





Research Article

# Teachers' basic psychological needs, (de)motivating styles and professional well-being

Aleksandra Huić <sup>1</sup> , Nina Pavlin-Bernardić <sup>1</sup> , and Nikolina Čižić <sup>2</sup>

<sup>1</sup>Department of Psychology, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia

<sup>2</sup>Primary School Lučko, Croatia

## ABSTRACT

In this study we adopt the lens of self-determination theory to examine the interplay between teachers' basic psychological needs, behaviors, and well-being. We investigate teachers' classroom behavior in the form of their (de)motivating styles as mediators between their need satisfaction/frustration and levels of their emotional exhaustion and job satisfaction. A total of 365 Croatian teachers completed an online survey filling out the Situations-in-School Questionnaire, Basic psychological need satisfaction and frustration scale, Short index of job satisfaction and Emotional exhaustion scale. In line with the bright pathway, results showed that teachers with higher need satisfaction used more autonomy-supportive and structuring motivating styles and were more satisfied with their job. Teachers who used autonomy-supportive style were also more satisfied with their job, and this style partially mediated the relationship between need satisfaction and job satisfaction. In line with the dark pathway, teachers whose basic needs were more frustrated used more controlling and chaotic demotivating styles and reported higher levels of emotional exhaustion. Control and chaos as demotivating styles were not significant mediators between need frustration and emotional exhaustion, while teachers who used higher levels of the chaotic style reported lower levels of emotional exhaustion.

*Keywords:* basic psychological needs, circumplex model, (de)motivating styles, teacher well-being

UDK: 159.913:371.213

DOI: 10.19090/pp.v17i3.2521

Received: 24.12.2023.

Revised: 31.05.2024.

Accepted: 24.06.2024.



Copyright © 2024 The Author(s).

This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

---

✉ Corresponding author email: [ahuic@ffzg.hr](mailto:ahuic@ffzg.hr)

## Introduction

Teachers' well-being is crucial both for the quality of their work and the outcomes of their students (Hascher & Waber, 2021). In Klussman et al.'s (2008) heuristic model, teachers' personal characteristics and behaviors, together with their environment, represent key determinants of their professional well-being. However, studies investigating the role of specific teacher classroom behaviors are relatively scarce, or largely situated either in the Western educational context, or focus solely on physical education teachers. In this study, we extend the available literature by adopting the lens of self-determination theory (Ryan & Deci, 2017) and investigating teachers' classroom behavior in the form of their (de)motivating styles as mediators between their basic psychological need satisfaction/frustration and levels of their emotional exhaustion and job satisfaction. In line with the proposition about the bright and dark pathways (Haerens et al., 2015; Jang et al., 2016), and Klussman et al.'s (2008) model, we posit that teachers' basic needs satisfaction will be associated with higher use of motivating styles of autonomy support and structure which will in turn be associated with higher levels of job satisfaction. On the other hand, we expect teachers' need frustration to be associated with higher use of demotivating styles of control and chaos which will in turn be associated with higher levels of emotional exhaustion (see Figure 1). Although the main tenants of self-determination theory seem to be universal (see Ryan et al., 2022 for a synthesis of meta-analytical research), it can be beneficial to test the assumed relationships in different cultural and educational contexts (Deci & Ryan, 2000), which we do in this study conducted in a central and eastern European country.

### Teacher Well-being and Basic Psychological Need Satisfaction/Frustration

To accurately capture the complexity of teacher well-being, research needs to focus on both the positive aspects, such as job satisfaction, and negative aspects, such as emotional exhaustion (Hascher & Waber, 2021). Teachers' job satisfaction can be described as their general positive or negative

---

evaluation of their job (Weiss, 2002). Higher levels of teachers' job satisfaction have been linked to better physical and mental health, lower intention to leave the profession, and higher quality of work (Harrison et al., 2023; Toropova et al., 2021). On the other hand, teachers who feel worn-out and drained show high levels of emotional exhaustion, a feeling that is considered to be a key aspect of burnout (Maslach & Leiter, 2017). Teachers' emotional exhaustion has been linked to their poorer mental health (Schonfeld & Bianchi, 2016), higher levels of attrition (Madigan & Kim, 2021), and lower quality job performance (Klusmann et al., 2008). Studies also show that teachers with higher levels of job satisfaction and lower levels of emotional exhaustion have students who are more engaged, motivated and have better academic outcomes (see Hascher & Waber, 2021 for review). Given these important implications, it is not surprising that researchers are examining factors that can contribute to teachers' well-being.

In their attempt to organize research investigating determinants of teacher professional well-being, Klusmann et al. (2008) emphasize the role of individual teacher characteristics tied to their motivation. Confirming this proposition, studies found higher levels of job satisfaction among intrinsically motivated teachers (Shah et al., 2012) and teachers with higher levels of engagement (Klusmann et al., 2008). Self-determination theory (Ryan & Deci, 2017) describes conditions under which people will be more motivated and have higher well-being. Specifically, both the theory and numerous studies show that basic psychological needs for autonomy, competence, and relatedness need to be met for people to flourish and have high well-being (see Ryan et al., 2022 for a meta-analysis).

Studies focusing on teachers have shown that when teachers can volitionally choose what to do and how to do it (need for autonomy), when they feel they are able to successfully do what is being asked of them (need for competence) and when they have close relationships with their students and other colleagues (need for relatedness) their basic needs are being satisfied (Vansteenkiste et al., 2020), which creates space for both their personal and professional well-being (Chen et al., 2015; Korthagen & Evelein, 2016). On the

other hand, when teachers feel controlled and compelled to do things in proscribed ways (need for autonomy), when they don't feel that they can successfully perform tasks put before them (need for competence), and have low-quality or lack of relationships with students and colleagues (need for relatedness), their needs are being frustrated which has been linked to poorer functioning and higher levels of burnout (Collie et al., 2016). Experiences of need frustration in teachers have also been linked to anxiety and defensiveness, as well as abandoning social and work situations (Skinner & Edge, 2002).

