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The Motivation of Academics in Remote Teaching during the Covid-19 Pandemic in Polish Universities—Opening the Debate on a New Equilibrium in e-Learning

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Abstract: Online learning helps to continue education in the face of Covid-19 lockdowns and social isolation, but it might largely change characteristics of academic teachers' jobs and, thus, have some unintended consequences for teachers' motivating job potential. In this study, using a convenience sample of 202 academic teachers, we tested and supported the hypothesis that academic teachers perceived their motivating job potential as lower during the forced Covid-19 e-learning than before it. We also provided evidence that motivating potential of work during the forced Covid-19 e-learning is associated with work engagement and job satisfaction. Moreover, we provided a modicum of evidence that the relationship between the motivating job potential and academic teachers' job satisfaction might be moderated by teachers' assessment of university management actions during the Covid-19 situation, such that this association seems to be stronger among teachers who more positively assess university management. Our results provided initial evidence of possible unintended consequences of the pandemic-forced e-learning for academic teachers. Therefore, we suggested that socially sustainable e-learning required not only concentration on students and organizations of the education process but also on improving the teachers' motivating job potential.

Keywords: motivating job potential; Covid-19; e-learning; online; teaching; teachers

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1. Introduction

The Covid-19 pandemic is leading to transformations on a global scale that span a wide spectrum of social, economic, and cultural change [1]. In higher education, the key change is the very fast virtualization of the didactic process, which is manifested by the implementation of e-learning on a large, unprecedented scale [2]. The forced transition to e-learning creates completely new conditions for education at universities and leads to rearrangement in academic teacher jobs. There has been a rapid, broad need for "learning of e-learning" by faculty, students, and university administration [3]. This is particularly challenging because e-learning in higher education was often marginal in relation to contact learning before the pandemic [4]. However, higher education has a critical role to play in leading the society towards a more sustainable way of life [5]. Education for Sustainable Development, or Education for Sustainability, is a process that develops people's awareness, competence, attitudes, and values, enabling them to be effectively become involved in sustainable development at the local, national, and international levels, and helping them to work towards a more equitable and sustainable future [6]. Thus, educators serve as the primary "change agents" in society, and they must be motivated to lead systemic shifts that ripple out into the world [7]. In this context, the experience of two semesters of distance learning creates a completely new situation for many academic teachers. The first studies are appearing showing significant limitations of e-learning in various types of education, especially if it is 100% remote learning [8] and that online learning might pose a

serious challenge not only for students but also for academic teachers' motivation. Ferri, Grifoni, and Guzzo [9] focus our attention on three main pandemic e-learning challenges: (a) technological (e.g., lack of devices or Internet access), (b) pedagogical (e.g., lack of computer skills), and (c) social (e.g., lack of interactions with students). Additionally, Yusuf [10] noticed that some challenges for teachers might come from students' attitudes and behaviours, as during online learning students might be less focused, might have no access to all the necessary learning tools and materials or simply might not attend the online courses. Vlachopoulos [11] pointed out that also teachers' evaluation and monitoring during pandemic e-learning might be a source of challenges and difficulties. In turn, Thomas and Rogers [12] warn that forced e-learning might aggravate pre-existing differences in learning progress caused by socio-economic inequalities. During online education, the financial resources available might determine if students will have access to the Internet, reliable computer devices, or even if he/she has a separate room for online learning. Furthermore, Omodan [13] suggests that although technology and the Internet intuitively seem to be globally available, there are still areas where access to technology is limited, hindering the possibilities of online learning in, e.g., rural areas. This exaggeration in inequalities might create another challenge for the motivation of teachers who want to provide the same education opportunities for all their students. What also might have a negative effect on teachers' motivation is the rapid speed of introduction and a wide scope of forced Covid-19 e-learning as an emergency teaching technique [14], which often might be implemented in a chaotic manner, generating stress for all the involved parties. The negative effects of online education might be even more exaggerated in a situation of social isolation and loneliness created by Covid-19 restrictions (see [15]). Thus, tensions arise around the degree of acceptance of e-learning in higher education [16] and the impact of forced e-learning on the academic teachers' job motivation [17].

Still, despite a huge body of literature devoted to students' motivation, engagement, and satisfaction from e-learning, there is scant literature on the experiences and job motivation of the faculty staff [18,19], and in the new reality of pandemic and "emergency remote teaching" [14], this topic remains unexplored [20]. Thus, this study aims to contribute to the existing literature by expanding the knowledge of teachers' work engagement, job satisfaction, and exhaustion during online teaching in an unstable pandemic-forced e-learning work context.

2. Theoretical Background and Hypothesis

In this new, emerging context of forced e-learning, the Job Characteristics Theory (JCT)—one of the most widely used model of work motivation [21–25] might help us to understand possible changes in academic teachers' motivation in response to Covid-19 online learning. The JCT (for a detailed review, see [26]) proposes that crucial factors in work motivation are motivating job characteristics represented by task identity, task significance, skill variety, feedback from the job, autonomy [22], and social dimensions of the work [25] that together build a motivating job potential. When looking at forced e-learning, it might be proposed that all these motivation characteristics, vital for work motivation, are prone to changes as a result of pandemic e-learning (see [17,21]).

For example, the job autonomy of some academic teachers might be reduced, as teachers are forced to use e-learning regardless of their opinion of e-learning suitability. The experience of task identity might be diminished as a result of interruptions and changes in standard course programs. Task significance represented by the significant impact of teachers' job on students' knowledge, skills, and abilities, might by some be perceived as lower during e-learning in comparison to the more "traditional" ways of teaching. Not to mention the changes in the social dimension of the work, as pandemic-forced e-learning made it much harder to engage in friendly interpersonal interactions with students and more difficult to obtain immediate personal feedback. Therefore, pandemic-forced e-learning might diminish the motivating job potential of academic teachers' jobs and, accordingly, to JCT this might diminish teachers' motivation and positive job attitudes.

