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DRAINING OR REWARDING? MEASURING THE RELATIONSHIP WITH STUDENTS AND ITS ROLE IN IMPROVING THE PROFESSIONAL WELL-BEING OF UNIVERSITY STAFF

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Little attention has been paid to the role that the quality of relationship with students can play in the professional well-being of academics. The study assessed the psychometric properties of a new scale measuring the dual role of the relationship with students, considered as a form of support or as a draining request. Three samples were enrolled: 289 in 2017 (69.9 % men; 29-70 years; *M* = 46.9, *SD* = 9.9), 592 in 2019 (67.9% men, 28-70 years; *M* = 47.3, *SD* = 9.4), and 623 in 2021 (70.5% men, 28-69 years; *M* = 48.7, *SD* = 9.1). CFA and IRT models were used to test construct validity and reliability of the scale in the first two samples, and a SEM approach was applied in the third sample to assess its nomological validity within the Job Demands-Resources model. The scale resulted in a useful measure of the relationship with students and its effects on the academics well-being.

Keywords: Relationships with students; Faculty well-being; University; Measurement invariance; Job Demands-Resources model.

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In human-centered professions, such as education, health, and public services, the quality of the relationship with the service user is a key dimension of the quality of working life, which can be considered in a dual role. Several authors emphasize the demanding role played by disproportionate demands, mistreatment, or aggressive behavior of users (Dormann & Zapf, 2004; Koopmann et al., 2015; LeBlanc & Kelloway, 2002). The negative side of relationships with users or clients is widely described as a source of professional demands that can deplete professionals' psychological resources and lead to emotional exhaustion and other negative professional consequences, such as decreasing job satisfaction and work engagement, which increases the intention to leave work and fosters a vicious cycle of negative relationships between professionals and clients (e.g., Groth & Grandey, 2012; Viotti et al., 2015). On the other hand, the experience of positive relationships with users through the expression of appreciation, gratitude (Cortini et al., 2019), or compliance with the rules of the work environment can be identified as a form of social support, namely customer-initiated support, which can act as instrumental or emotional behavior that facilitates coping with service demands (Zimmermann et al., 2011). Although the "positive side" of professional-client interaction has received less attention compared to the "negative side" or other forms

of social support (e.g., support from supervisors or colleagues), authors have demonstrated its positive association with employees' job performance and job satisfaction (Loera et al., 2016; Martini et al., 2016) and its role as a protective factor against burnout symptoms (Converso et al., 2015; Martini, Viotti, et al., 2019). It can therefore promote a positive cycle of social exchange (Zimmermann et al., 2011), in which the reciprocity of interaction can strengthen motivation and a sense of purpose in work.

The relationship between students and teachers has been extensively analyzed as a source of students' academic success and well-being (Scherer et al., 2016; Vandenbroucke et al., 2018; Wentzel et al., 2010), that is, in terms of the emotional and instrumental support they receive from teachers, but less attention has been paid to the role that the quality of the relationship may have on the professional well-being of teachers themselves (Spilt et al., 2011). This gap is even more pronounced in the academic context. Teaching in the academic context involves not only updating and planning courses, but also the relationship with students (Converso et al., 2018), which is one of the most important work-related tasks alongside research activities and one of the most important and satisfying tasks for the university staff (Darabi et al., 2016; Rhodes et al., 2007).

Despite the importance of such relational dimension in the working lives of academics, there is a lack of studies that propose a valid and reliable measurement of it, both in terms of its rewarding and negative aspects. Moreover, as an increasing number of studies have investigated the role of various work environment factors in influencing the quality of academics' working life (see, among others, Bakker et al., 2010; Boyd et al., 2011; Heiden et al., 2021; McCarty & Dragouni, 2020; Mudrak et al., 2018; Sarwar et al., 2021; Siobhan & Gail, 2022), none of them have assessed the relationship with students, which calls for increased attention to the study of these issues (Hagenauer & Volet, 2014).

The Dual Role of the Relationship with Students: Analysis of the Literature

Studies conducted mainly in preschool, primary and secondary school contexts show the influence of both positive and negative teacher-student relationships as a source of job satisfaction or stress in teachers (Cui et al., 2022). Experiencing constructive relationships with students, and not only with colleagues and faculty administrators, is related to teachers' level of inspiration and engagement in their work and enhances their tendency to develop their professional skills (Buonomo et al., 2017). As with other people-centered professions, building positive relationships with students and experiencing connectedness are among the main reasons that inspire the decision to become a teacher and maintain daily commitment to one's work (Aldrup et al., 2017; Schmidt et al., 2017). On the other hand, students' disruptive behavior and challenges in the classroom, students' lack of motivation and dealing with heterogeneity have been found to be important stress factors for the teaching profession (Aldrup et al., 2017; Xie & Derakhshan, 2021). These results can be explained by the fact that student misbehavior hinders the development of a close connection because it causes destructive relationships and can be understood as a lack of appreciation for one's own work (Spilt et al., 2011).

The dual role of the relationship with students can also be emphasized in the academic context. Echoing these concepts from the wider literature on customer-related social support (Martini, Viotti, et al., 2019; Zimmermann et al., 2011), students can be a source of emotional support by expressing their appreciation and gratitude. They can also provide informational support by providing useful information or simply avoiding overwhelming professors with unnecessary or excessive emails or requests (Martini, Guidetti, et al., 2019). Indeed, relationships between university teachers and students have been identified as positive elements of the role, when seeing students' progress and how they develop their knowledge

and understanding over the duration of a course is a rewarding element of teaching (Darabi et al., 2016; Hamilton, 2019). While these interactions are generally seen as positive, studies also show negative aspects of interactions with some students behaving less respectfully, talking in lectures or making excessive or inappropriate requests (Darabi et al., 2016; Irwin & Cederblad, 2019; Lahtinen, 2008).