When teachers experience top-down pressures in their work environment, this is associated with higher levels of need frustration which is, in turn, associated with teacher burnout. On the other hand, an environment that supports and satisfies teachers' needs is at the same time associated with higher levels of job satisfaction (Ryan et al., 2022). Studies have shown that having quality relationships with students and colleagues (Malinen & Savolainen, 2016) and having a principal who supports teachers' competency and autonomy (Abdulaziz Alfayez et al., 2021) are linked to higher levels of job satisfaction, as are teachers' experiences of autonomy in general (Cheon et al., 2014). Similarly, a context of control created by a principal's leadership style and school policies which pressure teachers to boost student achievement has been linked to more frustrated needs and, in turn, to higher levels of teacher burnout (Bartholomew et al., 2014; Cuevas et al., 2018; Pelletier et al., 2002). In an intensive longitudinal diary study, Aldrup et al. (2017) confirmed that teachers' needs satisfaction predicts their work enthusiasm, while their needs frustration predicts their emotional exhaustion.

Previous studies confirm that numerous different teachers' individual characteristics, including their motivation, affect both their classroom behaviors and their well-being (see Bardach et al., 2022; Hascher & Waber, 2021; Klusmann et al., 2008 for meta-analyses and reviews). However, available studies focus mostly on teacher instructional performance and classroom management skills as indicators of their classroom behaviors. In this study, we focus on behaviors teachers use to motivate their students, more specifically we focus on a relatively new model of (de)motivating teacher styles (Aelterman et al., 2019)

---

which describes different teacher behaviors in a more comprehensive way than the previous literature in the field.

### (De)motivating Teacher Styles

Aelterman et al.'s (2019) circumplex model distinguishes between four distinct styles described by two dimensions. Autonomy support and structure are considered motivating styles, given they are aimed to support students' basic psychological needs. On the other hand, control and chaos are considered demotivating styles, given they undermine students' needs. The second dimension - directiveness - describes teacher behaviors that provide clear expectations and instructions for their students (structure and control) or which include higher levels of student independence (autonomy support and chaos). As Aelterman & Vansteenkiste (2023) describe, teachers will be autonomy-supportive when they invite students to share interests, provide suggestions, and incorporate these in their teaching. A structuring teacher helps students achieve goals, looks at mistakes as learning opportunities, and scaffolds their teaching. A controlling teacher uses a commanding communication tone to pressure students to behave and do the work in exact proscribed ways, while a chaotic teacher abandons students leaving them to their own devices.

Importantly, for teachers to use motivating styles and create a supportive environment, their own basic psychological needs must be met (Roth et al., 2007). Available research has confirmed the link between need satisfaction and the use of autonomy and structure, and need frustration and the use of control and chaos in Belgium (Aelterman et al., 2019), Italy (Moè & Katz, 2020) and China (Wang, 2023). However, more studies are needed in different cultures and educational contexts, just as more studies are needed which investigate outcomes of (de)motivating styles. Most previous studies focused on antecedents of (de)motivating styles and investigated the role of other teacher characteristics such as emotional regulation (Moè & Katz, 2021), teacher enthusiasm (Moè & Katz, 2022), intrinsic motivation (Aelterman et al., 2019; Golešić, 2022; Vermote et al., 2020), and contextual factors such as social pressures by students, colleagues, and principals (Vermote et al., 2022).

Available studies have shown numerous benefits motivating styles have for students, such as higher levels of autonomous motivation and self-regulated learning, and lower levels of amotivation and oppositional defiance (Aelterman et al., 2019). Previous research focusing only on autonomy-supportive and controlling teaching offers a plethora of evidence that the former leads to higher engagement, autonomous motivation, and better academic outcomes (Reeve & Cheon, 2021). However, studies that focus on specific outcomes for teachers themselves and focus on the whole circumplex model are very scarce.

Older research that focuses only on the effects of autonomy-supportive and controlling teaching shows that those teachers who adopt autonomy support as a motivating style are, in general, more satisfied with their work and have higher levels of personal accomplishment; while adopting a controlling style is associated with higher levels of burnout and attrition (see Reeve, 2009 for review). Similarly, in a study based on the circumplex, Moè & Katz (2020) found significant associations between autonomy support and structure and personal accomplishment, and control and chaos and teacher burnout.

### Current study

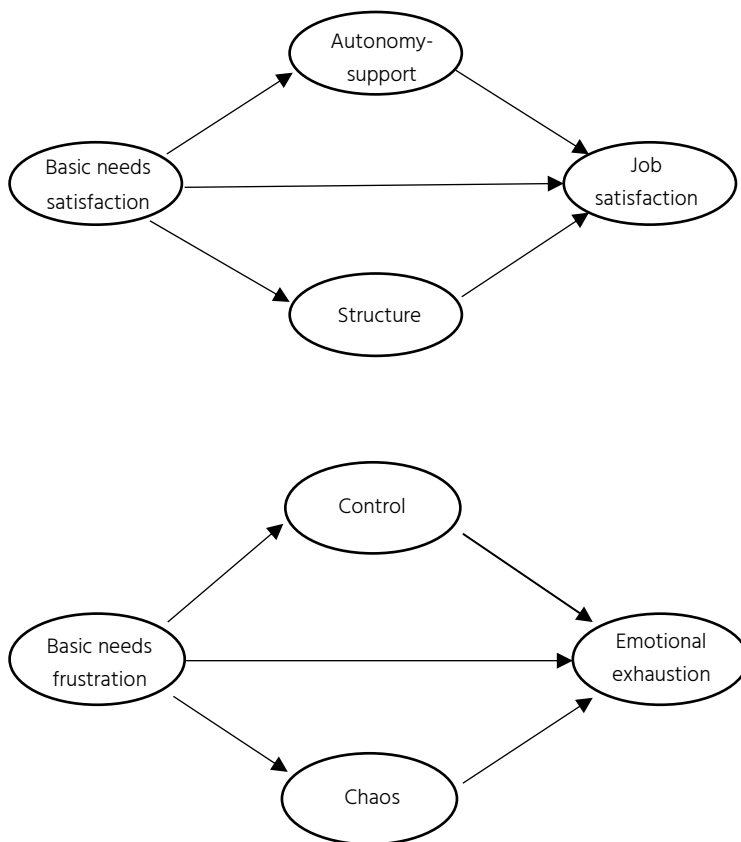
In this study, we extend previous literature by investigating the interplay between teachers' individual characteristics, teacher behaviors in the form of their (de)motivating styles, and positive and negative indicators of their well-being in a different cultural context than before. Based on theoretical expectations from the self-determination theory, the circumplex model, and previous studies in the field, we expected that teachers' need satisfaction will be positively associated with their motivating styles of autonomy support and structure, while their need frustration will be positively associated with their demotivating styles of control and chaos (H1). In addition, we expected that teachers' motivating styles of autonomy support and structure will be positively associated with job satisfaction, while demotivating styles of control and chaos will be positively associated with emotional exhaustion (H2). Based on assumptions from the bright and dark pathways, and for the sake of parsimony, we examine separate models for job satisfaction as a positive indicator of

teacher well-being, and emotional exhaustion as a negative indicator of teacher well-being.

