutoring among teachers. Results are drawn from a representative sample of 494 Czech teachers of academic school subjects in lower secondary schools who responded to an online questionnaire survey. Male teachers working part-time, with shorter professional experience, higher household financial burden and lower satisfaction with teacher salaries were more likely to moonlight. The provision of private tutoring was only associated with shorter professional experience and the teaching of core subjects, suggesting that Czech teachers' motivation to provide private tutoring is currently not primarily financial.

## 1. Introduction

In one scene of a Czech comedy film *Gympf*, students returning from a party in the late evening take a taxi home. To their surprise, they discover the taxi driver is their physics teacher. To his embarrassment, the students make fun of him and offer him a large tip, after he admits working this additional job in order to make a living for his family, because the school salary was insufficient (Vorel, 2007, 0:59:20). Although the film was meant to be a comedy drama, to a large extent, it reflected the Czech reality and pointed to the phenomenon of teacher moonlighting, a practice where teachers work at other jobs in addition to teaching, to supplement their salaries (Smith and Cooper, 1967).<sup>1</sup> Specifically, in the post-socialist region, the purchasing power of teachers' salaries has significantly declined during the 1990s, and official salaries were often insufficient to sustain teachers' families at even basic levels. As a result, teachers were forced to find alternative occupations or other ways to supplement their incomes. For many of them, an obvious option was the provision of private tutoring (Silova and Eklof, 2013; Bray, 2020). In the scholarly literature, the term shadow education is often used as an umbrella term for private tutoring, with

three specific characteristics: a) private (tutoring is provided by individuals or organisations in exchange for a fee); b) supplemental (shadow education supplements school instruction and is provided outside regular school hours); and c) academic subjects, such as tutoring in mathematics or English, but not in fields taught mainly for leisure and/or personal development (Yung and Bray, 2017). Besides the positive aspects of shadow education, studies on shadow education have analysed numerous issues including, but not limited to socioeconomic inequalities maintained or exacerbated by shadow education itself or its backwash on mainstream schooling (e.g., Bray, 2020; Matsuoka, 2018; Allen, 2016).

The shadow education literature has tracked the phenomenon of schoolteachers who work as private tutors. Some studies have examined the roles of teachers in shaping the demand for teacher-supplied private tutoring (e.g., Silova et al., 2006; Bray et al., 2020; Sieverding et al., 2017), the reasons for teacher involvement in tutoring (e.g., Popa and Acedo, 2006; Kobakhidze, 2018) or the power relations between tutored students and teachers, and the associated corruption risks (Zhang, 2014; Kobakhidze, 2014; Khaydarov, 2020). However, only a few studies (e.g., Liu and Bray, 2020a; Bray et al., 2016, 2020) have investigated the

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<sup>1</sup> For some, "moonlighting" may have negative connotations, with associations of undeclared or illicit income. Nevertheless, Manzella (2015, 2019) examined the semantic meanings of moonlighting in a number of languages and found that "moonlighting does not always take on a negative connotation in English" (Manzella, 2015, p. 13). In this paper, we use "moonlighting" as a neutral term synonymous to multiple job-holding without implying any negative connotations.

pervasiveness of PT provision by schoolteachers, and as far as the authors are aware, within this subtheme no scholarly attention was paid to the quantitative assessment of individual and context-related predictors of the provision of private tutoring (e.g., the socio-demographic characteristics of teacher-tutors) within the wider context of further moonlighting activities that teachers are involved in. Existing studies dealing with teacher-supplied private tutoring more often explored the phenomenon through qualitative inquiries, and these did not allow for further generalisations to the whole population. Previously, no study on teacher moonlighting had been conducted in the Czech Republic, and as such, the example of this country may be illustrative of similar patterns in other countries.

In order to address the above-identified research gap, the purpose of this study is 1) to identify the prevalence of moonlighting (in general) and of the provision of private tutoring among Czech lower secondary schoolteachers, and 2) to assess the factors underlying their involvement in these activities.

This study contributes both to the broader literature focused on the determinants of multiple-job holding (Campion et al., 2020) among teachers, as well as to the shadow education literature focused on teacher-supplied private tutoring. It conceptualizes the provision of private tutoring as a special case of moonlighting, one that is not determined by the same factors as the general involvement of teachers in additional jobs. Contrary to expectations, our findings suggest that financial motives are currently not the primary reason to provide private tutoring as reported by Czech teachers, unlike the practice of moonlighting in general.

The paper is structured in a following manner. First, implications of the practice and a conceptual framework for the identification of its predictors are elaborated. The reader will then be introduced to the wider context of the research site. Next, the study design, research methods, data analysis procedures and variables are described. Further on, the paper presents the results of the descriptive analyses and logistic regression models. The implications of the findings are discussed in the last section of the paper.

### 1.1. Reasons for teacher moonlighting and PT provision

Research studies generally indicate that the main reason for (teacher) moonlighting is the need to supplement base salaries by earning additional money. Financial motivations are often cited in the shadow education literature as a prominent reason why teachers provide private tutoring, especially in the post-socialist region (e.g., Silova et al., 2006; Kobakhidze, 2018). However, many teachers appreciate their moonlighting jobs, which become important facets of their lives, many would not give them up even if their teacher salaries were increased (Blair, 2018, p. 2) and this includes those who moonlight as private tutors. Besides a *source of income*, private tutoring provision can be perceived as a “mission”, giving teachers a sense of self-realisation and satisfaction, stemming from helping the tutees to learn, achieve and improve; or a form of *professional development*, i.e., private tutoring motivates the teachers to experiment with new methods, use different teaching materials, find new ways of individualising their instruction, or to learn new subject matter in order to satisfy the student’s needs (Kobakhidze, 2018; Werbińska et al., 2019). Furthermore, some teachers may assume that the provision of private tutoring increases their social status, for example, when a teacher’s tutees achieve good exam results (Popa and Acedo, 2006; Kobakhidze, 2018). Some teachers may also be motivated to take up private tutoring due to the relative flexibility in the pedagogic approaches it allows, or for organisational arrangements with fewer bureaucratic obligations compared to the formal education systems (Bray, 2020), often with fewer pupils in the classroom and thus better opportunities to individualize their teaching methods and content.

### 1.2. Implications of moonlighting (in tutoring) for teachers

Having a secondary job may help teachers to develop more positive self-concepts, as it provides the realisation that they could be successful at something other than teaching (Raffel and Groff, 1990; Parham and Gordon, 2011), and in some cases, multiple job-holding moderates the negative effects of school-related challenges, as well as the effects the difficulties of balancing work with other activities has on professional well-being (Sappa et al., 2015). On the negative side, moonlighting outside of the education sector may potentially push teachers into other careers and takes time away from their work in the classroom. Based on a qualitative inquiry among five American moonlighting teachers, Parham and Gordon (2011) found that the practice of moonlighting meant less available time for other activities and aspects of the teachers’ lives, and negatively affected school instruction (e.g., lack of time for leisure activities or for planning school instruction, student assessments carried out during “down time” at the moonlighting site) or collaboration with a schoolteacher’s colleagues. This led to increased stress, worsened their perceptions of the fairness of their teaching salaries by making them confident they could earn more in a different job. Respondents also felt that moonlighting reduced their opportunities to assume leadership roles as teachers. Last, but not least, respondents reported that moonlighting had negatively affected their personal lives (lack of time for friends or relatives) and health (low stamina, physical exhaustion, lack of exercise etc.).