The Relationship with Students and its Association with Faculty Staff Well-Being in the Light of the JD-R Model

Given the evidence above, we can argue that interactions with students can be described as similarly double-edged, being both a source of well-being and stress. It is then possible to conceptualize these two elements using the Job Demands-Resources (JD-R) model (Demerouti et al., 2001) as a theoretical frame of reference. The JD-R model represents one of the most important theoretical frameworks in the field of occupational health psychology, as it allows the formulation of a specific contextual analysis of job demands and resources and their relationship with well-being outcomes, that is, burnout and work engagement (Bakker et al., 2014). While burnout refers to a state of exhaustion and cynicism toward work, engagement is defined as a positive motivational state of vigor, dedication, and absorption (Bakker et al., 2014). According to this model, job demands and resources initiate two independent processes. The first underpins health impairment, in which excessive work demands lead to constant activation and overconsumption of energy resources, to burnout symptoms and health damage. The second process is the motivational one: job resources that satisfy the psychological needs of the individual (Deci & Ryan, 1985), such as autonomy, competence, or relatedness, lead to commitment and motivation on the part of the employee. When resources are lacking, individuals are unable to cope with demands and achieve their goals, leading to withdrawn behavior and lower work engagement (Bakker & Demerouti, 2014). In light of this definition and previous evidence (Martini, Guidetti, et al., 2019), students' requests and students' support are key elements of academic work and can be conceptualized as job demands and job resources respectively, both of which are supposed to be directly related to burnout and work engagement.

Moreover, according to the hypothesis of a dual process linking job demands and resources to well-being outcomes (Demerouti et al., 2001), it can be hypothesized that students' requests represent a job demand that can affect exhaustion and cynicism through a process of health impairment, while students' support represents a job resource that can activate a motivational process that in turn sustains engagement at work. To evaluate this dual pathway, one can consider the mediating role of two relevant factors of academic work, namely workload and meaningfulness of work.

Studies in the field of academic faculty well-being have extensively emphasized that workload, in terms of bureaucratic demands, deadlines, increased work pace related to competition, research activities, and an increasing number of students to supervise (Bentley et al., 2013; Boyd et al., 2011; Darabi et al., 2016; Mudrak et al., 2018), is one of the most influential psychosocial hazards in academic work (Wray & Kinman, 2022). In this sense, interaction with students may increase perceived workload when academics are frustrated because they are dealing with poorly motivated, ill-prepared students, or that make unreasonable or excessive demands while having to make decisions about their assessment, especially when workload increases due to large classes and administrative tasks (Darabi et al., 2016; Hammoudi Halat et al., 2023; Xu & Wang, 2023). Therefore, it can be hypothesized that students' draining requests are positively related to increased workload, which in turn increases emotional exhaustion and cynicism and decreases work engagement.

On the other hand, the pedagogical impact of teaching can be viewed as an intrinsic reward or source of meaning when teachers receive positive feedback from students who are passionate and motivated (Darabi et al., 2016; Hamilton, 2019). Meaningfulness of work, which refers to the extent to which an employee perceives the work as meaningful, valuable, and rewarding (Chalofsky, 2003), is the subjective evaluation of an individual about their professional activities as congruent with their personal values. Interacting with students and teaching represent opportunities to express oneself as a human being by working with and influencing students (Demirkasimoglu, 2015). In light of this, it can be hypothesized that students' support is positively associated with higher work meaning, which in turn is a prerequisite for higher work engagement and lower emotional exhaustion and cynicism.

The Present Study

Based on these premises and considering the Job Demands-Resources model as a framework (Demerouti et al., 2001), the aims of the present study are:

1. Filling the gap created by the lack of instruments to measure the dual role of the relationship with students in the academic context. Specifically, a new scale has been developed to measure the relationship in terms of a) students' draining requests resulting from excessive and unreasonable demands and lack of motivation, and b) students' support, that is, recognition and gratitude experienced in the relationship with students. The psychometric properties of the new scale are presented.

2. Examining the association between the relationship with students and well-being at work, we hypothesize: (H1) students' draining requests is positively related to burnout symptoms — emotional exhaustion (a) and cynicism (b) — and negatively related to work engagement (c); (H2) students' support is negatively related to burnout symptoms — emotional exhaustion (a) and cynicism (b) — and positively related to work engagement (c); the presence of a dual process mediated by increased workload on the one hand and increased work meaning on the other, specifically (H3) students' requests are indirectly related to emotional exhaustion (a), cynicism (b), and work engagement (c) through the mediating role of workload; (H4) students' support is indirectly related to emotional exhaustion (a), cynicism (b), and work engagement (c) through the mediating role of work meaning.