Based on previous propositions of presumed effects of pandemic-forced e-learning on academic teachers (see, e.g., [9,10,12–14,17] and JCT assumptions (see [26]), we put forward Hypothesis 1.

Hypothesis 1. *During pandemic-forced e-learning, academic teachers perceived their motivating job potential as lower than the motivating potential of their jobs before the introduction of pandemic-forced e-learning.*

Consequently, in line with JCT predictions of the influence of motivating job potential on employee's motivation and attitudes, we also put forward Hypothesis 2.

Hypothesis 2. *The motivating job potential as perceived during pandemic-forced e-learning, is positively related to work engagement (H2a), job satisfaction (H2b) and negatively related to exhaustion (H2c). The higher the degree of motivating job potential academic teachers perceived during forced e-learning, the higher work engagement and job satisfaction and the lower job exhaustion they reported.*

Beside the main associations of motivating job potential with teachers' engagement and satisfaction, the JCT also predicts probable, specific moderating effects. Mainly, the strength of the relationship between motivating job potential and outcomes such as engagement, satisfaction, or exhaustion might be expected to be moderated by contextual factors and individual differences [24,26,27]. In line with this reasoning, drawing inspiration from the JCT, we concentrated on two moderating effects possibly important in the context of e-learning. First, the proposed moderating effect is related to individual differences among academic teachers in attitudes towards e-learning. To this end, we suggest that the academic attitudes towards e-learning might moderate the relationships between motivating job potential and academic teachers' engagement, satisfaction, and exhaustion. When an academic teacher is dissatisfied that he/she is forced to use e-teaching, even a high motivating job potential might have a low impact on overall motivation, as negative attitudes towards e-learning might distract the attention of teachers from the work itself and concentrate their energy towards coping with e-learning dissatisfaction (see [27]). In contrast, teachers who have a positive attitude towards e-learning, might be less frustrated from the job even when they face difficulties in introducing e-learning as they might believe that this is a valid way of teaching, and might be more likely to see some difficulties as challenges rather than hindrances (see [28]). Thus, we propose that among academic teachers who have a positive attitude towards e-learning, the relationship between motivating job potential during forced e-learning and engagement, satisfaction, and exhaustion are stronger than among the academic teachers who do not accept e-learning. Therefore, we put forward Hypothesis 3.

Hypothesis 3. *Academic teachers' attitude towards e-learning moderated the relationship between perceived motivating job potential during Covid-19-forced e-learning and work engagement (H3a), exhaustion (H3b), and job satisfaction (H3b).*

We would also like to test the second moderating effect concerning academic teachers' satisfaction from university management activity during forced e-learning. The behaviour and communication of university leaders might be an important factor in shaping the resilience to the pandemic crisis, but university managers do not always respond properly to the Covid-19 situation (see, e.g., [29–31]), which might spark academic teachers' dissatisfaction and concerns. JCT predicts that satisfaction from contextual factors might moderate the relationship between motivating job potential and positive outcomes, thus, we predict that among the academic teachers who positively assess the way university leaders deal with the Covid-19 e-learning situation, the relationships between motivating job potential and work engagement, exhaustion and job satisfaction, are stronger than among those

who negatively asses the management of forced e-learning. Therefore, we put forward Hypothesis 4.

Hypothesis 4. *Academic teachers' assessment of university management effectiveness in times of forced e-learning moderates the relationship between motivating job potential and work engagement (H4a), exhaustion (H4b), and job satisfaction (H4c). Our theoretical model for moderating.*

Hypotheses 3 and 4 is depicted in Figure 1.

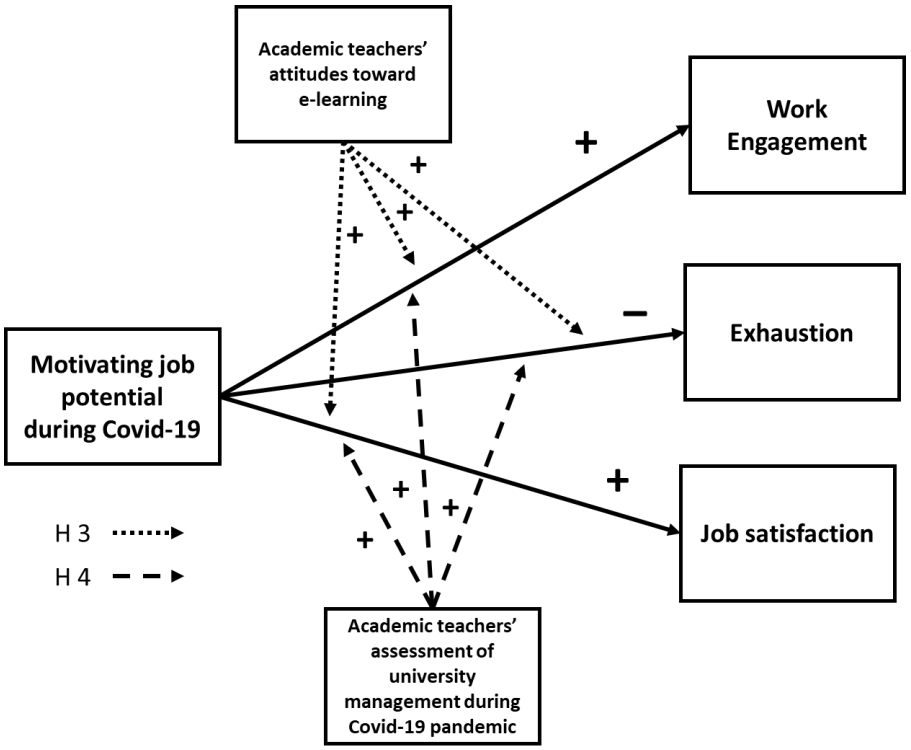

Figure 1. Theoretical model summarizing moderating Hypothesis 3 (H3) and Hypothesis 4 (H4). Hypothesis 3 assumes that the more positive attitudes towards e-learning an academic teacher has, the more positive the association of motivating job potential with work engagement and job satisfaction, and the more negative association with exhaustion. Hypothesis 4 assumes that the more positive assessment of university management activity during Covid-19 a teacher has, the more positive the association of motivating job potential with work engagement and job satisfaction and the more negative the association with exhaustion.