In addition, teachers’ involvement in the private tutoring may also have specific implications, because it may be related to corruption or unethical practices (Bray et al., 2016). For example, Popa and Acedo (2006) reported that Romanian parents were aware of their schoolteachers’ financial situation, and asked them to tutor their children with implicit (or even explicit) expectations they would receive advantages such as better grades in exchange (see also Kobakhidze, 2014). Teachers who moonlight as tutors have to juggle between these two inseparable dual roles (teacher and tutor), which imply different responsibilities and social expectations, sometimes resulting in conflict and forced trade-offs, since a reduced commitment to one role or the other could be risky (Kobakhidze, 2018, p. 113–119).

### 1.3. Context of the research site

As a former socialist country, the Czech Republic has undergone a nation-wide transition since the 1990s. The democratisation of society, pluralisation of policy and marketisation of the economy have influenced every sphere of social life. The entire education system underwent deideologisation, deetatation and decentralisation (Průcha and Walterová, 1992; Greger and Walterová, 2007). However, despite political proclamations, the education sector has not become an economic priority. This was reflected in low school budgets and consequently, Czech teachers’ purchasing power became comparatively lower than in other developed countries.

At the beginning of the transformation, the prestige of the teaching profession was rather low. This was a legacy of the previous requirement for teacher conformity and subordination to ideological and political control. During the 1990s, active teacher groups formed and led grass-root efforts towards progressive change in education. The prestige of the profession gradually increased, but teachers’ salaries continued to remain low in the following decades. Additional jobs were one way teachers could supplement their financial deficits and ensure a better living standard (Mervartová, 2016).

The Teacher Act (*Zákon o pedagogických pracovnících*, 2004) defined the general status of teacher, their categories and tertiary education as a precondition for the qualification of every teacher category (master’s degree for teaching at levels ISCED 1–3). Standards of quality and the professional development of teachers have been discussed since the promulgation of the Act (Spilková and Tomková, 2010), but until recently teacher salaries were outside of the attention of education

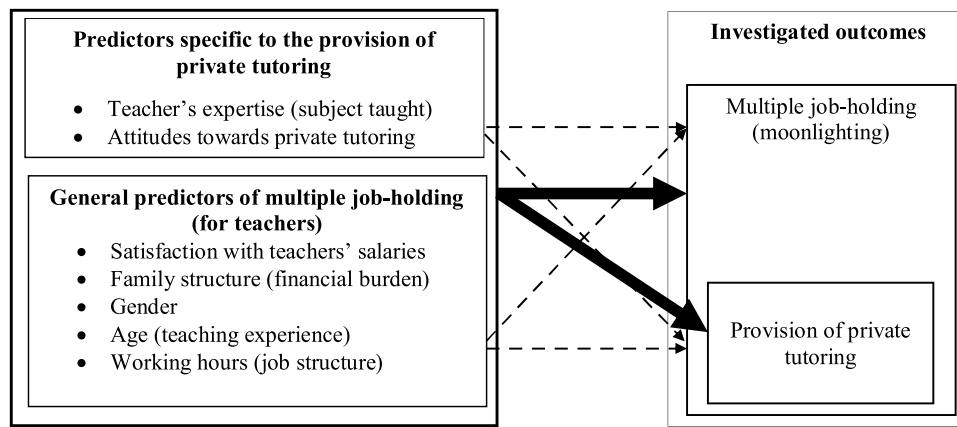


Fig. 1. Conceptual framework of predictors of teacher moonlighting and provision of PT.

policy. In 2017, they were still among lowest salaries in OECD countries and represented only 61 % of the average salary of tertiary educated employees in the Czech Republic (Münich and Smolka, 2019). Czech teachers' satisfaction with their salaries was 10 percentage points lower than the EU average, and 78 % of Czech teachers considered an increase in salary to be a priority and an important issue for the social status of the profession (Boudová et al., 2020).

Since 2018, teacher salaries are one of the most discussed topics, and several rounds of salary increase have taken place, although the raise has more or less followed the general trend in other sectors of economy. There is new hope due to the government's promise that in 2021, teacher salaries will rise above the average for the public sector (Münich and Smolka, 2019). The fulfilment of this promise should improve their financial situation and give teachers more freedom when deciding whether or not to work additional jobs.

#### 1.4. Conceptual framework

The conceptual framework for the identification of the predictors of teachers' provision of private tutoring in this study is based on the general framework of moonlighting predictors developed by [Campion et al. \(2020\)](#).<sup>2</sup> These authors identified, besides others, age, gender, family demographics, primary job structure<sup>3</sup> and financial motivation as universal predictors of multiple-job holding. In addition, predictors specific to the provision of private tutoring by schoolteachers were identified, based on a review of the literature in the shadow education field, and added to the conceptual framework (Fig. 1).<sup>4</sup>

The following paragraphs further elaborate these predictors based on a review of the relevant literature on teacher moonlighting and their involvement in the provision of shadow education.

<sup>2</sup> In their integrative systematic review, [Campion et al. \(2020\)](#) analysed 184 peer-reviewed articles published since 1960 on the topic of multiple-job holding from various disciplines and proposed a conceptual framework of predictors and mediators of multiple job-holding. Interestingly, only seven papers (2.2%) in their sample were from the field of education.

<sup>3</sup> For example, occupations with non-traditional shifts such as firefighters or police, for whom the organisation of work time provides additional opportunities to moonlight ([Campion et al., 2020](#)). Teachers could also be included in the same category.

<sup>4</sup> Satisfaction with teacher salaries was found to be relevant by literature on both teacher moonlighting and shadow education. Thus, it was included in the group of general predictors of multiple job-holding, which includes the provision of private tutoring as a specific case of moonlighting.

#### Private tutoring provision-specific predictors

**Subject taught.** Subjects most in demand in shadow education are “ones which are essential for advancement” ([Bray, 2011, p. 31](#)). In most education systems, these are foreign languages (most often English), mathematics, and the national language. In the Czech Republic, [Štastný \(2016\)](#) showed that the subjects most in demand for private tutoring lessons among upper-secondary senior students were English and mathematics. [Terreros \(2018\)](#) found a similar popularity for English and Mathematics among lower-secondary pupils, and additionally also Czech language. The demand for mathematics and Czech language could be attributed to the fact that they are a part of the entrance examinations to upper-secondary education. This suggests teachers of these subjects are in higher demand compared to teachers of other academic school subjects, and therefore more likely to provide private tutoring as a moonlighting job.