Method

Development of the Relationship with Student's Scale in the Academic Context

The design comprised two steps. The first was a research phase for the development and psychometric evaluation of a scale to measure the relationship with students among university faculty members, using both the CFA and IRT approaches. Based on a literature review and existing scales measuring customer-related social stressors and customer-initiated social support (Dormann & Zapf, 2004; Loera et al., 2016; Zimmermann et al., 2011), initial items were created to guide item construction for scale development. We were able to identify a list of statements with two main components to characterize the relationship with the student as a source of support (four items) or as a source of stressful requests (four items). For each item, a group of 10 experts in psychometrics and psychosocial research, employed in two northern Italy universities, assessed the clarity of wording and expression, face validity, and content validity of the construct being

measured. They also assessed the usability of the item response scale. Based on the experts' suggestions, some items were changed, but all eight items were retained. The latest version of the instrument was then presented to each expert independently and approved unanimously. The second step aimed to test the influence of the relationship with students on well-being at work, that is, emotional exhaustion, cynicism, and engagement at work, as hypothesized previously.

Participants

Data used in the present study included a population of full professors (FP), associate professors (AP), and assistant professors (AsP), and involved three samples. The first was composed of 289 academics enrolled in 2017 (here and after S1; 32.25% out of 896), 69.9 % men, mean age 46,9 years (*SD* = 9.9, range 29-70 years), 19.03% FP, 39.44% AP, and 41.52% AsP. The second sample consisted of 592 academics (here and after S2; 60.29% out of 982) recruited in 2019 (67.9% men, age range 28-70 years, *M* = 47.3, *SD* = 9.4), 23.31% FP, 42.06 AP, and 34.63% AsP. The third sample was composed of 623 academics (here and after S3; 65.17% out of 956) recruited in 2021 (70.5% men, age range 28-69 years, *M* = 48.7, *SD* = 9.1), and regarding academic roles the percentage were: 28.41% FP, 44.94% AP, and 26.65% AsP.

Procedure

Data were collected in three successive surveys in the years 2017, 2019, and 2021 as part of a research program that aimed to assess work life quality within a large public higher education institution in the north of Italy. An online self-report questionnaire was sent to the entire teaching and research staff population of the institution, which comprised 896 persons in 2017, 982 in 2019, and 956 in 2021. In the end, a total of 1,504 questionnaires were received and/or accepted (289 + 592 + 623).

The present study is part of a larger study on psychological well-being at work, requested by the Rector of the academic institution and approved by the board of administration and the administrative and academic union delegations of the mentioned university. The research conformed to the 1995 Declaration of Helsinki (and further revisions) and all the contents of the questionnaire were previously approved by the university committee that commissioned the project.

Measures

For the present study, we used the following measures:

Work meaning. Four items (ω = .87) from the Copenhagen Psychosocial Questionnaire (COPSOQ; Kristensen et al., 2005) assessed the organization of work and job content (e.g., "Do you feel that the work you do is important?"), with respondents indicating their answer on a 4-point Likert scale from 0 (*not at all*) to 3 (*completely*).

Work overload. Seven items (ω = .83) from the Work Conditions Scale (Melin et al., 2014) assessed work intensity and complexity of work (e.g., "I work with many different work tasks at the same time"), with respondents indicating their answer on a 4-point Likert scale from 0 (*very seldom/never*) to 3 (*very often/always*).

Influence. Three items (ω = .84) from the Job Content Questionnaire (JCQ; Karasek et al., 1998) measured the academic's decision latitude and the perception of having influence (e.g., "I have the possibility to influence the decision-making processes of my Department"), with participants answering on a 4-point Likert scale from 0 (*very seldom/never*) to 3 (*very often/always*).

Conflictual climate. Three items (ω = .77) from the Indicator Tool (Marcatto et al., 2011) measured conflictual climate among colleagues (e.g., "Workplace relationships are strained"), with participants answering on a 4-point Likert scale from 0 (*very seldom/never*) to 3 (*very often/always*).

Supportive climate. Four items (ω = .87) from the Indicator Tool (Marcatto et al., 2011) measured the support received from colleagues (e.g., "Colleagues are available to listen to my work problems"), with participants answering on a 4-point Likert scale from 0 (*very seldom/never*) to 3 (*very often/always*).

Relationship with administrative staff. Three ad hoc items (ω = .78) measured how much academics perceived support in the relationship with administrative staff (e.g., "I can count on the support of administrative staff for my teaching activities"), with respondents indicating their answer on a 4-point Likert scale from 0 (*not at all*) to 3 (*completely*).

Reward. Four ad hoc items (ω = .77) measured how much academics feel recognized and valued for their work from the academic institution (Ateneo) they belong (e.g., "How much do you feel recognized for your teaching activities?"), with respondents indicating their answer on a 4-point Likert scale from 0 (*not at all*) to 3 (*completely*).

Out of hours work request. Three items (ω = .90) measured from the after-hours request (e.g., "I have to answer the phone or e-mail on weekends"), adapted from Ghislieri et al., 2017. Participants rated each item on 4-point Likert scale from 0 (*very seldom/never*) to 3 (*very often/always*).

NTheses. A single item measured how many students' thesis have been supervised during the last academic year.

Work engagement. Nine items (ω = .90) of the Utrecht Work Engagement Scale (UWES-9; Balducci et al., 2010) assessed positive work-related psychological state characterized by the dimensions of vigor (e.g., "At my work, I feel bursting with energy"), dedication (e.g., "I am enthusiastic about my job"), and absorption (e.g., "I feel happy when I am working intensely"). Participants rated each item on 7-point Likert scale from 0 (*never*) to 6 (*every day*).

Cynicism. Five items (ω = .85) from the Maslach Burnout Inventory-General Survey (MBI-GS; Maslach et al., 1996) assessed a cynical and distant attitude toward one's work and the people one works with (e.g., "I doubt the significance of my work"), with participants answering on a 7-point Likert scale from 0 (*never*) to 6 (*every day*).