In our view, socially sustainable e-learning must not only provide access to high-quality education for students and solve organizational problems for university managers, but also should take into account academic teachers' points of view and strive to maintain their high job motivation. Therefore, sustainable e-learning should point towards the equilibrium between students', academic teachers', and university authorities' expectations and needs. It might be predicted that in post-pandemic higher education, e-learning might occupy more and more "space", and it will become an integral component of education [32], hence, it seems important to understand how academic teachers' motivating potential of work during forced e-learning is related to academic teachers' work engagement, exhaustion, and job satisfaction. Analysis of the four hypotheses put forward in this study in the framework of the JCT might provide valuable insights in teacher motivation during distance learning and might help contribute to the theory and practice of e-learning, providing a better understanding of the associations between forced e-learning and academic teachers' motivation.

Therefore, the aim of the article is four-fold. First, we would like to test the hypothesis that academic teachers perceived the motivating job potential during forced Covid-19 e-learning as lower than before Covid-19 e-learning (H1). Second, based on the JCT, we aim to test the prediction that the motivating job potential during Covid-19 e-learning perceived by academic teachers is related to exhaustion, job satisfaction, and work engagement (H2). Third and fourth, we would like to test the proposition that attitude towards e-learning (H3) and positive assessment of university management in a Covid-19 situation (H4), boost the strength of the association between the perceived Covid-19 motivating potential of work and exhaustion, job satisfaction, and work engagement.

3. Materials and Methods

3.1. Participants

In this study, we analysed data from a sample of 202 academic teachers (121 women). The survey carried out covers the academics representing mainly three universities: university A (25% respondents), university B (20% respondents), and university C (48% respondents). The mean age of the respondents was 47.5 (SD 9.8); the majority work in social sciences—87 (43%), and humanities—109 (54%); 192 (95%) work at public universities. The majority of respondents—150 (74%)—work on the position of research and didactic employees, where both conducting research and teaching students are required, and 43 (21%) participants work on the position of didactic employees that require only to teach students. The average number of teaching periods in the winter semester of 2020/2021 (from October to February) was 174.6 (SD 99.8) (where one teaching period is usually a period of 45 min); the majority of respondents—165 (82%)—declared that 100% of their usual classes were conducted online. On a self-anchoring work engagement scale ranging from 0 to 10, most participants assessed their work engagement as rather high, with 9% assessing their work engagement as 7; 21% as 8; 38% as 9, and 30% as 10. We also asked a question about academic teachers' prediction concerning the future of e-learning as a form: "In the future, after the end of forced distance learning caused by the Covid-19 pandemic, what proportion of teaching in higher education, in your opinion, could still be provided in the form of distance learning (e-learning)?" The responses were 0%—15; 25%—95; 50%—60; 75%—17; 100%—15.

3.2. Measures

3.2.1. Attitudes toward e-Learning

Initially, we intended to measure three dimensions of attitudes to e-learning: enthusiasm towards e-learning, blended learning support, and rejection of e-learning. Therefore, we asked nine questions, three for each dimension (see Appendix A). The participants responded on a scale from 1—I strongly disagree, to 5—I definitely agree. However, the analysis of obtained results does not support the existence of three dimensions in attitudes towards e-learning in our data. The three items for the blended learning support dimension has low reliability of 0.46 (Cronbach's alpha) that, after deletion of one particular problematic item, has increased to 0.75. The three items for e-learning enthusiasm have a reliability of 0.83 and the three items for e-learning rejection dimension have 0.64, which only decreased upon deletion of any item. When we applied a cut-off of 0.70 Cronbach's alpha as satisfactory reliability, then we might see that coefficient for rejection of e-learning dimensions was too low to consider it reliable; we decided to omit these three items in the analysis. Then, the enthusiastic (three items) and blended learning (two items) dimensions were highly correlated with r = 0.65, and the maximum likelihood factor analysis with varimax rotation revealed that only one factor that emerges has the eigenvalues higher than 1 (3.18), and the second factor has the much smaller eigenvalues of 0.712. Based on this analysis, in this study, we decided to analyse the general attitudes towards e-learning instead of analysing separated dimensions. The final scale of five items has a quite high reliability of 0.86 of Cronbach's alpha (see Appendix A).

3.2.2. Assessment of University Management Activity during Covid-19

To assess how academic teachers assess university management during Covid-19, we measured academic teachers' satisfaction from management actions during the Covid-19 pandemic with four questions (see Appendix A), on a scale from 1—I strongly disagree, to 5—I definitely agree. This scale represents the cognitive evaluation of management activity from the perspective of academic teachers. The reliability for this scale was high with Cronbach's alpha of 0.91, and the maximum likelihood factor analysis with varimax rotation revealed that only one factor that emerges has the eigenvalues higher than 1 (3.18), and the second factor has the eigenvalue of 0.326.