Furthermore, based on Klusmann et al’s (2008) heuristic model, which postulates that the link between teachers’ characteristics and their well-being can be partially mediated by teachers’ behavior in the classroom, we expected that teachers (de)motivating styles (as indicators of their classroom behaviors) will significantly mediate the above-proposed relationships between their basic psychological needs satisfaction/frustration and indicators of their well-being (H3).

**Figure 1**

*Expected relationships and paths investigated by this study’s research goals*





## Method

### Participants and Procedure

A total of 365 teachers (91.2% women) participated in the study. They worked in elementary schools as classroom teachers (23.2%; in Croatia encompasses the first couple of years of school not differentiated by specific subjects), as subject teachers in middle schools (42.5%; in Croatia grades 5 to 8) or in high schools (34.4%; in Croatia lasts for four years, attended by students between ages of 14 to 18). Teachers had, on average, 16.3 years of working experience in education ( $SD = 10.19$ ) and were 43.2 years old ( $SD = 10.11$ ; range 23 to 64 years). The majority held a university degree (88.7%), while a smaller percentage had higher education (6.8%) or postgraduate qualifications (4.4%). The sample represented all Croatian counties, with the highest percentage of teachers working in the City of Zagreb (20.4%) and the lowest in Lika-Senj County (0.3%).

The data was collected using an online questionnaire designed in SurveyMonkey. The data collection period spanned from early February to early March 2023. Participants were invited to participate through direct contact with schools and various Facebook groups for teachers. Participants gave informed consent to participate in the study and took approximately 25 min to fill out the survey. After filling out the questionnaires, participants were given the opportunity to read a short text with basic information about the new circumplex model of teachers' (de)motivating styles, if they were interested. The study was conducted in line with the Helsinki Declaration for ethical research principles.

### Instruments

#### *The Situations-in-School Questionnaire*

The Situations-in-School Questionnaire (Aelterman et al., 2019) consists of 15 vignettes representing teaching situations that commonly occur during classroom instruction. For each of the vignettes, participants were provided

---

with four ways a teacher might handle that situation. Each way corresponds to one of four (de)motivating teaching styles. Participants were asked to indicate how much each option does or does not describe the way they have acted in the past in similar situations. For example: “At a difficult point in the lesson, students begin to complain. In response, you: a) Accept their negative feelings as okay. Assure them that you are open to their input and suggestions. (*Autonomy-supportive*); b) Insist they pay attention. They must learn this material for their own good. (*Control*); c) Show and teach them a helpful strategy for how to break down the problem to solve it step-by-step. (*Structure*); d) Just ignore the whining and complaining. They need to learn to get over the obstacles themselves. (*Chaos*).”

For each of the items, participants gave answers on a 7-point scale ranging from 1 (does not describe me at all) to 7 (describes me extremely well). The results were calculated as means for each of the teaching styles, and Cronbach’s alpha coefficients were .83 for Chaos and Control, .84 for Autonomy-support, and .85 for Structure.

#### *Basic psychological need satisfaction and frustration scale*

Basic psychological need satisfaction and frustration scale (Chen et al., 2015) measures satisfaction of all three basic psychological needs of autonomy, competence, and relatedness, (12 items) and similarly, basic needs frustration for the same needs (12 items). Teachers in this study indicated how well each item describes how they typically feel from 1 (not at all true for me) to 5 (very true for me) in the context of their work in school. The measure can be used to operationalize specific basic needs of autonomy, competence, and relatedness, or be used as a global assessment of need satisfaction/frustration. Following many authors in the field (Aelterman et al., 2019; Moe & Katz, 2022; Vermote et al., 2022) and for the sake of parsimony, in this study we focus on the aggregated score for need satisfaction ( $\alpha = .90$ ) and need frustration ( $\alpha = .86$ ).

### *Short Index of Job Satisfaction (SJIS)*

Short Index of Job Satisfaction (SJIS; Judge et al., 2000) consists of 5 items (e.g. I feel fairly satisfied with my present job). The answers were given on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Reliability in this study was  $\alpha = .86$ .

### *Emotional exhaustion*

Emotional exhaustion (Wharton, 1993) consists of 6 items (e.g. "I feel emotionally drained from my work"). The answers were given on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Reliability was  $\alpha = .86$ .

## Data Analysis

In order to examine our hypotheses, we first calculated descriptive indicators, as well as bivariate correlations between all study variables. We further proceeded to do a mediation analyses with two parallel mediators by using PROCESS macros for SPSS (Hayes, 2008).

## Results

Table 1 shows descriptive statistics and correlations between study variables. Autonomy-supportive style and structure style are significantly positively related. Basic needs satisfaction is significantly positively related to those two styles and job satisfaction. Control and chaos styles are positively related to each other, and basic needs frustration is positively related to those two styles. However, emotional exhaustion is positively related to chaos, while its correlation with control is not statistically significant. The correlation between emotional exhaustion and basic needs frustration is positive.