Emotional exhaustion. Five items (ω = .90) from the Maslach Burnout Inventory-General Survey (MBI-GS; Maslach et al., 1996) assessed the feeling of being overextended and depleted of resources (e.g., "I feel emotionally drained from my work"), with participants answering on a 7-point Likert scale from 0 (*never*) to 6 (*every day*).

Data Analysis

Statistical analysis was performed using IBM SPSS Statistics (Version 29) and its MATRIX language, the Mplus 8 and Winsteps programs 3.72.3 (Beaverton, Oregon). Preliminary analyses were performed on S1 (wave 2017) to evaluate item functioning and scale reliability, as well as to perform an initial test of scale dimensionality using exploratory factor analysis (EFA).

To properly define the scale structure a confirmatory factor analysis (CFA) was specified on S2 (wave 2019), while the study hypothesis regarding the direct and indirect effect of the relationship with students on academics' well-being were tested using a structural equation model (SEM) on the S3 dataset (wave 2021). CFA and SEM were conducted using maximum likelihood robust estimation (MLR; Muthén & Muthén, 2004) because the variables showed a marked violation of normal multivariate distribution (Mardia's kurtosis = 92.81, $p < .000$; Mardia's skewness = 5.50, $p < .000$). Model evaluation and comparison were conducted using standard goodness-of-fit indices: comparative fit index (CFI), standardized root-mean-square residual (SRMR), and root-mean-square error of approximation (RMSEA) with associated confidence interval (CI). Based on the work of Hu and Bentler (1999), CFI values of .95 or higher are considered as indicating good model-data fit, and values of .90 and < .95 are taken as acceptable fit; SRMR values equal to .08 or lower, and RMSEA values equal to .06 and lower would indicate a good fit between the hypothesized model and the data. Modification indices (MIs) were also used to identify the parameters responsible for the lack of fit in the measurement models.

To evaluate the construct's validity, item's scalability, and the appropriateness of the "relationship with students" answering's scale, Rasch analysis was applied and both the PCM (Masters, 1982) and RSM (Andrich, 1978) measurements were estimated using a joint maximum likelihood method. The 1-dimensionality was tested by post hoc principal component analysis of the residuals. The critical value ≤ 2 for the eigenvalue was chosen as a rule of thumb for the identification of a second dimension. In order to evaluate item fit the infit and outfit mean square statistics were considered; their empirical values must be close to the ideal value of 1.0 or within the acceptable range of 0.5-1.5 to claim that the item fitted the model satisfactorily (Wright & Linacre, 1994). The correlation between each single-item score and the Rasch measure (i.e., the Point-Measure correlation) was examined and only values ≥ 0.30 were considered acceptable in contributing to the scale rating. The powerful Wright Map was used to evaluate the functioning of the scales as it allowed to examine the ordering and spacing of items. Category fit statistics (i.e., thresholds) and category probability curves were used as diagnostic tools for response-scale functioning while measurement invariance among gender and academic role was tested by performing the differential item functioning (DIF) analysis, with a difference of at least 0.5 logit indicated items inequality between groups (Holland & Wainer, 2012).

Results

Item Analysis, Reliability, and EFA

The scale reliability on the S1 data was acceptable: Omega coefficient for the overall scale was .77 (items indicating a negative relationship with students were reversed) and achieved values of .72 and .75 for the subscales designed to measure students' support and draining requests, respectively. However, there was one less homogeneous item in each subscale with multiple R^2 values of lower than .25, namely Item 7 and Item 3, respectively (Table 1).

Estimating an EFA model (GLS method) without imposing a predefined number of latent factors for the same sample confirmed the intuitions obtained from the items analysis: the solution was divided into two latent factors composed of items that clearly loaded on only one factor and two nonhomogeneous items (i7 and i3) that loaded on both dimensions (Table 1). As expected, the first factor was defined by Items 5, 2, 4, and 7, measuring student appreciation and support (Stu_Sup), while the second factor consisted of Items

8, 1, 6, and 3, reflecting excessive/inappropriate requests or behaviors (disregard for rules) by students (Stu_DR). The correlation between the latent factors was nonnegligible (−.39) and so we opted for an oblique solution that accounted for the 46.12% of the observed variance (32% from the first factor), with a REPR (i.e., differences among observed correlations and model-reproduced ones over |0.05|) of 17%. Items communalities ranged from .75 (i5) to .43 (i1), except for Items 7 (.36) and 3 (.39).

TABLE 1
Descriptives, item analysis, and EFA results (factor loadings)

Scale item*	*M* (*SD*)	S	K	Item-total correlation	Multiple R^2	Factor loading	
						1	2
Factor1: Stu_Sup							
i5 Apprezzano esplicitamente il mio modo di lavorare [They explicitly appreciate my way of working]	1.74 (0.75)	–.19	–.23	.60	.46	**.92**	.16
i2 Riconoscono l'impegno che metto nel lavoro [They recognise the effort I put into my work]	1.97 (0.72)	–.40	.06	.62	.43	**.72**	–.07
i4 Sono sulla mia stessa lunghezza d'onda [They are on my wavelength]	1.57 (0.64)	–.02	–.22	.61	.39	**.61**	–.18
i7 Facilitano il lavoro perché sono preparati [Make work easier because they are prepared]	1.40 (0.61)	–.02	–.27	.37	.20	**.29**	**–.27**
Factor2: Stu_DR							
i8 Appesantiscono il mio lavoro facendo richieste improprie [They burden my work by making improper demands]	0.54 (0.61)	.82	.67	.59	.37	.06	**.76**
i1 Avanzano richieste eccessive [They make excessive requests]	0.89 (0.68)	.40	.12	.52	.30	.07	**.66**
i6 Complicano il mio lavoro perché non rispettano le regole [They make my work more difficult because they do not follow the rules]	0.50 (0.61)	1.07	1.51	.51	.28	–.02	**.55**
i3 Peggiorano il mio lavoro perché non sono motivati o interessati [They make my work worse because they are not motivated or interested]	0.64 (0.63)	.62	.30	.43	.18	**–.27**	**.47**

Note. * = items numbering in order of administration; Stu_Sup = students' support; Stu_DR = students' draining requests; S = skewness; K = kurtosis. Significant factor loading in bold.