3.2.3. Motivating Job Potential

Although different job characteristics (task identity, task significance, skill variety, feedback from the job, autonomy, social dimensions of the work) might be affected to a different degree as a result of the Covid-19 e-learning (see [17]), in this study, we decided to capture the overall motivating potential of work instead of analysing every core job characteristic separately. There are two main reasons for this; first, the overall score might be more reliable and might more validly represent the general motivating experience of academic teachers during the Covid-19-forced e-learning. Second, as during the Covid-19-forced e-learning academic teachers are overloaded with various responsibilities, we predicted that a large survey with several questions for each job core characteristic might significantly reduce the number of teachers that would like to take part in the study and share their experiences, thus, lowering the quality of the obtained responses. Therefore, to measure the motivating potential of work of academic teachers, we asked six questions concerning six core job characteristics: task identity, task significance, skill variety, feedback from the job, autonomy, and social dimensions of work [22,25] (see Appendix A). The participants responded on a scale from 1—low, to 7—high. To calculate motivating potential of work, we used a simple additive index approach, i.e., calculating the mean value for all six items as a motivating potential of work without different weights for different items. The additive index approach has been found to be as effective as other ways of calculating the motivating potential of work score, where different weights are applied (see [23,33]), or even better [34], and Boonzaier, Ficker, and Rust [35] based on a literature review recommended that a simple additive index might be preferred for computing motivating potential of work.

To capture academic teachers' experiences during the Covid-19 e-teaching in comparison to traditional teaching before Covid-19, two response options were provided for each of six items. At first, the respondents were asked to assess their motivating job potential before Covid-19 e-learning and in the second option, to assess their motivating job potential during Covid-19 e-learning (see Appendix A for details). We calculated the total scores from all the six items representing the overall motivating potential of work before and during the Covid-19-forced e-learning. For the motivating job potential as perceived before the introduction of the Covid-19 e-learning, Cronbach's alpha was 0.74, and the maximum likelihood factor analysis with varimax rotation revealed that only one factor that emerges has the eigenvalue higher than 1 (2.67), and the second factor has the eigenvalue of 0.940. For the motivating job potential perceived during the introduction of Covid-19 e-learning, Cronbach's alpha reliability was 0.86 and the maximum likelihood factor analysis with varimax rotation revealed that only one factor that emerges has the eigenvalue higher than 1 (3.55) and the second factor has the eigenvalue of 0.726.

3.2.4. Work Engagement

To measure engagement, we used a three items from the Utrecht Work Engagement Scale as used in the European Work Condition Survey (see [36–38]), sample item: At my work, I feel full of energy, with responses on a scale from 1—never, to 5—always; Cronbach's alpha was 0.72.

3.2.5. Exhaustion

To measure exhaustion, we used four exhaustion items from the Polish version of the Oldenburg Burnout Inventory—OLBI (see [39,40]). Sample item being: After my work, I usually feel worn out and weary, with a response scale from 1—never, to 5—always; Cronbach's alpha was 0.77.

3.2.6. Job Satisfaction

To measure general job satisfaction, we used a single-item question (see [41,42]) in the following form: Please choose a number that indicates your overall satisfaction with work, on a scale from 0—the worst job imaginable, to 10—the best job imaginable.

3.3. Procedure

In this study, we used an online survey built in Google forms. That survey was distributed based on convenience sampling among academic teachers available for the authors of this paper for the purpose of collecting as many responses as possible. As we used convenience sampling, we provided a detailed description of our sample demographics in the "participants" section to paint a detailed picture of the groups for which our findings might be possibly generalizable. Our survey started on 1 December 2020 and lasted about two weeks when we reached a point of saturation, after which further new responses were not obtained.

4. Results

The means, standard deviations, and Pearson correlations for all the variables used in this study are presented in Table 1.

Table 1. Means, standard deviations, and Pearson correlations for variables used in this study.

	M	SD	1.	2.	3.	4.	5.	6.
1. Motivating job potential during Covid-19 e-learning	4.58	1.16						
2. Motivating job potential before Covid-19 e-learning	5.99	0.72	0.09					
3. Satisfaction from management	3.83	1.03	0.38 **	0.18 *				
4. Attitudes toward e-learning	2.77	0.97	0.59 **	−0.24 **	0.21 **			
5. Work engagement	4.03	0.52	0.22 **	0.31 **	0.20 **	0.07		
6. Exhaustion	2.75	0.66	−0.15 *	−0.12	−0.11	−0.08	−0.39 **	
7. Job satisfaction	7.80	1.53	0.28 **	0.16 *	0.32 **	0.12	0.57 **	−0.37 **

Note. ** $p < 0.01$; * $p < 0.05$. All variables are described in details in materials and methods, see also Appendix A.

In relation to Hypothesis 1, as can be seen in Table 1, on average, the teachers' assessment of motivating job potential during the Covid-19 pandemic-forced e-learning (M = 4.58) was lower than assessment of the same job characteristic before the Covid-19-forced e-learning (M = 5.99) with mean differences of −1.41 (SD 1.31), 95% CI (−1.59 to −1.22), and t = −15.26; df = 201; $p < 0.001$ for paired samples *t*-test. When we calculated the numbers of teachers for whom the difference in motivating job potential "*during Covid-19*" minus "*before Covid-19*" was negative, we observed that the majority of respondents, i.e., 170 (84.2%) have a lower level of motivating job potential during Covid-19 e-learning than before it, ranging from −4.83 to −0.17. However, for 13 (6.4%) respondents, the difference "*during Covid-19*" minus "*before Covid-19*" was 0, and for 19 (9.4%) respondents—the difference was positive, ranging from 0.17 to 1.5, suggesting that this small group of teachers assessed their level of motivating job potential as higher during Covid-19-forced e-learning than before it. All in all, in general, it might be stated that, on average, the academic teachers in our sample perceived their motivating job potential as lower during the Covid-19 e-learning than before it, which supports Hypothesis 1. With regard to Hypothesis 2, the Pearson