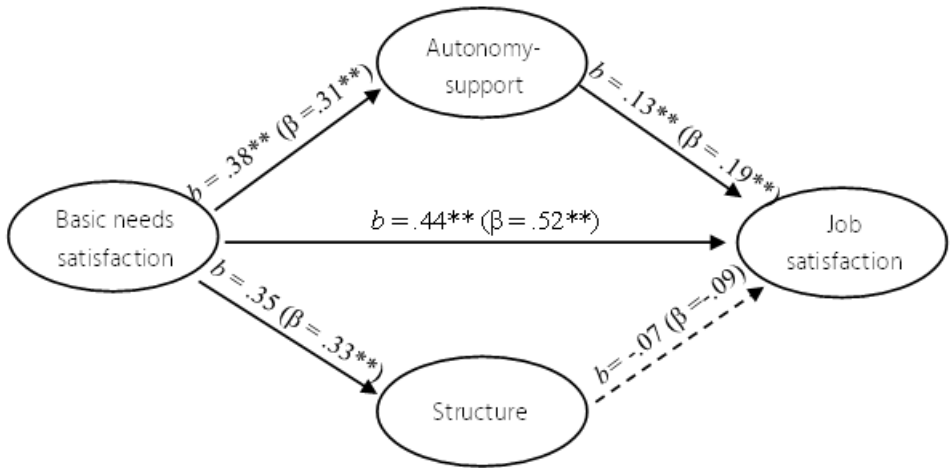
**Table 1**

*Descriptive statistics and correlations between study variables (N = 365)*

		<i>M</i>	<i>SD</i>	Range	1	2	3	4	5	6	7
1.	Basic needs satisfaction	5.89	0.77	3.33-7.00							
2.	Basic needs frustration	2.26	0.85	1.00-5.33	-.70***						
3.	Autonomy-support	5.11	0.91	1.80-7.00	.31***	-.26***					
4.	Structure	5.75	0.81	1.27-7.00	.32***	-.24***	.73***				
5.	Chaos	2.24	0.81	1.00-6.40	-.26***	.34***	-.46***	-.56***			
6.	Control	3.43	0.95	1.20-6.40	-.03	.16**	-.23***	.05	.32***		
7.	Job satisfaction	4.10	0.68	1.60-5.00	.57***	-.59***	.28***	.22***	-.17**	-.09	
8.	Emotional exhaustion	2.34	0.87	1.00-4.83	-.52***	.61***	-.18**	-.16**	.12*	.06	-.73***

*Note.* \*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$

In order to examine the mediating role of autonomy-supportive and structuring motivational styles in the relationship between the satisfaction of basic psychological needs and job satisfaction among teachers, we conducted a mediation analysis with two parallel mediators. Statistical significance of indirect effects was assessed using the Bootstrap technique for confidence intervals (Hayes, 2018). Figure 2 shows the obtained mediation model. In line with our expectations, higher levels of need satisfaction were associated with more reported use of both motivating styles of autonomy support and structure. However, only autonomy support was significantly associated with higher levels of job satisfaction, but not structure. Higher levels of basic needs satisfaction, in line with expectations, were linked to higher levels of job satisfaction.

**Figure 2***Mediation model explaining the bright pathway*

*Note.* Solid lines indicate statistically significant effects ( $**p < .01$ ), while the dashed line represents a statistically non-significant association.

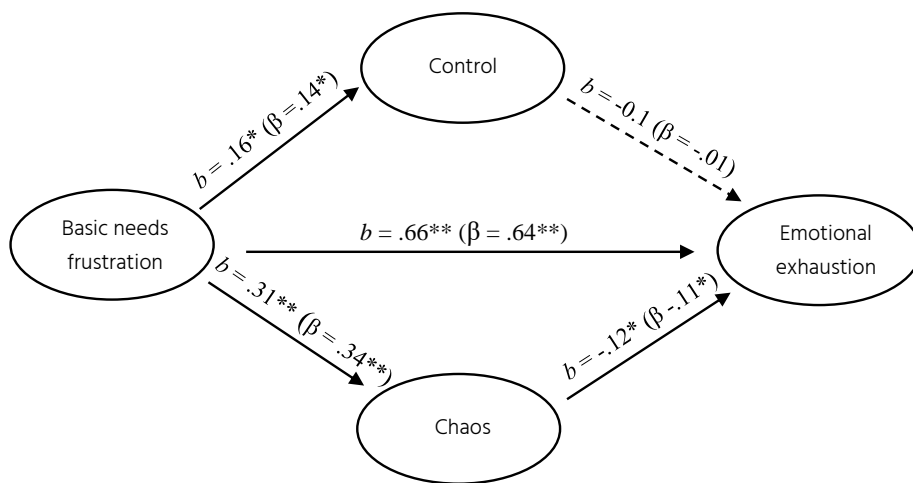
The model explained 31% of the variance in job satisfaction. While the direct effect of basic needs satisfaction on job satisfaction was statistically significant ( $b = 0.44$ , LLCI = 0.36, ULCI = 0.52), the total indirect effect was not significant ( $b = 0.02$ , LLCI = -0.01, ULCI = 0.06). Examination of specific indirect effects revealed that the autonomy-supportive style partially mediated the relationship between need satisfaction and job satisfaction ( $b = 0.05$ , LLCI = 0.01, ULCI = 0.09). The motivating style of structure was not a significant mediator ( $b = -0.02$ , LLCI = -0.08, ULCI = 0.02).<sup>1</sup>

<sup>1</sup> Given some research findings showing the importance of working experience, teaching level (e.g., elementary vs. high school) and the number of students taught (Aelterman et al., 2019) for teachers' (de)motivating styles we conducted the same analyses using the above mentioned variables as covariates. However, the statistical (non)significance of all the paths from Figures 2 and 3 remained the same.

To examine the dark pathway to teachers’ professional well-being, we also conducted a mediation analysis with two parallel mediators (Figure 3). Again, in line with our expectations, basic needs frustration was associated with higher reported use of demotivating styles of control and chaos, and with higher levels of emotional exhaustion. In this model, the chaotic style showed significant, although negative, associations with emotional exhaustion, while the link between control and emotional exhaustion was not significant.

**Figure 3**

*Mediation model explaining the dark pathway*



*Note.* Solid lines depict statistically significant effects ( $*p < .05$ ,  $**p < .01$ ), while the dashed line represents a statistically non-significant association.