The reliability analysis on the S2 dataset leaded to similar results: acceptable reliability coefficients for both subscales (.80 for students support and .71 for students draining requests), but indications of inconsistency regarding Items 7 and 3 in terms of multiple R^2, again lower than .25 for both.

Confirmatory Factor Analysis

In order to definitively identify the scale structure, we estimated a 2-dimensional CFA model on the S2 dataset, imposing a solution without cross loading items. The model fit was under the cut off — χ^2 = 168.12(19), $p < .00$; CFI = .87; SRMR = .08; RMSEA = .11 within a range of .10 and .13 — denoting a poor specification. The modification indices again revealed that Items 7 and 3 must be loaded on both factors; the greater modification index regarded i3 and permitting its crossload improved the solution — χ^2 = 82.04(18), $p < .000$; CFI increased to .94; SRMR decreased to .04; and RMSEA resulted equal to .08 (confidence interval between .07 and .10). At the same time, excluding Items 3 and 7 from the analysis a 2-dimensional model with a simple structure has been produced (in Thurstone's meaning): the six indicators functioned as markers, that is, each item had only a substantial loading and selectively contributed to the measurement of one of the two facets provided by the scale. In details, Items 5, 2, and 4 measured the perception of appreciation and support received from students, with significant loading ranging from .74 (i4) to .80 (i5), while Items 8, 1, 6 accounted the perception of being drained from students request and behavior, with significant loading ranging from .53 (i6) to .80 (i5). The correlation between the latent factors was –.31. The fit indices of this latest model were remarkable — χ^2 = 36.05(8), $p < .00$; CFI = .97; SRMR = .04 — even if the RMSEA remained close to its cutoff (.08 within a range of .05 and .10).

All the results obtained from S1 and S2 evidenced that the original item set developed to measure the academics perception of the relationship with students in the light of the JD-R model contained two not accurate items. The precision of Items 7 and 3 in measuring the perception of students as a source of support or as a draining request resulted weak and this could depend on their wording: both items are assertion that contains two content, the first regarding the perception of the relation with students, the second one concerning the motives supporting the perception. Moreover, the proposed motives regard students' positive or negative characteristics and this means that agreeing with the item implies an attribution to students.

In the light of this reflection about the malfunctioning items and considering the aim of having two well defined short scales to be used in organizational research on academics well-being at work and its antecedents, we decided to reduce the scale to the six items that denoted a noticeable and clear link with the constructs they are expected to measure, that is, preserve only the indicators that grant a more robust construct validity. The next step was testing if the two subscales could be used for generating summed scores and if their functioning is invariant across relevant groups of academics.

Rasch Analysis

The data of the two dimensions adequately fitted the Rasch model: for each subscale post-hoc PCA of residuals yielded a value ≤ 2 for both PCM and RSM parametrization, so that the unidimensional assumption was satisfied. The RSM was chosen as more parsimonious and desirable because it assumes the equality of the rating scale structure for all items. All the infit and outfit statistics were in the 0.5-1.5 satisfactory range ("students as support" infit range .90-1.07, outfit range .89-1.11; "students as request" infit range .82-1.22, outfit range .73-1.22). The PT-measure correlation values were similar and high for all items for both subscale: i2 = .86, i4 = .82, i5 = .86, for students as support; i6 = .72, i8 = .81, i1 = .82 for students as request.

Figure 1 shows the ability of persons and the difficulty of items plotted on the same logit scale. The top part of the figure depicts the most able people and the most difficult items (i4 for "student as support" and i6 for "student as request"), while the less able people and the less difficult items (i2 for "student as support" and i1 for "student as request") are positioned in the bottom part of the figure. Considering the objective of the subscales, the ability must be understood as the degree of possession of the measured psychological property, that is, the academics' perception of the relationship with students as positive and enriching rather than demanding and tiring.