**Attitudes towards private tutoring.** Previous studies of schoolteachers' attitudes towards private tutoring included groups of both tutoring as well as non-tutoring teachers (e.g., [Wang and Bray, 2016](#); [Alkan et al., 2017](#); [Khaydarov, 2020](#)), but did not focus on whether the attitudes towards the phenomenon differed between the two groups, or asked only those teachers who actually provided tutoring ([Kobakhidze, 2014](#); [Popa and Acedo, 2006](#)). For example, in their analysis of Hong Kong teachers' attitudes towards private tutoring, [Wang and Bray \(2016\)](#) found that teachers held very ambivalent attitudes towards private supplementary tutoring – while some teachers had the positive perception that their students' attendance was a sign of effort, that tutoring was a means to assist parents who are unable to offer academic guidance to their children, or simply because it exposed the students subject knowledge, others viewed their students' participation in the practice negatively, mainly due to the high pressure and academic burden associated with the extensive use of private tutoring. Some teachers may also feel guilty about the participation of their pupils in remedial tutoring, blaming themselves for failing to teach them successfully. In this study, we assumed that in order to avoid internal conflicts, teachers who provide PT are also more likely to have more positive attitudes towards PT and student involvement in it.

#### General predictors of teacher moonlighting

**Satisfaction with teachers' salaries.** For many teachers, moonlighting is mainly motivated by the poor salaries (e.g., [Parham and Gordon, 2011](#); [García and Weiss, 2019](#)). [Silova and Eklof \(2013, p. 393–395\)](#) observed that in countries of the former Eastern Bloc (including today's Czech Republic), the transformation process led to a significant drop in teachers' salaries, while the introduction of a free market opened up new

opportunities for them to increase their income. Financial motivation is an obvious issue in many of the countries of the former Eastern Bloc (e.g. Popa and Acedo, 2006; Kobakhidze, 2014) and seems to be a significant factor influencing teachers' decisions to provide private tutoring services. Despite recent salary increases, the Czech teachers are still among some of the worst remunerated in OECD countries (see 1.3), therefore, it is a legitimate assumption to consider that financial motivation may be one of the most important factors leading Czech schoolteachers to provide private lessons, or more generally, to holding an additional job.

**Gender.** Historically, men are more likely to moonlight, especially in certain occupations, of which teaching is a typical example (Campion et al., 2020). This pattern was found in studies from countries as diverse as Tanzania (Timothy & Nkwama, 2017), USA (Betts, 2004; Winters, 2010) or Switzerland (Sappa et al., 2015). In Cambodia, Bray et al. (2016, p. 296) analysed a small sample of 60 schoolteachers, of which 40 % of the female teachers reported providing private tutoring, compared to 61.9 % of male teachers.

**Family size.** Larger families imply lower probability of multiple-job holding, especially for women with younger children, however as children grow older and attend school, mothers are more likely to moonlight than fathers (Campion et al., 2020). In the US, Fitchett et al. (2016) found that married or partnered teachers were less likely to moonlight outside of the education sector, including moonlighting in teaching or tutoring. On the other hand, Timothy and Nkwama (2017) found that marital status had no effect on the likelihood of moonlighting. Winter's (2010) analysis of the US Current Population Survey dataset has also not shown the number of children as a significant factor underlying moonlighting.

**Age.** Evidence reviewed by Campion et al. (2020) suggests that younger workers are more likely to work multiple jobs than older workers. However, studies in the field of education show ambivalent findings, supporting relationships in both directions depending on the context. For example, while Bobbitt (1988) found that teacher moonlighters in the USA tended to be younger than non-moonlighters, Winters (2010) found no relationship between teacher age and moonlighting; and Timothy and Nkwama (2017) found that older Tanzanian teachers were more likely to moonlight. Teacher age is usually closely related to teaching experience (OECD, 2019), and a survey in Switzerland showed that teachers in the early stages of their careers (beginning teachers) were more likely to hold multiple jobs (Sappa et al., 2015). In Cambodia, Bray et al. (2016, p. 296) analysed a small sample of 60 schoolteachers and found that lower proportions (40 %) of young teachers of ages up to 30 compared to older schoolteachers (55.6 %) reported providing private tutoring, something which also concurred with a further finding, that teachers with five or less years of teaching experience were less likely to provide private tutoring (42.9 %), compared to more experienced teachers (75 %).

**Working hours.** Earlier studies of multiple job-holding defined moonlighters as people who combined primary full-time jobs with secondary part-time jobs for economic reasons. In recent surveys, however, the picture shown is more heterogeneous as a growing number of multiple jobholders combine two or more part-time jobs as a consequence of the widespread use of non-standard contracts in the labour market (Sappa et al., 2015). Whilst earlier studies of teacher moonlighters excluded part-time teachers from their analyses (e.g., Betts, 2004; Bobbit, 1988), more recent studies included both part time and full-time teachers and explored their inclinations to hold additional job. For example, in Switzerland Sappa et al. (2015) found that people who work as part time teachers are also more likely to hold additional jobs. Similarly in Brazil, Both et al. (2016) analysed a sample of 1645 physical education teachers and found that 56 % of part-time teachers held additional job, compared

**Table 1**  
Lower-secondary school sample composition.

	Mainstream	Academic	Total
Small	10	3	13
Medium	10	4	14
Large	12	4	16
<b>Total</b>	<b>32</b>	<b>11</b>	<b>43</b>

Source: field research

to 44 % of full-time teachers.

## 2. Methods

### 2.1. Study design

This study is a part of a larger project, whose overall aim was to identify and analyse the relationships between mainstream and shadow education systems. The project employed convergent parallel design (Creswell, 2012), meaning both quantitative and qualitative data were collected simultaneously between 2018–2019. This paper is based primarily on the quantitative data that were collected from lower-secondary schoolteachers through a questionnaire survey.

### 2.2. Sampling

A stratified two-stage probability sampling design was employed. The sampling frame was obtained from the Ministry of Education and consisted of 3,037 schools. These were divided into six strata according to a) school type (lower-secondary mainstream or academic school) and b) school size (small:  $\leq 74$  pupils; middle:  $\leq 160$  pupils and large:  $>160$  pupils at the lower-secondary level), to ensure the adequate representation of school types and sizes in each stratum. Principals of selected schools were initially contacted via email, and if no response was received within a week, this was followed up via phone. Schools that declined to participate in the research were replaced by another randomly selected school from the same stratum. In total, 68 schools were selected and consequently invited to participate in the research, and the final sample consisted of 43 schools of different sizes and locations that had agreed to participate. The reasons why 25 schools declined the request for participation mostly involved their heavy workload and the additional time and effort constraints related to participation. The rate of return on school level was 63 %. The composition of the school sample is shown in Table 1.