The model explained 37% of the variance in emotional exhaustion. While the direct effect of basic needs frustration on emotional exhaustion was statistically significant ( $b = 0.65$ ,  $LLCI = 0.56$ ,  $ULCI = 0.75$ ), the total indirect effect was not significant ( $b = -0.04$ ,  $LLCI = -0.08$ ,  $ULCI = -0.001$ ). Examination of specific indirect effects showed that neither control ( $b = -0.001$ ,  $LLCI = -0.02$ ;  $ULCI = 0.01$ ) nor chaos ( $b = -0.04$ ,  $LLCI = -0.08$ ;  $ULCI = 0.00$ ) were statistically significant mediators.<sup>1</sup>

## Discussion

Our study investigated two models explaining a brighter and darker pathway to teachers' professional well-being. The results are partially in line with our hypotheses that teachers' (de)motivating styles will be an important mechanism explaining the link between teachers' basic needs satisfaction/frustration and positive and negative aspects of their well-being. Teachers' basic needs satisfaction was a significant predictor and explained almost a third of the job satisfaction variance. Teachers who report their basic psychological needs for autonomy, competence, and relatedness are satisfied and, at the same time report having higher job satisfaction. These results on Croatian teachers are in line with other similar studies (Collie et al., 2016; Korthagen & Evelein, 2016). In addition, also in line with our expectations, when teachers report their basic psychological needs are being met in their workplace, they also report using more autonomy support and structure as motivating styles. Similar results were obtained in studies on Italian, Belgian, and Chinese middle school and high school teachers (Aelterman et al., 2019; Moè & Katz, 2020; Vermote et al., 2022; Wang, 2023). These results are important given some critiques of the cross-cultural universality of the self-determination theory and its motivational underpinnings (Murphy-Berman & Berman, 2003). Although there seem to be differences in how much certain needs (e.g. autonomy and relatedness) are valued in individualistic vs. collectivistic cultures, SDT research continuously shows individual well-being benefits from having all three basic psychological needs satisfied (Chirkov et al., 2003; Church et al., 2013), and our findings further corroborate that.

Our results further confirmed that when teachers are autonomy-supportive, they are better off in terms of their job satisfaction. This adds to other robust findings from research focusing on autonomy-supportive teaching showing similar links (Su & Reeve, 2011), and is in line with another study focusing on the circumplex model which used feelings of teachers' personal accomplishment as an operationalization of teachers' professional well-being (Moè & Katz, 2020). Our study further extended research on the circumplex model by investigating the role of structure as a motivating style. However, not

---

in line with our expectations, teachers' use of the structuring style did not have a significant direct effect on their job satisfaction (although, the bivariate correlation was significant and positive). Structuring behaviors in the classroom are more closely related to instruction and teaching competencies than autonomy support. Nevertheless, there are some studies showing positive links between teacher job satisfaction and teacher job performance in the classroom (Huang et al., 2013). At the same time, structuring behaviors involve a lot of dedication to individual students and helping students in a step-by-step manner to achieve learning outcomes. Given the complexities of today's classrooms and many individual differences between students, this will often involve a lot of differentiation activities which can be quite taxing for teachers (Pozas et al., 2023). Future studies should aim to longitudinally investigate the direction of the link between teaching behaviors and job satisfaction, as well as other possible mediating and moderating variables. For example, maybe teachers feel undervalued in their structuring efforts (which might prove to be an important factor only in educational contexts where the teaching profession is undervalued by society in general, as is the case in Croatia), and that is why higher instances of using a structuring style are unrelated to job satisfaction.

Results for the dark pathway are also only partially in line with our expectations. Teacher's need frustration was a significant predictor of their emotional exhaustion and again explained about a third of the variance. Teachers who are actively unable to satisfy their needs for autonomy, competence, and relatedness at the same time report poorer well-being in terms of their higher levels of emotional exhaustion. Again, these results are in line with similar studies in other countries (Collie et al., 2016; Van den Berghe et al., 2014). Also, in line with our expectations, and other studies (Aelterman et al., 2019; Moè & Katz, 2020), our results show that teachers who reported higher levels of need frustration also reported more frequent use of demotivating styles of control and chaos. These findings are in line with theoretical assumptions that in order not to slip into inappropriate classroom behaviors, teachers need to have enough energy and capacity, which is something that need frustration diminishes (Aelterman & Vansteenkiste, 2023).



Interestingly, teachers' higher instances of using the demotivating style of chaos were a small, but significant negative predictor of their emotional exhaustion. In other words, those teachers who plan less, abandon students to their own devices, and do not direct students while teaching, report having lower levels of emotional exhaustion. This finding is not in line with the dark pathway or a study that found the theoretically assumed positive relationship between the two (Moè & Katz, 2020). However, it is in line with the theoretical explanation given by the circumplex model which states chaotic teachers are not student, but only teacher-centered (Aelterman & Vansteenkiste, 2023). Our results point to the possibility that using a more chaotic style is a possible self-serving mechanism teachers use to protect themselves when their work becomes overwhelming. Giving credence to this explanation, a longitudinal study found that over the course of an academic year, teachers adopt more frequent use of demotivating styles (Cohen et al., 2022). This could be especially problematic since the same study found that adopting more demotivating styles over time transfers over to students and their lower engagement in the classroom. Future longitudinal studies are needed, which will focus on these specific mechanisms.

Out of all four teachers' (de)motivating styles only one, autonomy support, was a significant mediator between teacher needs and professional well-being. These results are only partially in line with Klusmann et al's (2008) heuristic model. It is possible that behaviors and reactions teachers employ in the classroom to motivate their students are not an important mechanism between their motivation and professional well-being. However, before firmer conclusions about the model itself can be drawn, future studies should aim to investigate the mediating role of other motivating behaviors employed by teachers (e.g., classroom management strategies).

### Study limitations, future studies, and practical implications

Our study has several methodological limitations. Firstly, we utilized self-report measures, which are susceptible to socially desirable responding. This likely resulted in lower variability in demotivating styles, potentially contributing

---

to the insignificance of the results. Secondly, the online methodology led to a convenient sample impeding the generalization of results. Thirdly, it is possible that more intrinsically motivated teachers were self-selected for this study. However, around 17% of our sample expressed at least some intention to leave the teaching profession, which means that we had at least some teachers from the other end of the spectrum. Future studies should try to use observational methods or other sources of data (e.g., students), as well as more representative samples (although the entire teacher population in Croatia consists of 86% women, future studies should try to attract more men to the study). Larger and more representative samples in future studies would lead to firmer and more generalized conclusions. In order to disentangle the direction of the established links longitudinal studies are needed, since cross-sectional studies like this one cannot provide causal explanations.