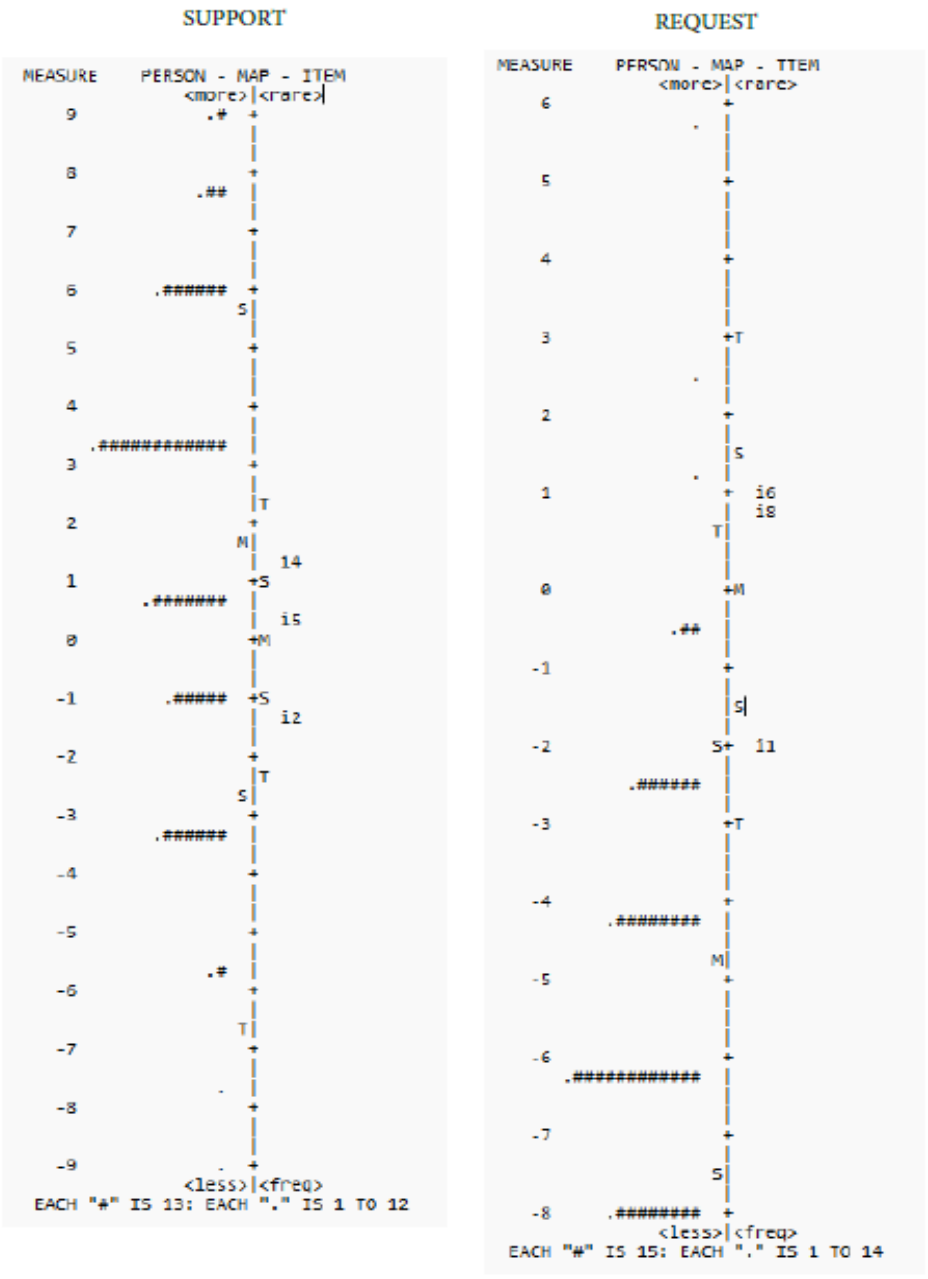

FIGURE 1
Wright maps

The item locations ranged from −1.47 to +1.19 logits for the dimension "students as support" and the item-person map shows the effectiveness of the overall targeting of the subscale with no gaps in the empirical item hierarchy; for the "students as request" subscale the item location ranged from –2.06 to +1.07 but a ceiling effects was observed as highlighted by the presence of respondents who are at the lowest end of the continuum.The category probability curves of items for both support and request subscales were reported in Figure 2: the four response options for all items are optimally ordered and distributed, each one having a point at which it becomes the most likely response. The DIF analysis indicated that there were no problems with the differential functioning of the items for both gender and academic role and, by assessing these requirements, the psychometric quality of the underlying construct is further ensured.