Each of the selected schools was visited personally by at least one member of the research team, who distributed paper-pencil questionnaires to senior grade lower-secondary pupils and interviewed a representative of school management. A list of eligible schoolteachers (i.e. those who regularly taught at least one lesson of an academic school subject per week at the lower-secondary level of the school) with contact email addresses was obtained during this school visit. Instead of collecting teacher data using paper-pencil questionnaires during the school visits, the researchers chose to survey the teachers on-line, because digital surveys tend to elicit more truthful responses compared to paper-pencil questionnaires, and this effect seems to be the strongest for highly sensitive behaviours and surveys administered individually to respondents (Gnambs and Kaspar, 2015).

An email that contained information about the study purpose with an URL link to the online questionnaire was sent to 654 teachers. The URL contained an anonymised code that allowed to track whether the teacher had responded to the questionnaire or not, but did not allow to pair the answers in the database with the code, thus assuring anonymity of the respondent. Respondents were assured of the anonymity of the data not only at the beginning of the questionnaire, but also at the start of the questionnaire section containing items related to moonlighting and the provision of private tutoring.

If no response was recorded after the set deadline, email reminders were sent to those teachers. Because not every teacher answered the questionnaire and some answered only partially, the final sample used for the analyses consisted of 494 observations of teachers who had completed the questionnaire or at least answered the majority of questions. The rate of return on this level of sampling was 76 %. The number of observations in each school ranged from 2 to 25 with a median of 9.5 in mainstream schools, and 7–21 with median of 14 in academic schools. On average, respondents spent 17.5 min filling out the questionnaire.

### 2.3. Research instrument

The questionnaire for teachers was developed in several phases. The first draft was prepared by the authors of the paper and each item thoroughly discussed during several rounds of review. The initial choice of topics and themes corresponded with the overall research project objectives. Consequently, the draft questionnaire was reviewed by five teachers from different schools, of different ages and experience levels with the provision of private tutoring. These reviews took the form of cognitive interviews and, after each teacher session, the questionnaire items were adjusted in order to clear up their language, to avoid misunderstandings and minimise the risk of misinterpretation. These sessions lasted two hours on average, with three of the teachers they were conducted repeatedly. This also included an analysis of time spent on each item.

### 2.4. Measures

Both dependent and independent variables were derived from the conceptual framework (see 1.4) and their operationalisation is described in the following paragraphs.

#### Dependent variables

**Teacher moonlighting.** This variable was based on the questionnaire item: “In the last 12 months, have you engaged in any other remunerated employment activities in addition to your employment at this school?”<sup>5</sup> with a few examples provided to elaborate what is meant by remunerated employment activities. This operationalisation is consistent with the broader definition of multiple-job holding advocated by [Campion et al. \(2020\)](#).<sup>6</sup> The variable MOONLIGHTING was binary (0=No, 1=Yes) and included various kinds of such additional activities the teachers could be involved in.

**Provision of private tutoring.** To further differentiate the types of remunerated activities, the teachers whose answer to the previous question was affirmative, were further asked about the type of moonlighting job. They could choose from a set of items (see [Table 3](#)), of which two were related to the provision of private tutoring to students: a) “I work as a tutor for children (under 18) for a private educational agency.”; and b) I provide private lessons to students (under 18).” The value of the variable TUTORING was 1, if the teacher’s response to any of the two items was positive, otherwise the variable value was 0. The group of teachers providing PT to students (under 18) therefore constitutes a subgroup of moonlighting teachers.

#### Independent variables

Following the conceptual framework presented above, several independent variables were selected. These include gender, length of

<sup>5</sup> Verbatim translation from the following Czech wording: *Vykonáváte nebo jste vykonával/a v posledních 12 měsících kromě zaměstnání na této škole ještě jiné výdělečné pracovní aktivity?*

<sup>6</sup> “The act of working more than one job simultaneously, including working for employers and self-employment, wherein all tasks, or sets of tasks, are performed in exchange for, or expectation of, compensation.” ([Campion et al., 2020, p. 6](#))

**Table 2**  
Construction of inventory scales.

	Mean	Standard deviation	r
<i>Satisfaction with the teacher salaries (Cronbach's alpha = 0.74)</i>			
I am satisfied with the financial remuneration of my work at this school.	2.59	0.70	0.48
Teachers' salaries are insufficient in the Czech Republic. (inverted for calculations)	3.22	0.68	0.50
Teachers' salaries are so low that teachers often have to earn extra money elsewhere. (inverted for calculations)	2.63	0.71	0.55
I am satisfied with my overall financial situation.	2.47	0.72	0.62
<i>Support for private tutoring (Cronbach's alpha = 0.61)</i>			
Parents should pay for the private tutoring of students who struggle to manage their school work.	2.51	0.64	0.39
It is good when students use private tutoring to complement or practice material they struggled to learn at school.	2.95	0.58	0.39
If a student in my classes excels and is “ahead”, they should make use of private lessons or courses where they can learn something above and beyond my lessons.	2.48	0.68	0.40
If a student has bad results during my school classes, the most appropriate solution to this problem is paid private tutoring, where they can make up for their lack of schoolwork.	2.21	0.65	0.44

Note: r is a correlation coefficient of the item with index calculated without the corresponding item.

teaching experience, working hours (categorical variables), household financial burden, supportive attitudes towards private tutoring and satisfaction with teacher salaries (scale). [Table A1](#) in the Appendix presents descriptive statistics and values coding for these categorical independent variables.

**Subjects.** The three most common tutoring subjects were chosen and three corresponding categories used in the multiple regression models, according to the subjects the teacher reported teaching at their school: a) a mathematics teacher (1) or not (0); b) an English teacher (1) or not (0) and c) a Czech language teacher (1) or not (0). In the logistic regression models, the variable was used as follows: teacher of mathematics or English or Czech (1) vs. teachers of none of these subjects (0).

**Index of support for private tutoring.** The questionnaire explored teachers’ beliefs about the usefulness of private tutoring through a battery of attitude-measuring items. The value of this index (Cronbach’s  $\alpha = 0.61$ ) was calculated for each respondent by averaging the responses for the respective items (see [Table 2](#)) using a Likert scale of agreement (1 - strongly disagree, 2 - disagree, 3 - agree, 4 - strongly agree).

**Index of satisfaction with teacher salaries.** The questionnaire explored perceptions of teacher salaries and respondents expressed their views through a four-point Likert scale of agreement (1 - strongly disagree, 2 - disagree, 3 - agree, 4 - strongly agree). For each respondent, the value of the *Index of satisfaction with teacher salaries* (Cronbach’s  $\alpha = 0.74$ ) was calculated by averaging their responses from the respective items that constitute the index (see [Table 2](#)).