Regardless, our findings do provide data on the expected determinants and outcomes of teacher (de)motivating styles as defined by the circumplex model and extend previous literature. We call for future studies to investigate both the antecedents and the outcomes of (de)motivating styles and to focus both on individual teacher characteristics and on environmental factors. For example, not much is known about how class size and students' age shape these styles, or how teaching experience and teaching competences are linked to them, although some findings on higher education teachers were not especially encouraging (Huić et al., 2024). Self-determination theory emphasizes the importance of the environmental context for need satisfaction and (de)motivating styles, and only one study so far focused on these aspects (see Vermote et al., 2022), so more research is needed. In addition, future studies could benefit from adopting a fine-grained focus on differences between outcomes of satisfaction/frustration of teachers' specific needs of autonomy, competence, and relatedness, rather than just using an aggregated score as in our study. Some research, adopting a person-centered perspective, showed that the need for relatedness might be especially important for teacher well-being (Haw et al., 2023), and that job crafting behavior aimed to find social support is important for teacher well-being through their need for relatedness

more specifically (Maas et al., 2022). Lately, a new tripartite model added dormant needs to satisfied and frustrated needs (Reeve et al., 2023). Future studies linking the tripartite model and subdimensions of the circumplex model could really enrich the field with a fine-grained picture of how teachers' needs and motivating behaviors are linked.

Our results have two important practical implications. First, given the importance of teacher needs satisfaction for both their classroom behavior and their well-being found in this study, as well as other studies in the field, it is recommended that teachers' work environments be designed in ways that support their needs. This primarily means easing up on the pressures from the educational system. Although this is difficult to achieve in systems highly regulated by the government, it is possible to afford teachers greater autonomy through educational reform (Divjak & Pažur Aničić, 2019). In addition, many studies showed that principals and their leadership styles are crucial for creating space for teacher's autonomy, providing them with opportunities for continuous professional development in order for them to become more competent and creating socially rich and safe environments in schools (Bartholomew et al., 2014, Cuevas et al., 2018; Pelletier et al., 2002). In addition, creating learning communities dedicated to teaching in their schools can help teachers reach all the mentioned goals (Ryan et al., 2023). Secondly, teachers can be taught to support student motivation and use more autonomy support and structure in their classrooms (Reeve et al., 2022; Su & Reeve, 2011). Ahmadi et al. (2023) provide a classification system for teachers' behaviors recommended as motivational and grounded in self-determination theory interventions and is an excellent resource for practitioners aiming to design such interventions for teachers.

### *Acknowledgement*

This study is partially based on Nikolina Čižić's Master Thesis „*Povezanost zadovoljenja potreba i zadovoljstva poslom kod učitelja i nastavnika: medijacijska uloga motivirajućih stilova*“ [The relationship between needs satisfaction and job satisfaction among teachers: the mediating role of motivational styles] defended under the mentorship of Aleksandra Huić at the

---

Department of Psychology, Faculty of Humanities and Social Sciences,  
University of Zagreb in September 2023.

### *Conflict of Interest*

The authors have no conflicts of interest to declare

### *Data availability statement*

Data used in this paper are available upon a reasonable request.

## References

- Abdulaziz Alfayez, A., Noman, M., Saeed Alqahtani, A., Ibrahim Altuwaijri, A., & Kaur, A. (2021). Principal's learning-centred leadership practices and teacher's wellbeing: a self-determination theory perspective. *Educational Studies*, 1-19. <https://doi.org/10.1080/03055698.2021.1960150>
- Aelterman, N., & Vansteenkiste, M. (2023). Need-supportive and need-thwarting socialization: A circumplex approach. In R. M. Ryan (Ed.) *The Oxford handbook of self-determination theory* (pp. 236–258). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780197600047.013.21>
- Aelterman, N., Vansteenkiste, M., Haerens, L., Soenens, B., Fontaine, J. R. & Reeve, J. (2019). Toward an integrative and fine-grained insight in motivating and demotivating teaching styles: The merits of a circumplex approach. *Journal of Educational Psychology*, 111(3), 497. <https://doi.org/10.1037/edu0000293>
- Ahmadi, A., Noetel, M., Parker, P., Ryan, R. M., Ntoumanis, N., Reeve, J., Beauchamp, M., Dicke, T., Yeung, A., Ahmadi, M., Bartholomew, K., Chiu, T. K. F., Curran, T., Erturan, G., Flunger, B., Frederick, C., Froiland, J. M., González-Cutre, D., Haerens, L., ... & Lonsdale, C. (2023). A classification system for teachers' motivational behaviors recommended in self-determination theory interventions. *Journal of Educational Psychology*, 115(8), 1158–1176. <https://doi.org/10.1037/edu0000783>
- Aldrup, K., Klusmann, U. & Lüdtke, O. (2017). Does basic need satisfaction mediate the link between stress exposure and well-being? A diary study among beginning teachers. *Learning and Instruction*, 50, 21-30. <https://doi.org/10.1016/j.learninstruc.2016.11.005>
- Bardach, L., Klassen, R. M., & Perry, N. E. (2022). Teachers' psychological characteristics: Do they matter for teacher effectiveness, teachers' well-being, retention, and