correlations presented in Table 1 provide some initial evidence that the motivating job potential during Covid-19-forced e-learning, as perceived by academic teachers, is weakly related to work engagement (H2a) r = 0.217 p = 0.002, job satisfaction (H2b) r = 0.282 $p < 0.001$ and negatively related to exhaustion (H2c) r = −0.148, p = 0.036. To further test Hypothesis 2, we conducted a regression analysis with a set of control variables, as simple Pearson correlation might be a subject of some confounding influences of other variables. As control variables, we included respondents' age, sex, number of classes in a semester, attitude towards e-learning, and assessment of university management during the Covid-19 situation. We conducted three regression analyses in which the motivating job potential during Covid-19-forced e-learning, along with control variables, was set to predict work engagement, job satisfaction, or exhaustion. With control variable included in a regression model, the motivating job potential during Covid-19-forced e-learning was still related to work engagement, the unstandardized regression weight b = 0.10, 95% CI (0.02 to 0.18) standardized regression weight β = 0.23, p = 0.012 and also to job satisfaction b = 0.29, 95% CI (0.06 to 0.52) β = 0.220 p = 0.013. However, the pattern of relationships was not consistent in the case of exhaustion with b = −0.09, 95% CI (−0.20 to 0.01) β = −0.164 p = 0.078. Therefore, based on our data, the association between motivating job potential and exhaustion is unclear, but our analysis has shown that even when control for a set of control variables, then motivating job potential during Covid-19 e-learning is associated with work engagement and job satisfaction. These results support our Hypotheses 2a and 2b, but we do not have enough evidence to provide support for Hypothesis 2c.

To test Hypotheses 3 and 4 that predict interaction effects, we used moderated multiple regression with interaction terms. An interaction term is a product of multiplication of *motivating job potential during Covid-forced e-learning x attitudes towards e-learning* for H3 and *motivating job potential during Covid-forced e-learning x assessment of university management* for H4. These interaction terms were then added to the regression models predicting work engagement, job satisfaction, or exhaustion by motivating job potential during Covid-19-forced e-learning and attitudes towards e-learning for H3 or by motivating potential of work during the Covid-19-forced e-learning and assessment of university management for H4. Therefore, in total, we tested six moderated multiple regression models with included interaction terms (for H: 3a/3b/3c and for H: 4a/4b/4c). Moreover, as our predictors were correlated (see Table 1), to avoid misleading interactions, we also included, in each tested regression model, quadratic terms for each predictor, according to Ganzach's [43] suggestions.

As for Hypothesis 3, we tested three moderated multiple regression models with motivating potential of work during Covid-19-forced e-learning, attitudes towards e-learning, quadratic terms for each of these predictors, and interaction term motivating job potential during the Covid-forced e-learning x attitudes towards e-learning. First, we tested the regression model predicting work engagement in which the interaction term is b = −0.018, 95% CI (−0.124 to 0.089) p = 0.743; second, we tested a model predicting exhaustion, where the interaction term is b = 0.066, 95% CI (−0.074 to 0.207), p = 0.351 and finally, we tested a model predicting job satisfaction, obtaining the following statistics for interaction term b = −0.302, 95% CI (−0.612 to 0.009) p = 0.057. To sum up, as the p-values for all the interaction terms were higher than the threshold of 0.05 and all the confidence intervals for regression weights (b) included 0; this result does not support our Hypothesis 3 that academic teachers' attitude towards e-learning moderates the relationship between the perceived motivating potential of work during the Covid-19-forced e-learning and work engagement (H3a), exhaustion (H3b), and job satisfaction (H3b).

In relation to Hypothesis 4, we conducted another three moderated multiple regressions with motivating job potential during the Covid-19-forced e-learning, assessment of university management, quadratic terms for each of these predictors and with interaction term: motivating job potential during Covid-19-forced e-learning x assessment of university management. The first regression model predicted work engagement, and we obtained the interaction term of b = 0.017, 95% CI (−0.047 to 0.081), p = 0.601, the second regression model predicted exhaustion and had the interaction term of b = 0.065, 95% CI

(−0.021 to 0.150), $p = 0.137$, the third model predicted job satisfaction, and in this model, the interaction term was b = 0.275, 95% CI (0.092 to 0.458), $p = 0.003$. This result does not support our hypothesis that academic teachers' assessment of university management in times of forced e-learning moderates the relationship between motivating job characteristics and work engagement (H4a) or exhaustion (H4b), but provides some support for H4c that academic teachers' assessment of university management moderates the relationship between motivating job characteristics and job satisfaction.

A positive interaction term *motivating job potential during Covid-forced e-learning x assessment of university management* for the regression model predicting job satisfaction with a *p*-value lower than 0.05 and the confidence interval that does not include 0, suggests that, for academic teachers, the relationship between motivating job potential and job satisfaction might be stronger when the assessment of university management is more positive than when it is more negative. To probe this interaction effect, based on the median values, we split participants into low-level and high-level groups concerning motivating job potential during the Covid-19-forced e-learning (Me = 4.58) and assessment of university management (Me = 4.00). This allowed us to create four groups: (1) high motivating job potential and high assessment of university management; (2) high motivating job potential and low assessment of university management; (3) low motivating job potential and low assessment of university management; and (4) low motivating job potential and high assessment of university management. Next, to gain more insight into the nature of possible interaction of *motivating job potential during Covid-forced e-learning x assessment of university management* on job satisfaction, we calculated for each of those four groups the mean level of job satisfaction and we presented the obtained results in Figure 2.