**Gender.** The variable value is the reported gender of the teacher (female = 0, male = 1).

**Index of household financial burden.** [Campion et al. \(2020\)](#) indicated that family size is a predictor of multiple-job holding. However, such an indicator would not cover various familial situations, for example, whether other household members engage in money-earning activities or not. For the purposes of mapping the teacher’s life situation (familial structure) in terms of the need for extra income in addition to the remuneration earned by teaching at the school, the variable *Index of household financial burden* was constructed. Teachers were asked several

questions related to their household structure (see Table A2 in the Appendix). Two variables were used to construct the index: 1) the number of people living in the household ( $N_{live}$ ), 2) the number of wage earners in the household ( $N_{earn\_money}$ ). The index was then calculated as the difference between the number of people in the household who earn nothing ( $N_{live} - N_{earn\_money}$ ) and the number of wage earners in the household ( $N_{earn\_money}$ ), in other words, according to the following formula

$$Index\ of\ household\ financial\ burden = (N_{live} - N_{earn\_money}) - N_{earn\_money} = N_{live} - 2 \times N_{earn\_money}$$

Higher values of the index indicate a higher financial burden for the household (fewer wage earners and more non-earning persons).<sup>7</sup> The questionnaire also contained one question about the approximate monthly household income of the teacher. However, we did not include this variable in the *Index of household financial burden* due to the high number of missing values (31 % of cases). Nevertheless, we used this variable for a concurrent validation of the *Index of household financial burden*. Pearson's (resp. Spearman's) coefficient of correlation between the *Index of household financial burden* and *reported household income* is  $-0.11$  ( $-0.05$ ), but when taking into account household income per capita, the correlation coefficients are  $-0.44$  (or  $-0.49$  respectively). These correlation coefficients show that the higher the *Index of household financial burden*, the lower the reported per capita household income.

*Length of teaching experience.* This variable was based on the questionnaire item "How long is your work experience?", and the respondent was asked to state an integer to complete a sentence "I have worked as teacher of primary or secondary school for ... year(s)." The original variable had approximately log-normal distribution. In order to minimize bias stemming from the influence of outliers, the values were transformed into a new variable with equal distribution into eight intervals with ordinal values from 1 to 8 (see Table A1).

*Working hours.* We simplified the multidimensional concept of job structure (Campion et al., 2020, see 1.4) by choosing one of its characteristics – working hours. Teachers were asked about the length of their working hours at school with following options: a) Part-time (less than 50 % of the time corresponding to full-time employment); b) Part-time (50–70 % of the time corresponding to full-time); c) Part-time (71–90 % of the time corresponding to full-time); and d) Full-time (more than 90 % of the time corresponding to full-time). For the purpose of the regression analysis, we only distinguished between full time (1) and part time teachers (0), meaning those who belonged to categories a), b) and c).

## 2.5. Data analysis

First, we compared the two groups in pairs (moonlighting teachers vs. non-moonlighting teachers, private tutoring providers vs. non-providers) of the above-mentioned variables to test for differences between the groups. The chi-square test was used for categorical variables (e.g., gender, subject taught) and a two-sample *t*-test for variables that can be considered metric (attitude scales, length of practice...). Second, selected variables were included as predictors in a multiple logistic regression. All statistical analyses were performed in IBM SPSS, version 24.

<sup>7</sup> E.g., for a household with two wage earners and one child, the value of the index is  $-1$ ; for a household with two wage earners and three children, the index value is 1.

**Table 3**  
Money-earning activities of teachers over the past 12 months.

	N	% (of moonlighting teachers)	% (of the total sample)
No moonlighting job	291		59 %
Any moonlighting job (MOONLIGHTING) of that...	180		36 %
Work outside of the field of education	54	30 %	11 %
Provision of extracurricular activities at the school	46	26 %	9 %
Other	43	24 %	9 %
Work in the field of education, but not as a teacher	33	18 %	7 %
Tutoring adults (over 18) for a private educational agency	31	17 %	6 %
Provide private lessons to students (under 18)	26	14 %	5 %
Provide private lessons to adults (over 18)	25	14 %	5 %
Work as a university teacher	12	7 %	2 %
Work as a teacher at another primary or secondary school	11	6 %	2 %
Tutoring students (under 18) for a private educational agency	11	6 %	2 %
Provision of private tutoring to students (TUTORING)*	38	21 %	8 %
Provision of private tutoring**	63	35 %	13 %

Notes: The percentages do not add up to 100 %, because the respondents were able to select multiple items; 5% of respondents ( $n = 23$ ) did not provide an information on whether they moonlight or not.

\* The combined category of "Provide private lessons to students (under 18)" and "Tutoring students (under 18) for a private educational agency". In addition, three cases were assigned to this category based on the response "Other", whose description fit within the two categories.

\*\* The combined category of "Provide private lessons to students (under 18)", "Provide private lessons to adults (over 18)", "Tutoring children (under 18) for a private educational agency" and "Tutoring adults (over 18) for a private educational agency." (Plus the three observations categorized based on their response "Other").

## 3. Results

### 3.1. Descriptive results

Table 3 shows that over the last 12 months, more than one third of teachers in the sample ( $n = 180$ , 36 %) are or were involved in other paid work activities in addition to their employment at the school (variable MOONLIGHTING). Of these moonlighting teachers, 21 % ( $n = 38$ ) provided tutoring to students younger than 18 years, either by providing PT lessons, or by working for a private tutoring company (variable TUTORING). The most widespread moonlighting activities also included jobs outside the field of education ( $n = 54$ , 30 %) and the provision of extracurricular activities at the school ( $n = 46$ , 26 %).<sup>8</sup>

In the next step of the analysis, the groups of moonlighting teachers were compared with non-moonlighters, and those who provide private tutoring were compared with those who do not.

Tables 4 and 5 show that male teachers are more likely to moonlight than female teachers (48 % vs. 35 %,  $p < 0.05$ ), and unsurprisingly, a higher share of teachers working part-time in the school moonlight, compared to full-time teachers (55 % vs. 35 %,  $p < 0.01$ ). Furthermore, compared to non-moonlighters, moonlighting teachers have a shorter teaching experience ( $p < 0.01$ ) and also live in households with a higher financial burden ( $p < 0.05$ ). The differences in other variables

<sup>8</sup> Participation in such activities is not obligatory for Czech teachers and they are paid a bonus on top of their regular salary from teaching at the school.