- interpersonal relations? An integrative review. *Educational Psychology Review*, 34(1), 259-300. <https://doi.org/10.1007/s10648-021-09614-9>
- Bartholomew, K. J., Ntoumanis, N., Cuevas, R., & Lonsdale, C. (2014). Job pressure and ill-health in physical education teachers: The mediating role of psychological need thwarting. *Teaching and Teacher Education*, 37, 101-107. <https://doi.org/10.1016/j.tate.2013.10.006>
- Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., der Kaap-Deeder, V., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., Van Petegem, S. & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion*, 39(2), 216-236. <https://doi.org/10.1007/s11031-014-9450-1>
- Cheon, S. H., Reeve, J., Yu, T. H. & Jang, H. R. (2014). The teacher benefits from giving autonomy support during physical education instruction. *Journal of Sport and Exercise Psychology*, 36(4), 331-346. <https://doi.org/10.1123/jsep.2013-0231>
- Chirkov, V., Ryan, R. M., Kim, Y., & Kaplan, U. (2003). Differentiating autonomy from individualism and independence: a self-determination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality and Social Psychology*, 84(1), 97 – 110. <https://doi.org/10.1037/0022-3514.84.1.97>
- Church, A. T., Katigbak, M. S., Locke, K. D., Zhang, H., Shen, J., de Jesús Vargas-Flores, J., ... & Ching, C. M. (2013). Need satisfaction and well-being: Testing self-determination theory in eight cultures. *Journal of Cross-Cultural Psychology*, 44(4), 507-534. <https://doi.org/10.1177/0022022112466590>
- Cohen, R., Katz, I., Aelterman, N. & Vansteenkiste, M. (2022). Understanding shifts in students' academic motivation across a school year: the role of teachers' motivating styles and need-based experiences. *European Journal of Psychology of Education*. <https://doi.org/10.1007/s10212-022-00635-8>
- Collie, R. J., Shapka, J. D., Perry, N. E. & Martin, A. J. (2016). Teachers' psychological functioning in the workplace: Exploring the roles of contextual beliefs, need satisfaction, and personal characteristics. *Journal of Educational Psychology*, 108(6), 788–799. <https://doi.org/10.1037/edu0000088>
- Cuevas, R., Ntoumanis, N., Fernandez-Bustos, J. G., & Bartholomew, K. (2018). Does teacher evaluation based on student performance predict motivation, well-

- being, and ill-being?. *Journal of School Psychology*, 68, 154-162.  
<https://doi.org/10.1016/j.jsp.2018.03.005>
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.  
[https://doi.org/10.1207/S15327965PLI1104\\_01](https://doi.org/10.1207/S15327965PLI1104_01)
- Divjak, B., & Pažur Aničić, K. (2019). *Priprema, praćenje i evaluacija eksperimentalnog programa Cjelovite kurikularne reforme* [Preparing, monitoring and evaluation of the experimental program of the curriculum reform]. Ministry of Science and Education.
- Golešić, M. (2022). *Individualne i kontekstualne odrednice nastavnčkih motivirajućih stilova*. [Individual and contextual determinants of teachers' motivating styles; Unpublished master's thesis]. Faculty of Humanities and Social Sciences, University of Zagreb.
- Haerens, L., Aelterman, N., Vansteenkiste, M., Soenens, B. & Van Petegem, S. (2015). Do perceived autonomy-supportive and controlling teaching relate to physical education students' motivational experiences through unique pathways? Distinguishing between the bright and dark side of motivation. *Psychology of Sport and Exercise*, 16, 26–36. <https://doi.org/10.1016/j.psychsport.2014.08.013>
- Harrison, M. G., King, R. B., & Wang, H. (2023). Satisfied teachers are good teachers: The association between teacher job satisfaction and instructional quality. *British Educational Research Journal*, 49(3) 476-498. <https://doi.org/10.1002/berj.3851>
- Hascher, T., & Waber, J. (2021). Teacher well-being: A systematic review of the research literature from the year 2000–2019. *Educational Research Review*, 34, 100411. <https://doi.org/10.1016/j.edurev.2021.100411>
- Hayes, A. F. (2018). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. Guilford Press.
- Haw, J. Y., Nalipay, M. J. N., & King, R. B. (2023). Perceived relatedness-support matters most for teacher well-being: a self-determination theory perspective. *Teachers and Teaching*, 1-17. <https://doi.org/10.1080/13540602.2023.2263736>
- Huang, S. Y., Huang, Y.C., Chang, W. H., Chang, L. Y., & Kao, P. H. (2013). Exploring the effects of teacher job satisfaction on teaching effectiveness. *International Journal of Modern Education Forum (IJMEF)*, 2(1), 17–30. <http://dpi-journals.com/index.php/IJMEF/article/viewFile/444/346>

- Huić, A., Pavlin-Bernardić, N. & Vlahović-Štetić, V. (2024). Investigating the circumplex model of (de)motivating teaching styles in higher education. *Psihologijske teme*, 33(2), 417-437. <https://doi.org/10.31820/pt.33.2.9>
- Jang, H., Kim, E. J., & Reeve, J. (2016). Why students become more engaged or more disengaged during the semester: A self-determination theory dual-process model. *Learning and Instruction*, 43, 27-38. <https://doi.org/10.1016/j.learninstruc.2016.01.002>
- Judge, T. A., Bono, J. E. & Locke, E. A. (2000). Personality and job satisfaction: The mediating role of job characteristics. *Journal of Applied Psychology*, 85(2), 237–249. <https://doi.org/10.1037/0021-9010.85.2.237>
- Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O. & Baumert, J. (2008). Teachers' occupational well-being and quality of instruction: The important role of self-regulatory patterns. *Journal of Educational Psychology*, 100(3), 702-715. <https://doi.org/10.1037/0022-0663.100.3.702>
- Korthagen, F. A. & Evelein, F. G. (2016). Relations between student teachers' basic needs fulfillment and their teaching behavior. *Teaching and Teacher Education*, 60, 234-244. <https://doi.org/10.1016/j.tate.2016.08.021>
- Madigan, D. J., & Kim, L. E. (2021). Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. *Teaching and Teacher Education*, 105, 103425. <https://doi.org/10.1016/j.tate.2021.103425>
- Malinen, O. P., & Savolainen, H. (2016). The effect of perceived school climate and teacher efficacy in behavior management on job satisfaction and burnout: A longitudinal study. *Teaching and Teacher Education*, 60, 144-152. <https://doi.org/10.1016/j.tate.2016.08.012>
- Maslach, C., & Leiter, M. P. (2017). Understanding burnout: New models. In C. L. Cooper and J. C. Quick (Eds.): *The handbook of stress and health: A guide to research and practice* (pp. 36-56). Wiley Blackwell. <https://doi.org/10.1002/9781118993811.ch3>
- Maas, J., Schoch, S., Scholz, U., Rackow, P., Schüler, J., Wegner, M., & Keller, R. (2022). Satisfying the need for relatedness among teachers: Benefits of searching for social support. *Frontiers in Education*, 7, 851819. <https://doi.org/10.3389/feduc.2022.851819>