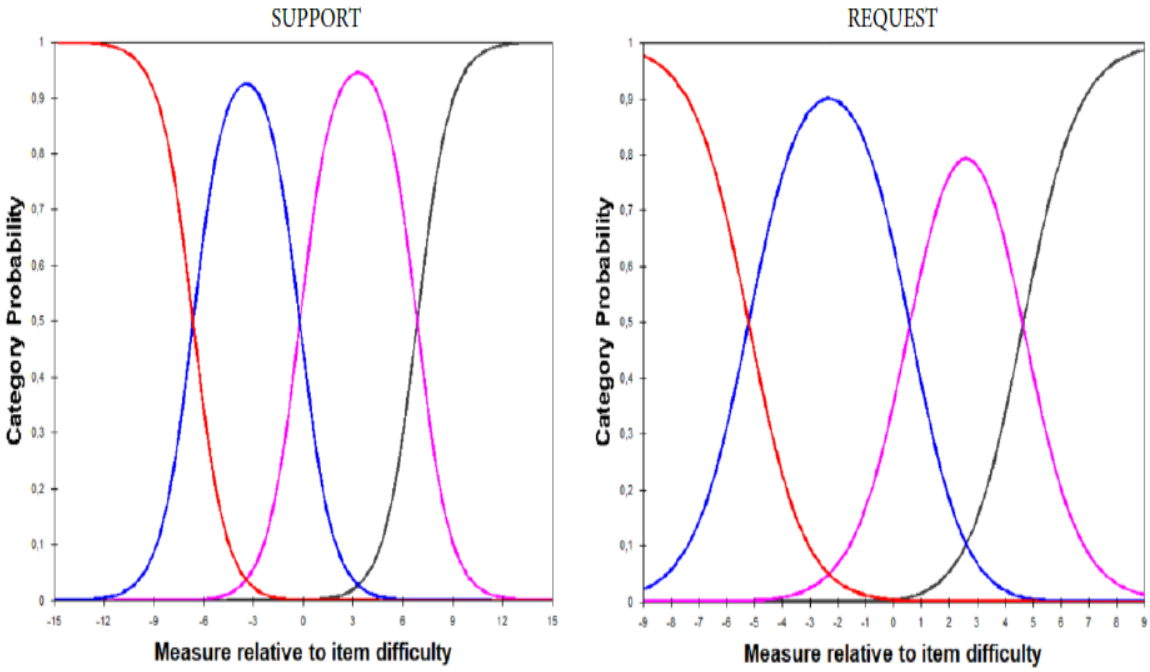

FIGURE 2
Category probability curve

Structural Equation

To test the study hypotheses regarding the relationship with students on the occupational well-being of professors and researchers, the third dataset (S3) was used. A SEM model with emotional exhaustion (EE), cynicism (CYN), and work engagement (WEng) as dependent variables was specified, assuming a double process of dependency of health outcomes from work related resources and requests, mediated by work meaning and workload.

The measurement part of the model was again dedicated to the scale assessing the two dimensions of support (Stud_Sup) and draining requests (Stud_DR) from students with the aims of confirming scale validity on the reduced set of six items. Together with the two latent dimensions, the dependence part of the model included a set of exogenous variables impacting on workload (WLoad) and work meaning (WMean), mostly focused on coherent contents, that is, on explanatory variables inherent to the relational health/risk factors. In detail, as regard the risk factors impacting on workload, the following were considered: the number of thesis

dealt with in the last year (NTheses), the sense and conflictual climate with colleagues (ConfCol), and the out-of-hours work requests (OoHR). The support received from the technical/administrative staff (Staff_Sup) was considered as a resource lowering the perception of workload. In parallel, as regard the protective factors influencing the work meaning, the following were considered: the supportive climate within the working colleagues (SupCol), the perception of having influence (Influence), and the reward from university (Reward).

The model fit was good: $\chi^2 = 331.50(115)$, $p < .00$; CFI = .92; SRMR = .05; RMSEA = .05 within a range of .05 and .06. The quotas of explained variance (R^2) regarding the items measuring the latent factors were all over .40 and ranging between .40 (Item 6) and .62 (Item 2). The correlation between outcomes were statistical significant and meaningful: the two dimensions of burnout positively correlated ($r = .54$, $p < .00$) and resulted negatively associated with the work engagement ($r_{EE,WE} = –.26$, $p < .00$; $r_{CYN,WE} = –.38$, $p < .00$). The results of the SEM are presented in Table 2, which explain the indirect effect of the latent variables measuring the two sides of the relationship with students.

Consistent with the JD-R model, workload negatively influenced burnout outcomes, increasing cynicism and, even more significantly, emotional exhaustion. The work meaning functioned as a positive resource, enhancing work engagement, and reducing the burnout scores; furthermore, it is important to note that the most consistent effect of work meaning was on cynicism rather than emotional exhaustion.

TABLE 2
SEM results: Loading, summary of path effects (standardized solution), and R^2

Item/Variable	λ(SE)	β(SE)				
		EE	CYN	WEng	WLoad	WMean
Measurement						
Factor1: Stu_Sup						
i5	.75(.03)***					
i2	.79(.03)***					
i4	.68(.03)***					
Factor2: Stu_DR						
i1	.64(.04)***					
i6	.59(.04)***					
i8	.78(.03)***					
Paths						
Total effects						
Stu_Sup		–.13(.05)***	–.19(.04)***	.36(.05)***		
Stu_DR		.23(.05)***	.23(.05)***	.02(.05)		
Indirect effects						
Stu_Sup→Wmean		–.03(.01)*	–.10(.02)***	.14(.02)***		
Stu_DR→Wload		.07(.02)***	.02(.01)**	–.01(.00)		
Direct effects						
Stu_Sup		–.11(.05)*	–.08(.04)	.22(.04)***		
Stu_DR		.16(.04)***	.23(.05)***	–.01(.04)		
Mediator effects						
WLoad		.39(.04)***	.13(.04)***	–.03(.03)		
WMean		–.10(.04)*	–.38(.04)***	.50(.03)***		

(table 2 continues)

Table 2 (continued)

Item/Variable	λ(SE)	β(SE)				
		EE	CYN	WEng	WLoad	WMean
Exogenous effects						
NTheses					.09(.03)**	
ConfCol					.13(.03)***	
OoHR					.41(.03)***	
Staff_Sup					–.15(.03)***	
SupCol						.19(.05)***
Influence						.08(.04)
Reward						.13(.05)**
R^2		.32	.39	.40	.31	.16

Note. EE = emotional exhaustion; CYN = cinicism; WEng = work engagement; WLoad = work load; WMean = work meaning; Stu_Sup = students' support; Stu_DR = students' draining request; NTheses = numbers of theses; ConfCol = conflictual climate; OoHR = out-off hours work request; Staff_Sup = relationship with administrative staff; SupCol = supportive climate.
*** $p < .001$; ** $p < .01$; * $p < .05$.