**Table 4**  
Comparison of groups of teachers (chi-square test).

		N	MOONLIGHTING				X <sup>2</sup>	p-value	TUTORING				X <sup>2</sup>	p-value
			Yes	No	Yes	No			Yes	No	Yes	No		
Gender	Male	107	51	48 %	56	52%	5.23	<b>0.022</b>	8	7%	99	93%	0.07	0.798
	Female	364	129	35 %	235	65%			30	8%	334	92%		
Mathematics teacher	Yes	112	47	42%	65	58%	0.87	0.350	10	9%	102	91%	0.15	0.702
	No	359	133	37%	226	63 %			28	8%	231	64%		
Czech language teacher	Yes	99	35	35 %	64	65%	0.44	0.509	9	9%	90	91%	0.18	0.674
	No	372	145	39%	227	61 %			29	8%	343	92%		
English language teacher	Yes	90	35	39%	55	61 %	0.02	0.884	15	17 %	75	83%	11.09	<b>0.001</b>
	No	381	145	38%	236	62%			23	6%	358	94%		
Subject taught (mathematics, Czech or English language)	Yes	278	107	38%	171	62%	0.02	0.884	30	11 %	248	89%	6.78	<b>0.009</b>
	No	193	73	38%	120	62%			8	4%	185	96%		
Full-time	Yes	392	136	35 %	256	65%	11.50	<b>0.001</b>	34	9%	358	91%	1.10	0.294
	No	78	43	55 %	35	45 %			4	5%	74	95%		

**Table 5**  
Comparison of groups of teachers (t-test).

	MOONLIGHTING						TUTORING									
	Yes			No			t-value	p-value	Yes			No			t-value	p-value
	N	Mean	(SD)	N	Mean	(SD)			N	Mean	(SD)	N	Mean	(SD)		
Length of teaching experience	180	4.07	2.06	289	4.74	2.24	-3.28	<b>0.001</b>	38	3.63	1.92	431	4.56	2.20	-2.51	<b>0.012</b>
Index of support for private tutoring	176	2.55	0.49	282	2.53	0.46	0.53	0.599	38	2.65	0.43	420	2.53	0.48	1.53	0.126
Index of satisfaction with teacher salaries	177	2.20	0.52	285	2.27	0.55	-1.35	0.179	38	2.23	0.50	424	2.24	0.54	-0.14	0.891
Index of household financial burden	173	-0.61	1.40	262	-0.90	1.25	2.22	<b>0.027</b>	35	-0.97	1.10	400	-0.77	1.33	-0.88	0.379

**Table 6**  
Multiple logistic regression models predicting teacher moonlighting and the provision of private tutoring.

	MOONLIGHTING				TUTORING			
	B	(S.E.)	p-value.	Exp(B)	B	(S.E.)	p-value.	Exp(B)
Subject taught (math, Czech or English language)	0.21	0.22	0.335	1.24	1.01	0.44	<b>0.021</b>	2.73
Index of support for private tutoring	0.16	0.23	0.473	1.18	0.49	0.39	0.212	1.64
Index of satisfaction with the teacher salaries	-0.37	0.20	0.063	0.69	-0.15	0.34	0.660	0.86
Gender (ref. female)	0.71	0.25	<b>0.005</b>	2.03	0.19	0.45	0.677	1.20
Full-time (ref. part time)	-0.77	0.27	<b>0.005</b>	0.46	0.51	0.57	0.364	1.67
Length of teaching experience	-0.13	0.05	<b>0.007</b>	0.88	-0.25	0.09	<b>0.006</b>	0.78
Index of household financial burden	0.16	0.08	0.051	1.17	-0.09	0.14	0.528	0.91
Constant	1.01	0.83	0.222	2.76	-3.59	1.45	0.014	0.03
Nagelkerke R <sup>2</sup>	0.11				0.09			
% of correctly predicted cases	65				92			
N	420				420			

(satisfaction with teacher salaries, or teaching of a specific subject) are small and statistically insignificant.

Turning to the provision of private tutoring to students, no statistically significant differences in the average value of the household financial burden index were found between tutoring and non-tutoring teachers. Similarly, no differences were identified between either male or female teachers, nor between those working full time and part time. Unlike in case of general moonlighting, a higher share of English teachers provide tutoring compared to teachers of other subjects (17 % vs. 6 %, p < 0.01). Also, the work experience of teacher-tutors is shorter than that of non-tutoring teachers (p < 0.05). The average value of the index of support for private tutoring is slightly higher in the group of teachers who provide tutoring, but the difference turned out as statistically significant only at p = 0.126.

### 3.2. Multiple logistic regression models

The next analytic step included the construction of logistic regression

models with dependent variables MOONLIGHTING and TUTORING and independent variables identified by the conceptual framework (1.4) as predictors in multidimensional logistic regression. The correlation analysis (Table A3 in the Appendix) showed a relative mutual independence of the independent variables. The highest correlation was found between the subject taught (math, Czech or English language) and gender (r = -0.19).<sup>9</sup>

For each dependent variable, three separate models were built. Model 1 contained tutoring-specific predictors (subject taught and index of support of private tutoring), model 2 included general predictors of teacher moonlighting, and the final model used both general and tutoring-provision specific predictors. Due to the relatively low correlations between independent variables (see above), the strength of predictors did not change very much across models 1, 2 and the final

<sup>9</sup> Apart from mathematics, these subjects are more often taught by female teachers.

model. Therefore, the interpretation and discussions reference the results of the final model (Table 6).<sup>10</sup>

#### Tutoring-specific factors

The results of the logistic regression turned out to be consistent with descriptive univariate analyses. The subject taught by the teacher does not predict participation in moonlighting, but is related to the provision of private tutoring. This means, that the odds ratio for finding a teacher who provides private tutoring among randomly selected teachers of the core subjects (mathematics, Czech language, or English) is 2.73 times higher than in the group of teachers of other subjects ( $p < 0.05$ ).

As expected, support for private tutoring is not associated with moonlighting. Nevertheless, contrary to initial expectations, the association between the index of private tutoring support and the provision of private tutoring was statistically insignificant ( $p = 0.212$ ), which can be attributed not only to a relatively small sample size, but also the relatively lower reliability of the constructed index.

#### General factors

Further, the more teachers express dissatisfaction with their salaries, the more likely they are to be engaged in moonlighting (an increase of one unit in the index is associated with 45 % higher chance of being involved in moonlighting,  $p = 0.063$ ). However, the index of satisfaction with teacher salaries is not related to the provision of private tutoring.

Length of teaching experience significantly influences both moonlighting and tutoring. The longer the work experience of teacher, the less likely they are to moonlight as well as to provide private tutoring ( $p < 0.01$ ).<sup>11</sup>

Teacher gender and fulltime work hours are influential predictors of having an additional job ( $p < 0.01$ ), but not of the provision of private tutoring. The odds ratio for finding a moonlighter among male teachers is approximately two times higher than among female teachers, and 2.17 times higher for teachers working part-time compared to full-time teachers.

Household composition is an important predictor of moonlighting (significant at  $p = 0.051$ ), that is, with a one-unit change in the index of household financial burden, the odds of finding a teacher who moonlights increase by about 17 %. However, this index is not related to the provision of private tutoring.