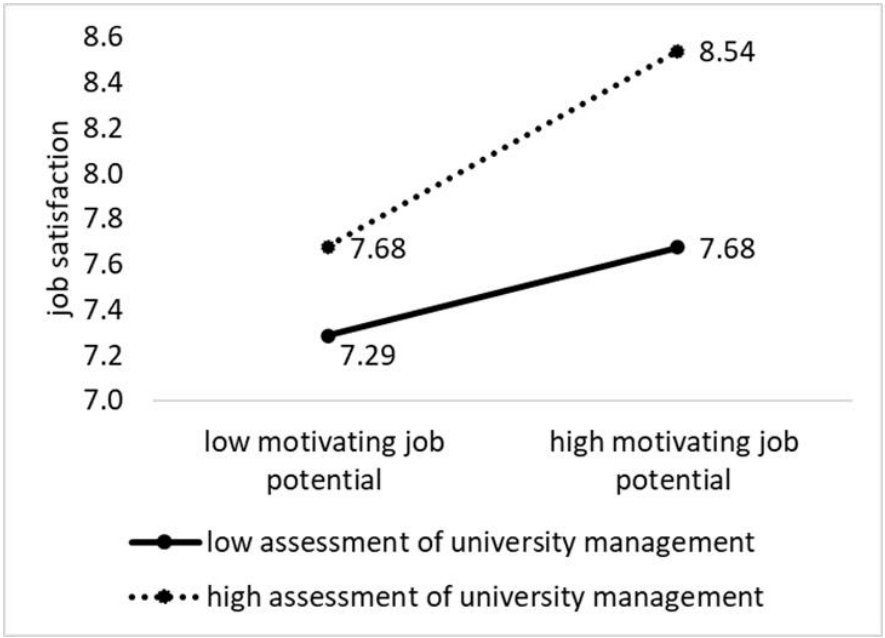

Figure 2. Mean levels of job satisfaction among academic teachers groups high/low motivating job potential and high/low assessment of university management during Covid-19 e-learning.

Figure 2 depicts the nature of the detected interaction, showing that the association between the perceived motivating potential of work during the Covid-19 e-learning and job satisfaction is slightly stronger when academic teachers positively assess university management action during the Covid-19 than when academic teachers have a more negative opinion of university management. To further probe the interaction effect, we also plotted, in the Figure 3, the job satisfaction level predicted from the moderated regression model against motivating potential of work during the Covid-19 pandemic in groups of teachers with high and low assessment of university management activity during the

Covid-19 pandemic. An inspection of Figure 3 also suggests that the relationship between motivating potential of work and job satisfaction is stronger when teachers positively assess university management.

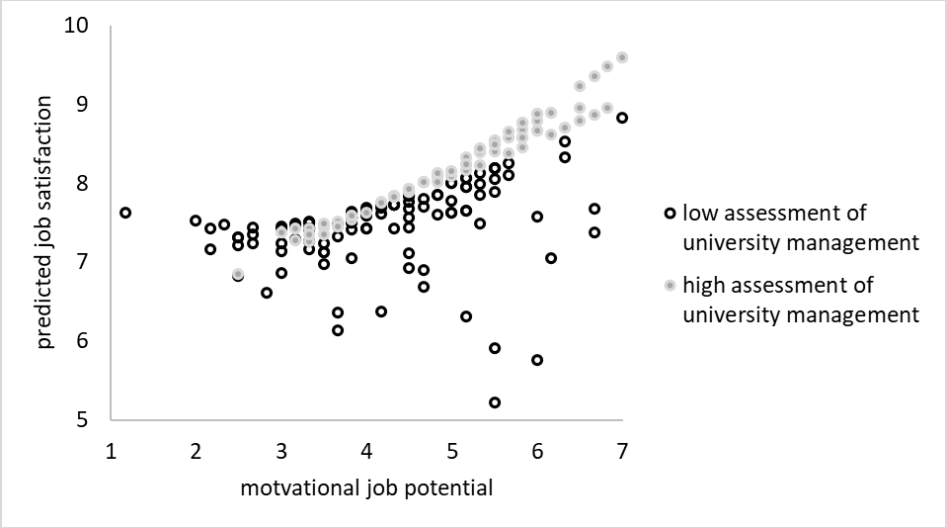

Figure 3. The association between motivating job potential during Covid-19 and job satisfaction predicted from the moderated regression model among academic teachers group of high/low assessment of university management during a Covid-19 situation.

5. Discussion

Our analysis supports our proposition that academic teachers during the Covid-19-forced e-learning perceived their motivating job potential as lower than before the Covid-19 e-learning (H1). We also support hypotheses suggesting that motivating job potential during the Covid-19-forced e-learning is related to job satisfaction and work engagement (H2a and H2d). These findings together indicate that the way academic teachers perceived the motivating characteristics of their work during the pandemic e-learning might be an important predictor of engagement and satisfaction. Moreover, according to UNESCO, the main effects generated by the closure of universities during the first lockdown were, among others, confusion and stress for teachers. Teachers were often insecure about their obligations of identifying the optimal way to maintain connections with students to support learning, and the transition to online learning platforms tends to be quite difficult and complex, presenting both human and technical challenges [44]. According to Meriera et al., teachers who do not perceive themselves as digitally efficient and well supported from an institutional point of view, experience more intense negative emotions when teaching online and are less motivated and autonomously involved in their work [40,45]. This, along with our findings, suggests that to obtain socially sustainable e-learning that provides an equilibrium between the needs and expectations of students, teacher, and university management, higher educational institutions should invest efforts in keeping academic teachers' motivating potential of work during e-learning at a high level. The fact that teaching students via the Internet is generally perceived by academic teachers as having lower motivating potential than more traditional face-to-face teaching, poses a serious challenge for pandemic e-learning and also for the future of e-learning in higher education. First, during pandemic-forced e-learning, the lowered motivating job potential might influence not only the teachers' subjective well-being, but possibly also how they interact with students, leading to less effective teaching [46]. Second, in the context of future e-learning implementation, if, during forced e-learning, teachers experience loss of the motivation potential of their jobs, they might be discouraged by online teaching and consequently reluctant to any further attempts of implementation of e-learning in post-pandemic times.