- Moè, A. & Katz, I. (2020). Self-compassionate teachers are more autonomy supportive and structuring whereas self-derogating teachers are more controlling and chaotic: The mediating role of need satisfaction and burnout. *Teaching and Teacher Education*, 96, 103173. <https://doi.org/10.1016/j.tate.2020.103173>
- Moè, A. & Katz, I. (2021). Emotion regulation and need satisfaction shape a motivating teaching style. *Teachers and Teaching*, 27(5), 370-387. <https://doi.org/10.1080/13540602.2020.1777960>
- Moè, A. & Katz, I. (2022). Need satisfied teachers adopt a motivating style: The mediation of teacher enthusiasm. *Learning and Individual Differences*, 99, 102203. <https://doi.org/10.1016/j.lindif.2022.102203>
- Murphy-Berman, V., & Berman, J. J. (Eds.). (2003). *Cross-cultural differences in perspectives on the self* (Vol. 49). U of Nebraska Press. <https://doi.org/10.1027/1016-9040.9.4.283>
- Pelletier, L. G., Séguin-Lévesque, C. & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology*, 94(1), 186. <https://doi.org/10.1037//0022-0663.94.1.186>
- Pozas, M., Letzel-Alt, V., & Schwab, S. (2023). The effects of differentiated instruction on teachers' stress and job satisfaction. *Teaching and Teacher Education*, 122, 103962. <https://doi.org/10.1016/j.tate.2022.103962>
- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, 44(3), 159–175. <https://doi.org/10.1080/00461520903028990>
- Reeve, J., & Cheon, S. H. (2021). Autonomy-supportive teaching: Its malleability, benefits, and potential to improve educational practice. *Educational Psychologist*, 56(1), 54–77. <https://doi.org/10.1080/00461520.2020.1862657>
- Reeve, J., Jang, H. R., Cheon, S. H., Moss, J. D., Ko, H., & Jang, H. (2023). Extending self-determination theory's dual-process model to a new tripartite model to explain diminished functioning. *Motivation and Emotion*, 7, 691–710. <https://doi.org/10.1007/s11031-023-10019-0>
- Reeve, J., Ryan, R. M., Cheon, S. H., Matos, L., & Kaplan, H. (2022). *Supporting students' motivation: Strategies for success*. Routledge.
- Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: how self-determined teaching may lead to self-determined learning.



- Journal of Educational Psychology*, 99(4), 761–774.  
<https://doi.org/10.1037/0022-0663.99.4.761>
- Ryan, R. M. & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford publications.  
<https://doi.org/10.1521/978.14625/28806>
- Ryan, R. M., Duineveld, J. J., Di Domenico, S. I., Ryan, W. S., Steward, B. A., & Bradshaw, E. L. (2022). We know this much is (meta-analytically) true: A meta-review of meta-analytic findings evaluating self-determination theory. *Psychological Bulletin*, 148(11-12), 813–842. <https://doi.org/10.1037/bul0000385>
- Ryan, R. M., Reeve, J., Kaplan, H., Matos, L. & Cheon, S. H. (2023). Education as flourishing: Self-determination theory in schools as they are and as they should be. In R. M. Ryan (Ed.), *The Oxford handbook of self-determination theory* (pp. 591–618). Oxford University Press.  
<https://doi.org/10.1093/oxfordhb/9780197600047.001.0001>
- Schonfeld, I. S., & Bianchi, R. (2016). Burnout and depression: two entities or one?. *Journal of Clinical Psychology*, 72(1), 22–37. <https://doi.org/10.1002/jclp.22229>
- Shah, M. J., Akhtar, G., Zafar, H. & Riaz, A. (2012). Job satisfaction and motivation of teachers of public educational institutions. *International Journal of Business and Social Science*, 3(8), 271–281.
- Skinner, E. & Edge, K. (2002). Self-determination, coping, and development. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 297–337). University of Rochester Press.
- Su, Y. L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational Psychology Review*, 23, 159–188. <https://doi.org/10.1007/s10648-010-9142-7>
- Toropova, A., Myrberg, E. & Johansson, S. (2021). Teacher job satisfaction: the importance of school working conditions and teacher characteristics. *Educational Review*, 73(1), 71–97.  
<https://doi.org/10.1080/00131911.2019.1705247>
- Van den Berghe, L., Vansteenkiste, M., Cardon, G., Kirk, D., & Haerens, L. (2014). Research on self-determination in physical education: Key findings and proposals for future research. *Physical Education and Sport Pedagogy*, 19(1), 97–121.  
<https://doi.org/10.1080/17408989.2012.732563>

- 
- Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motivation and Emotion*, 44(1), 1–31. <https://doi.org/10.1007/s11031-019-09818-1>
- Vermote, B., Aelterman, N., Beyers, W., Aper, L., Buyschaert, F. & Vansteenkiste, M. (2020). The role of teachers' motivation and mindsets in predicting a (de) motivating teaching style in higher education: A circumplex approach. *Motivation and Emotion*, 44, 270–294. <https://doi.org/10.1007/s11031-020-09827-5>
- Vermote, B., Vansteenkiste, M., Aelterman, N., Van der Kaap-Deeder, J. & Beyers, W. (2022). Teachers' psychological needs link social pressure with personal adjustment and motivating teaching style. *The Journal of Experimental Education*, 91(4), 696–717. <https://doi.org/10.1080/00220973.2022.2039584>
- Wang, J. (2023). *The characteristics, predictors, and outcomes of (de) motivating teaching styles: A cross-cultural investigation*. [Unpublished doctoral dissertation]. Università degli Studi di Padova.
- Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs and affective experiences. *Human Resource Management Review*, 12(2), 173-194. [https://doi.org/10.1016/S1053-4822\(02\)00045-1](https://doi.org/10.1016/S1053-4822(02)00045-1)
- Wharton, A. S. (1993). The affective consequences of service work: Managing emotions on the job. *Work and Occupations*, 20(2), 205-232. <https://doi.org/10.1177/0730888493020002004>