To sum up, all other (control) variables being equal, teachers who moonlight are more often males working part time at their school, with shorter work experience. They are less satisfied with their financial situation and live in households with a higher financial burden compared to their non-moonlighting counterparts. Teachers who provide tutoring are more likely to teach one of the key core subjects (mathematics, Czech or English language) and have a shorter work experience compared to those who don't privately tutor. In their other characteristics they are similar to those who don't provide private tutoring to students.

## 4. Discussion

This paper investigated the prevalence of multiple job-holding among Czech schoolteachers, and of the provision of private tutoring as a special case of this practice, and it focused on analysing the determinants of teachers' participation in these activities. These determinants were identified in the conceptual framework and comprised of general predictors of moonlighting as well as tutoring-specific ones.

The study found that teacher moonlighting in the Czech Republic is

not a rare phenomenon as more than one third of teachers in the sample reported having an additional job apart from the one at their school. Seeing as the Czech Republic belongs to a group of middle-income countries, the share of moonlighting teachers was found to be somewhat higher than that of some high-income countries (for example the USA, where a nationally representative survey showed that 19 % of public-school teachers moonlight, see Fitchett et al., 2016), but similar to that found in some low-income countries (e.g., Tanzania, Timothy & Nkwama, 2016; or Ghana, Koomson et al., 2017).

The proportion of teacher moonlighters in private tutoring was 13 % of the total sample, and 8%, when only tutoring of student up to 18 years was considered. Looking at the variety of other moonlighting jobs Czech teachers reported their involvement in (including other types of jobs within the field of education), private tutoring remained a significant (with a share of more than a third of moonlighting teachers), but far from the dominant way of moonlighting. In this light, the role that private tutoring plays in teachers' lives here, may differ from that in other countries, where private tutoring may represent the primary moonlighting activity (e.g. in Tanzania, Mulokozi, 2015 found that 72 % of moonlighting teachers were private tutors).

Of course, it must be remembered here that precise data on the provision of private tutoring may be difficult to obtain, because tutors may prefer to avoid attention as many of them provide private tutoring informally, thus earning untaxed income (Bray, 2009, p. 17). The provision of private supplementary tutoring by schoolteachers may be a delicate topic, because it is associated with the unethical practices of teachers who tutor their own students (see e.g., Kobakhidze, 2018), and teacher participation in the activity may be against the regulations, such as in Myanmar, which led Liu and Bray (2020b, p. 5) to state that "some respondents may have chosen not to declare it [PT provision] "and as a consequence their findings about the participation rates (47.7 %) may have been underestimated. These limitations may of course also be pertinent to the present study, however, the situation in the Czech Republic seems to differ in that no such regulations exist and teacher moonlighting including the provision of private tutoring enjoys wide societal acceptance due to the relatively low teacher salaries (Štastný, 2016, see also 1.3).<sup>12</sup>

Turning to the predictors of moonlighting and private tutoring provision among Czech teachers, the study found that while higher financial pressure, related to household composition and to some extent also dissatisfaction with teacher salaries, seems to be associated with teacher engagement in moonlighting, this was not the case in concerning the provision of private tutoring to students. This contrast would indicate that Czech teachers do not necessarily provide private tutoring to make ends meet, as is common in many low-income countries (Liu and Bray, 2020b), but rather for other reasons, such as securing better professional status (Popa and Acedo, 2006), for a sense of self-fulfilment stemming from helping the student to learn, achieve and improve (Werbińska et al., 2019) or as an opportunity for further professional development (Kobakhidze, 2018).

This is consistent with the notion that private tutoring is more likely to be provided by less experienced, or younger teachers, who are at the beginning of their careers. The interpretation may be two-fold. One the one hand, these inexperienced teachers may feel a more urgent need for self development, and also be more enthusiastic about teaching students, looking for further opportunities to do so through tutoring. On the other hand, they may be pushed to moonlighting/PT provision by their generally lower salaries compared to their more experienced colleagues. Also, one of the salient factors of teacher shortage is attrition during the

<sup>10</sup> Models 1 and 2 are not shown in the paper, but are available upon request from the corresponding author.

<sup>11</sup> This is also confirmed by the descriptive data: 12% of teachers with up to 15 years of experience provide private tutoring compared to only 4% of those with more years of teaching experience.

<sup>12</sup> Štastný (2016) reported that when he was conducting in-depth interviews with the teachers who worked as private tutors, interviewees openly shared their experiences and did not seem reluctant or ashamed to report providing private lessons. Quite the opposite was true, as they spoke very openly about their practices and clients.



**Table A1**  
Descriptive statistics of the independent variables.

	n	%	Value	Mean (SD)	Min	Max
<b>Gender</b>				<b>0.23 (0.42)</b>	<b>0</b>	<b>1</b>
Female	364	74 %	0			
Male	107	22 %	1			
Missing	23	5 %				
<b>Subject taught (most frequent occurrence)</b>				<b>0.60 (0.49)</b>	<b>0</b>	<b>1</b>
Subject taught (math, Czech or English language)	298	60 %				
Mathematics	118	24 %	1			
Czech language	107	22 %	1			
English language	99	20 %	1			
<b>Length of teaching experience (with value)</b>				<b>4.48 (2.20)</b>	<b>1</b>	<b>8</b>
<b>Length of teaching experience (original years)</b>				<b>16 (11)</b>	<b>0</b>	<b>49</b>
Up to 2 years	52	11 %	1			
3 to 5 years	53	11 %	2			
6 to 10 years	64	13 %	3			
11 to 15 years	70	14 %	4			
16 to 20 years	66	13 %	5			
21 to 25 years	58	12 %	6			
26 to 30 years	53	11 %	7			
More than 30 years	53	11 %	8			
Missing	25	5 %				
<b>Working hours at the school</b>				<b>0.83 (0.38)</b>	<b>0</b>	<b>1</b>
Full-time	408	83 %				
Part-time (less than 50 % of the time corresponding to full-time employment)	17	3 %	1			
Part-time (50–70% of the time corresponding to full-time)	31	6 %	2			
Part-time (71–90% of the time corresponding to full-time)	38	8 %	3			
Full-time (more than 90 % of the time corresponding to full-time)	408	83 %	4			
missing	0	0 %				
<b>Index of support for private tutoring</b>	467			<b>2.54 (0.47)</b>	<b>1</b>	<b>4</b>
<b>Index of satisfaction with teacher salaries</b>	463			<b>2.24 (0.54)</b>	<b>1</b>	<b>4</b>
<b>Index of household financial burden</b>	435			<b>−0.78 (1.31)</b>	<b>−4</b>	<b>3</b>

early years of teaching (OECD, 2019). It is possible that they engage in these additional jobs, because of the perception that this is a possible means to gradually escape teaching at school.