Our results do not support Hypothesis 2c that motivating job potential is related to the level of exhaustion. This might suggest that other factors than motivating job potential might be important to fully capture academic teachers' experience with pandemic e-learning. Our study lacks the data to answer the question of which aspects of forced e-learning might be particularly strongly related to exhaustion, but some post hoc reasoning might be drawn from supplementing our theoretical model of the JCT with the Job Demands-Resources theory (JD-R) [47]. The JD-R model suggests that in a workplace, the two separated and quite independent processes might affect employee well-being, one called motivation process, which leads from job resources (e.g., motivating job potential) to positive outcomes, such as engagement and satisfaction. The second independent process in the JD-R is called health impairment process and it is presumed to be sparked by job demands, i.e., the aspect of the workplace that hinders work goal attainment and exhausts employee energy (see [47]). Therefore, as in our study motivating job potential might be seen as representing job resources, this might explain why motivating job potential is not consistently related to exhaustion but it is related to engagement and job satisfaction—in this study, we probably captured motivating processes as proposed by the JD-R model, but not the health impairment process. Exhaustion as a result of the health impairment process [47] might be more strongly related to hindering job demands in e-learning that were not measured in our study, such as technological problems or interference of pandemic-forced e-learning with family life. This reasoning might be supported by some open-ended comments provided by our respondents who suggest that hindrance in the times of e-learning might come not only from the job itself, but from lack of the necessary support from the university in providing the equipment needed for online teaching; e.g., some teachers might be forced to use their private hardware for e-teaching, which is not always suitable for extended use, or teachers must rely on their home Internet connection not reliable enough to transmit a huge amount of data. Moreover, negative work-home interference created by e-learning might be seen as leading to exhaustion, particularly when an academic teacher has school children who stay with them at the same place during their online classes, or need to share a computer. Our results provide preliminary suggestions that exhaustion and engagement in the context of pandemic e-learning are not simply complementary opposites, but rather that they might be seen as separated constructs influenced by independent processes. This suggestion might contribute to both the theory and practice of motivating teachers in distance learning. From a theoretical standpoint, our findings might inspire further studies to investigate what possibly distinct mechanisms are hidden behind exhaustion from online teaching in comparison to satisfaction and work engagement among teachers involved in distance learning. From the higher education management point of view, our findings provide a modicum of evidence that when organizing pandemic e-learning, the approaches that are needed to improve teachers' engagement and satisfaction are different from those that prevent exhaustion.

When it comes to the moderation hypothesis put forward in this study, we predict that the attitudes of academic teachers towards e-learning (H3) and academic teachers' assessment of university management (H4) might moderate the relationships between the motivating potential of work during the Covid-19-forced e-learning and work engagement, job satisfaction, and exhaustion. In general, with one exception, our results do not confirm these predictions. In our data, the attitudes of academic teachers towards e-learning (H3) and academic teachers' assessment of university management (H4) do not reliably influence the strength of the association of the motivating job potential with engagement, job satisfaction, and exhaustion. One notable exception was the interaction between the motivating job potential and assessment of university management in predicting academic teachers' job satisfaction (see Figures 2 and 3). This might suggest that positive assessment of the activities undertaken by university management regarding e-learning might, to some degree, boost the relationship between motivating potential of work and job satisfaction; however, as can be seen in Figures 2 and 3, this interaction effect is relatively weak. It is

also difficult to explain why this particular interaction was "statistically significant", while the others were not, so this finding needs further replication—as when testing several interaction effects, one of them might be "significant", i.e., $p < 0.05$ just by chance.

It is also worth to notice that, although generally, we observed among survived academic teachers a lower level of motivating job potential during pandemic-forced e-learning than before it, a small proportion of our respondents—about 9% (19 people) declared higher motivating job potential during forced e-learning than before it. Therefore, there are some groups of "mavericks" for whom e-learning is associated with a higher motivating potential of their jobs. One possible clue that intuitively comes to mind in this context is related to the composition of our sample, the vast majority of our participants come from the humanities and social sciences, thus, one might think that a different picture of the motivating potential of work in e-learning might emerge among the academic teachers from STEM fields, where the use of computers for teaching is more suitable to academic course programs than in the humanities. However, to our surprise, when we checked the field of teaching for our 19 "e-learning enthusiasts", it turned out all of them come from the social sciences or humanities. Therefore, in further research, it might be interesting to investigate what factors determine that, in contrast to the vast majority of other surveyed teachers, there is a group of teachers even among teachers of social sciences and humanities, that seem to be happier with e-learning than with traditional face-to-face teaching.

6. Conclusions

To sum it up, our results provide some initial evidence that during the pandemic-forced e-learning, many (but not all) teachers might perceive their motivating job potential as lower than before. We also showed that motivating job potential is an important predictor of job satisfaction and work engagement, but not necessarily of work exhaustion. Although it is difficult to predict all the consequences of the perception of the lowered motivating potential of academic teachers' jobs during Covid-19 e-learning, but based on the framework of the JCT, it might be speculated that these consequences will not be particularly positive. This line of research was also confirmed in cognitive evaluation theory suggesting that teachers who feel competent and have a sense of agency will have authentic or intrinsic motivation and be more likely to be engaged and succeed in their classrooms [48]. Thus, fostering teachers' motivation is critical in the current educational landscape [7].

Therefore, our analysis strengthens the previous voices [17] and might spark a debate about the possible negative effect of forced e-learning on academic teachers. It is tempting to see online teaching as a panacea for Covid-19-related problems in higher education, but this panacea might be not without its side effects. We suggest that distance learning should be seen as a double-edged sword, on the one hand it helps to keep education going despite the pandemic-related physical and social distancing, while on the other hand—it might have some unintended negative consequences for teachers' jobs, their satisfaction and engagement. Online education provides unprecedented access to learning opportunities, as evidenced by its role during the coronavirus pandemic of 2020 [49]. On the other hand, the fact that teaching students via the Internet might be perceived as having lower motivating potential than more traditional face-to-face teaching (see also [4,18,50,51]), poses a serious challenge for pandemic e-learning and also for the future of e-learning in higher education. Therefore, the results of our study along with previous reports (e.g., [9,10,12–14,17]) might encourage higher education institution management and policymakers to take a closer look at the possible influence of e-learning of their teachers' motivating potential of work, e.g., by conducting surveys similar to ours to establish perception of the motivating job potential.