Discussion

The present study pursued two main objectives. First, to determine the psychometric properties of a new scale measuring the dual role of relationship with students in an academic context. The psychometric properties of the original 8-item scale were analyzed using CFA and IRT. A shorter scale with six items was developed, clearly measuring the two hypothesized dimensions of students' support (Stu_Sup) and students' draining requests (Stu_DR) and is characterized by better fit indices and overall well-functioning. The results thus demonstrated the reliability and validity of this brief and easy-to-use instrument, which was found to be invariant between gender and across academic roles, that is, full professors, associate professors, and assistant professors.

The second objective of the study was to apply the validated scale to the study of academic professors' occupational well-being. Specifically, using the Job Demand-Resources model (Demerouti et al., 2001), the dual role of the relationship with students in influencing occupational well-being outcomes was assessed by testing a health impairment process, with the mediating role of workload, and a motivational process, with the mediating role of job meaning.

Structural equation modeling (SEM) was conducted to test both direct (H1 and H2) and indirect (H3 and H4) associations between students' support and students draining requests with burnout symptoms, that is, emotional exhaustion and cynicism, and, on the other hand, with work engagement. Regarding H1, the analyses provided evidence of significant direct associations between students' draining requests and emotional exhaustion (H1a) and cynicism (H1b), but not with work engagement (H1c). On the one hand, these results are consistent with existing evidence on the role of the negative side of the relationship with users in job stress (Dormann & Zapf, 2004); moreover, the lack of a significant relationship with work engagement is in line with previous conceptualizations and findings which identify job resources as the strongest predictors of work engagement, as they enable employees to trigger a process of personal growth and learning (Bailey et al., 2017; Mazzetti et al., 2023). When looking at H2, student support was identified as the most important predictor of engagement at work (H2c), while a significant negative association was only found with emotional exhaustion (H2a), but not with cynicism (H2b).

In addition, an indirect path was demonstrated in relation to H3, linking students' draining requests to both emotional exhaustion (H3a) and cynicism (H3b). This result may indicate that students' draining requests may negatively affect the occupational health of academic professors through the mediating role of workload. Thus, the perception of interacting with poorly motivated and ill-prepared students who place unreasonable and excessive demands may increase the perception of workload in terms of time and volume, which in turn serves as a condition for increased burnout.

Finally, regarding H4, there was an indirect relationship between students' support and emotional exhaustion, cynicism, and work engagement through the mediation of work meaning. These results can also be explained in light of previous studies which have hypothesized the role of self-determination theory (Deci & Ryan, 1985) in explaining sources of meaningfulness of work (Martela & Riekki, 2018). In particular, the role of the basic psychological needs of relatedness, that is, feeling connected to at least some others, having caring relationships, and belonging to a community, may be enhanced by supporting students. As mentioned earlier, the meaning of work is an individual's subjective sense of one's job-related activities aligned with one's personal values. Thus, if we assume that the relationship with students is one of the core aspects of teachers' work identity, then we can understand how this dimension supports the meaning one gives to one's work and how this in turn can promote well-being or prevent stress reactions such as emotional exhaustion and cynicism. It is worth noting that students' support was only indirectly linked to cynicism through work meaning. Indeed, a cynical attitude toward work is a form of disengagement that can serve to alleviate frustration over problem situations when workers are disappointed with their ideal of work (Bang & Rejo, 2017). Considering the present results, we can therefore argue that supporting students by reinforcing core work-related values can prevent disillusionment and cynical attitudes.

Conclusion

This study is not without limitations. First, it is not a true longitudinal study, as it was not possible to determine whether the participants were the same at each point in time in order to match their responses. However, the population was the same. Secondly, the sample studied belonged to only one large public higher education institution dedicated exclusively to teaching and research in STEM subjects, which limits the generalizability of the results. For this reason, further studies should include faculty members from other higher education contexts with social, natural, and medical science disciplines.

Despite these limitations, the present study can provide further insights for research and practice. As is well known, the JD-R model is "an open-ended, heuristic model rather than a specific model that includes well-defined sets of particular demands or resources" (Schaufeli & Taris, 2014, p. 54). Although there is existing research on the well-being and quality of life of academics using the JD-R model as a frame of reference to assess the role of context-specific demands and resources (e.g., Bakker et al, 2010; Boyd et al, 2011; Huang & Wang, 2022; McCarty & Dragouni, 2020; Mudrak et al., 2018), there is a lack of evidence on the role of relationship with students, despite being a very important and pervasive aspect of the work of university professors. Accordingly, the present study extends research on relational variables within this framework that has typically considered social support from colleagues or supervisors, demonstrating that the relationship with students in the academic context can be assumed as both a job demand and a job resource, which are significant determinants of academics' occupational well-being. Furthermore, the results of the present study may have practical implications. Indeed, the 6-item scale has proven to be a valid and reliable instrument that, due to its brevity, can be easily included in surveys assessing work-related stress and quality of life and provides useful data for the implementation of ad hoc interventions. Among other things, it is possible to take measures aimed

directly at faculty professors to improve stress management, assertiveness, and interpersonal skills so that they can better deal with stressful requests from students and the resulting work overload. On the other hand, since the relationship with student can be a resource to sustain work meaning and engagement, universities should support academics' training in participatory teaching, the ability to focus on student learning and on factors that facilitate this learning, or the ability to select and apply innovative teaching strategies, including the use of ICT. These strategies can improve the quality of teaching, student satisfaction and engagement with the subject and, consequently, the quality of interaction with professors (Rubio et al., 2018). Therefore, evaluating the dual role of the relationship with students in the academic context can be a useful strategy to monitor the professional well-being of professors as well as the quality of the social role of the academic environment, which, like other school contexts, is central to the growth, education, and training of new generations.

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