After accounting for other factors, the gender of the teacher was irrelevant in predicting the provision of private tutoring, in contrast with moonlighting in general, which Czech male teachers were found more likely to be involved in compared to women. This is consistent with findings from previous studies conducted in different contexts (e.g., Timothy & Nkwama, 2017; Sappa et al., 2015) and can be partly explained by the prevailing cultural perceptions of traditional gender roles and the dominance of the “male breadwinner” model in the Czech society (Ciccia and Bleijenbergh, 2014). Male teachers may thus perceive stronger social expectations around earning money. As a consequence, other things being equal (length of teaching experience, working hours, household structure etc.), a male teacher is twice as likely to engage in a moonlighting job of any kind compared to female teachers. This contrast with the equal involvement of teachers of both genders in the provision of private tutoring is another indication that the primary motives to provide private tutoring are not directly related to teachers’ wages.

Furthermore, the results of the study confirmed the “hours-constraint hypothesis” which states that one’s willingness to work an additional job decreases, the more hours are accrued in the primary job (Campion et al., 2020), but only for general teacher participation in moonlighting, not for the provision of private tutoring. As a result, full-time teachers are as likely to tutor as part-time teachers, after accounting for other variables. The study did not provide any information about the intensity of teacher involvement in the provision of private tutoring, but it seems likely that for full time teachers, engagement in the provision of PT consumes some leisure time or reduces the time they would otherwise work for the regular school, for example, lesson preparation time.

Previous scholarly literature on teachers who provide private tutoring did not particularly focus on the role of the subject the teacher is teaching at school. Teachers of core subjects (English, mathematics and Czech) are more likely to be providers of PT, which is consistent with expectations and in line with previous research, where these three

subjects were also found to be among the three subjects offered by private tutors via online advertisements the most (Štastný, 2016).

Finally, the difference in attitudes towards private tutoring was negligible when comparing the teachers who provide tutoring and those who do not. This suggests that the provision of private tutoring does not affect teachers’ attitudes towards the phenomenon of private tutoring in either positive or negative ways. This finding seems paradoxical and, in a way, may resemble the so-called “privacy paradox” (Barth and de Jong, 2017), a well-documented discrepancy between expressed privacy concerns and the actual behaviour of internet users. Thus, teachers who provide private tutoring may not be especially positive about the practice, perhaps because they are well aware of its adverse effects, or vice versa, teachers who do not provide private tutoring may overestimate its benefits. This issue warrants further exploration, both quantitative (using a larger sample, as such samples are more likely to trigger significant results, or with different measures of attitudes towards private tutoring) and qualitative (e.g., using interviews to explore how teachers shape their attitudes towards the phenomenon).

## 5. Conclusions

This study adds to the scarce literature on teacher moonlighting and private tutoring provision by quantitatively exploring their determinants in the context of a post-socialist country, in which the teachers’ financial situation and status fell significantly after the fall of Iron Curtain, and recovered only gradually. Overall, the study findings indicate that the provision of private tutoring is a special type of moonlighting job, different from other jobs in that Czech teachers’ engagement in this activity is not determined by working hours, gender, or perceptions of their financial situation, or more precisely their household situation (financial burden). The provision of private tutoring is one of the available means of supplementing teacher salaries (just as any other moonlighting job), but despite their low salaries, this does not seem to be the dominant reason Czech teachers choose to do it. Rather, other (in this study unobserved) motivations such as professional development or a sense of fulfilment stemming from the provision of PT

**Table A2**

Creation of the Index of household financial burden.

Variables used for the creation of the Index of household financial burden	<i>n</i>	%
How many people live in your household? (N_live)		
Just myself (1)	39	8 %
Two (2)	136	28 %
Three (3)	96	19 %
Four (4)	120	24 %
Five or more (5)	40	8 %
missing	63	13 %
How many of these people earn money? (N_earn_money)		
One (1)	61	12 %
Two (2)	293	59 %
Three (3)	27	5 %
Four or more (4)	10	2 %
missing	103	21 %
Variable used for concurrent validation of the Index of household financial burden	<i>n</i>	%
Reported household income*		
CZK 10,001–20,000 (CZK 15,000)	4	1 %
CZK 20,001–30,000 (CZK 25,000)	64	13 %
CZK 30,001–50,000 (CZK 40,000)	157	32 %
CZK 50,001–75,000 (CZK 62,500)	93	19 %
CZK 75,001–100,000 (CZK 87,500)	19	4 %
More than CZK 100,001 (CZK 120,000)	2	0 %
missing	155	31 %

\* Values in parentheses were used to calculate correlation coefficients between reported household income (per capita) and the index of household financial burden. The exchange rate is approximately 1 EUR = 26 CZK or 1 USD = 22 CZK.

**Table A3**

Variable correlation matrix.

	1	2	3	4	5	6	7	8	9
1 MOONLIGHTING		<b>0.38</b>	0.01	0.05	<b>0.11</b>	<b>-0.16</b>	<b>-0.15</b>	-0.05	0.09
2 TUTORING	<b>0.38</b>		<b>0.12</b>	<b>0.10</b>	-0.01	0.05	<b>-0.12</b>	0.00	-0.04
3 Subject taught (math, Czech or English language)	0.01	<b>0.12</b>		0.03	<b>-0.19</b>	<b>0.09</b>	<b>0.12</b>	0.02	-0.01
4 Index of support for private tutoring	0.02	0.07	0.01		<b>-0.12</b>	0.07	-0.07	<b>-0.10</b>	-0.07
5 Gender (ref. female)	<b>0.11</b>	-0.01	<b>-0.19</b>	<b>-0.10</b>		-0.02	<b>-0.10</b>	-0.03	-0.03
6 Full-time	<b>-0.16</b>	0.05	<b>0.09</b>	0.07	-0.02		<b>0.09</b>	-0.02	<b>-0.10</b>
7 Length of teaching experience	<b>-0.15</b>	<b>-0.12</b>	<b>0.12</b>	-0.05	<b>-0.10</b>	0.08		0.03	-0.02
8 Index of satisfaction with financial situation	-0.06	-0.01	0.03	<b>-0.10</b>	-0.03	-0.02	0.03		-0.02
9 Index of household financial burden	<b>0.11</b>	-0.04	-0.03	<b>-0.08</b>	0.03	-0.09	-0.05	-0.01	

Note: Pearson's correlation coefficient values are above the diagonal line, below it are the values of Spearman's correlation coefficient. All values above 0.09 (bold) are statistically significant at  $p < 0.05$ .

seem to play a role in their decision to provide PT, and should be investigated in the follow-up studies. While this study provides insights into the determinants of teacher moonlighting and the provision of private tutoring, further research may also focus on the implications and outcomes of these practices.

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### CRedit authorship contribution statement

**Vít Štastný:** Conceptualization, Methodology, Writing - original draft, Writing - review & editing, Investigation. **Martin Chvál:** Conceptualization, Methodology, Writing - original draft, Writing - review & editing, Investigation. **Eliška Walterová:** Supervision, Writing - review & editing.

### Declaration of Competing Interest

The authors report no declarations of interest.

### Appendix A

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