Our findings might also contribute new ideas to the education evaluation process. The motivating potential of work is related to teachers' engagement and satisfaction, thus, it might be important to take into account the changes in motivating potential of work when evaluating teachers' performance in online settings. The teachers' evaluation should take into account not only teacher performance but also adjust for the motivating potential of

the environment in which the teacher works, e.g., two otherwise identical teachers might perform differently when one has high, and the other one low, motivating potential of work. Therefore, it might be a good idea to control motivating potential of work when evaluating academic teachers, particularly when this evaluation is based on comparisons between teachers.

As the education for sustainable development has become increasingly important for HEIs, and societies in general, during the past three decades [52], we propose that socially sustainable e-learning requires not only to provide students and teachers with access to a reliable e-learning platform, tools, and technology but also must aim towards a new equilibrium—it requires actions concentrated on improving the motivating potential of teachers work, represented by such job characteristics as task identity, task significance, skill variety, feedback from the job, autonomy, and social dimensions of the work. Additionally, future research could go beyond teachers' motivating potential of work to explore how other actors of sustainable higher education (administrators, parents, and students) can collaborate to improve the e-learning outcomes.

University authorities, when dealing with pandemic-forced e-learning, might be inspired by our results to ask themselves, "what have we done to keep our teachers' motivating job potential at least on the same level as before introducing e-learning?" In all likelihood, as disasters and crises hindering the higher education process will continue to occur in the years to come, technology might help us to overcome various challenges in those difficult times, but it might also generate a new challenge. The understanding both positive and negative effects of distance learning might help us to be better prepared for those future challenges.

In spite of our contribution, the study is not without limitations. Among the main limitations of our study, there is the specificity of our sample; as we conducted our survey on a convenience sample of 202 academic teachers from one country, our study should be replicated in different samples to confirm its validity. However, we believe that our findings might spark debate on academic teachers' motivation during pandemic-forced e-learning and also inspire further empirical investigations in different institutional and cultural contexts.

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Institutional Review Board Statement: Ethical review and approval were waived for this study, due to the fact that this was a fully anonymous online opinion survey conducted via the means of computer mediated communication, among volunteers adults without direct interaction with participants and without experimental manipulations.

Informed Consent Statement: As this was an anonymous online study, participants after reading survey instruction agree to take part in this online study by clicking the appropriate button in an online form. No other form of informed consent was collected.

Data Availability Statement: The data presented in this study are openly available in RepOD Repository for Open Data at https://doi.org/10.18150/WMS5J4 (accessed on 2 March 2021).

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Appendix A. Questions Created by Authors to Measure (a) Perception of Motivating Job Potential of Academic Teachers Before and During Pandemic e-Learning, (b) Attitudes toward e-Learning, and (c) Satisfaction from Management during the Covid-19 Pandemic

(a) Motivating job potential (based on [22,25]) before and during distance learning due to the COVID-19 pandemic (response on a scale form 1—low, to 7—high)

1. In general, to what extent did your work enable the implementation of the didactic program planned by you?
    - 1.1. Before introducing distance learning;
    - 1.2. During distance learning due to the COVID-19 pandemic.
2. In general, to what extent were the results of your didactic work likely to significantly affect the lives of students or other people?
    - 2.1. Before introducing distance learning;
    - 2.2. During distance learning due to the COVID-19 pandemic.
3. In general, to what extent did your didactic work give you freedom and independence to independently determine the ways and methods of its implementation?
    - 3.1. Before introducing distance learning;
    - 3.2. During distance learning due to the COVID-19 pandemic.
4. In general, to what extent were you able to observe the direct and unequivocal effects of your teaching work?
    - 4.1. Before introducing distance learning;
    - 4.2. During distance learning due to the COVID-19 pandemic.
5. In general, to what extent did your teaching work consist of performing tasks that enabled you to use your various skills and abilities?
    - 5.1. Before introducing distance learning;
    - 5.2. During distance learning due to the COVID-19 pandemic.
6. In general, to what extent did your teaching work allow you to have friendly contacts and interactions with other people?
    - 6.1. Before introducing distance learning;
    - 6.2. During distance learning due to the COVID-19 pandemic.

(b) Attitudes toward e-learning (on a scale 1—I strongly disagree, to 5—I definitely agree). Questions marked * were included into a final scale.

7. I believe that in higher education remote learning (e-learning) can be a valuable support for the education process, but it will never completely replace stationary classes.
8. I do not see the benefits of using hybrid learning, i.e., supplementing classroom classes with elements of distance learning (e-learning).
9. Classes conducted entirely in the form of distance learning (e-learning) allow to impart knowledge to students in a more attractive way than teaching in a traditional, stationary form.*
10. The combination of stationary and distance learning results in students achieving better learning outcomes than when using only one of these forms of education.*
11. Due to the specificity of the education process in higher education, the possibilities of using distance learning in the work of an academic teacher are very limited.
12. The future of higher education is the so-called blended learning, in which part of each academic course will be held at the university, and some will be conducted in the form of distance learning.*
13. I believe that distance learning (e-learning) could successfully completely replace the majority of stationary academic classes.*
14. Overall, I am enthusiastic about the implementation of distance learning in higher education.*
15. Classes that take place only in the form of distance learning are of lower quality than stationary classroom classes.

(c) Satisfaction from management during the Covid-19 pandemic (scale from 1—I strongly disagree, to 5—I definitely agree).

16. University managers are good at ensuring continuity of education during distance learning caused by the Covid-19 pandemic.
17. The announcements issued by university management about the planning and course of distance learning caused by the Covid-19 pandemic provide me with all the information I need.
18. University managers are committed to addressing issues raised by academic teachers during distance learning caused by the Covid-19 pandemic.
19. University managers provide academic teachers with an appropriate amount of substantive support needed to properly operate programs used for distance learning caused by the Covid-19 pandemic.

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