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To cite this article: Magdalena Alejandra Gaete Sepúlveda, Natalia Volkova & Aleksandra Kulbaeva (2025) Exploring well-being of PhD students through latent profile analysis, Journal of Further and Higher Education, 49:1, 115-135, DOI: [10.1080/0309877X.2024.2438717](https://doi.org/10.1080/0309877X.2024.2438717)

To link to this article: <https://doi.org/10.1080/0309877X.2024.2438717>



Published online: 11 Dec 2024.



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# Exploring well-being of PhD students through latent profile analysis

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## ABSTRACT

Well-being plays a crucial role in the completion of PhD studies. However, recent research suggests that the components of universities' environment affect PhD students' well-being differently, resulting in various outcomes. This research explores the well-being of PhD students, constructed as a series of latent profiles, and assesses their associations with the impact of COVID-19 restrictions and student satisfaction with a PhD programme in a research-intensive university. Drawn from an ecological system perspective, students with similar patterns of PhD well-being were identified through latent profile analysis. Among 208 Russian participants, we established four well-being profiles: 'Disrupted well-being' (20.2%), 'Confident well-being' (28.8%), 'Dominated by Health and Research concerns' (26.9%) and 'Dominated by social connections concern' (24.1%) groups. The 'disrupted' group reported poor well-being regarding five out of seven domains. These students are less satisfied with the PhD programme than other participants and demonstrate the strongest worries about career prospects and degree completion due to COVID-19. The 'confident well-being' group is the most sustainable and resilient, as these students report satisfaction with their studies, achieve excellent scores in well-being domains and have fewer concerns about the pandemic's effect on their studies and degree completion. This profile mostly consists of male students. Satisfaction with the PhD programme contributes to the membership in this most desirable well-being profile. The two remaining groups demonstrated various alarming patterns of well-being, dominated by either 'Health and Home' and 'Research' domains or the 'Social' domain. This paper proposes recommendations for PhD programme managers and universities.

## ARTICLE HISTORY

Received 18 October 2022  
Accepted 31 October 2024

## KEYWORDS

Latent profile analysis;  
higher education;  
satisfaction; PhD student  
well-being; doctoral  
education; academic career

## Introduction

In turbulent times, characterised by an ever-changing job market, student mental health, specifically including PhD students, has become a great concern for educational organisations (Casey et al. 2022; Sverdlik and Hall 2019). During the years of completing a PhD, the intellectual and emotional challenges are enormous. There are episodes of success, passion and joy, but there are also moments of tedium, distress and emotions that are far from positive. As a result of these events, a solid body of research, conducted in various national contexts, highlights the unstable well-being of PhD students that leads to high dropout rates, disengagement and prolonged studies (Barry et al. 2018; González-

Betancor and Dorta-González 2020; Levecque et al. 2017; Marais et al. 2018; Woolston 2019). However, in the literature, several gaps exist regarding this phenomenon that need to be addressed to find a more informative picture of PhD student well-being, while supporting successful thesis completion.

The first gap is that most studies on PhD student well-being do not consider the heterogeneity in the PhD student population, which demonstrates more diversity in comparison with undergraduates (e.g. different types of support for their living – grants or work contract (Marais et al. 2018)), caring responsibilities or age diversity (Jackman et al. 2023). They focus mostly on a variable-centred approach, exploring relations across variables. These studies underline the relationships between individual attitudes and various research drivers or sources of strength, such as peers or supervisor, or social and academic support (Cardilini, Risely, and Richardson 2022; Tompkins et al. 2016). Whereas the core analytical unit of the variable-centred approach is relations among variables, the person-centred approach categorises individuals into sub-groups, proceeding from their resembling characteristics in a set of variables. Using person-centred analytic techniques, that group individuals with similar characteristics of the same profile (Araújo et al. 2019; Jackman et al. 2023; Lonka et al. 2019), lead us to create empirically rooted typologies, which can be valuable for university leaders. Much can be learned about the reactions of such student groups to the university environment. Therefore, it is important that universities learn about and keep track of the evolving PhD student well-being profiles, in order to refine their services and the environment to which the PhD students aspire. However, there is a scarcity of literature exploring these well-being profiles of PhD students. Against this backdrop, the first objective of this paper is to identify and categorise the well-being profiles of the PhD students.

The next significant gap is associated with the heterogeneous reactions of PhD students belonging to each of the well-being profiles obtained in the study to the university efforts aimed at improving the students' well-being, particularly with the challenges of the pandemic. Prior research has shown the relationships of student well-being with the impact of COVID-19 on their degree completion and employability (Plakhotnik et al. 2021), and satisfaction with their PhD programme (Hargreaves et al. 2017; Syropoulos et al. 2021). Demographics, such as gender, residency or age, are also associated with students' academic life perceptions (Araújo et al. 2019; Juniper et al. 2012; McLinden 2017). However, limited analysis shows how PhD students' profiles regarding their well-being experiences, perceive various university activities and pandemic challenges. Thus, the second objective of this study is to relate the well-being profiles to students' satisfaction with their PhD programmes, demographics and the effect of COVID-19 on their job prospects and academic expectations.

This quantitative survey-based study aims to address these gaps and improve insights into the well-being of PhD students during their studies under pandemic circumstances. In order to achieve these purposes, the following research questions were formulated:

**RQ1.** To what extent might well-being profiles differentiate PhD students?

**RQ2.** To what extent do satisfaction with PhD programmes, demographics (age, gender, residency) and the impact of COVID-19 on degree completion and employability predict allocation to the well-being profiles of PhD students?

Our paper contributes to the knowledge of how Higher Education Institutions (HEIs) might work with different profiles of PhD students to ensure their academic lives at universities more effective and enjoyable, resulting in the completion of PhD thesis. By using latent profile analysis (LPA), we identified the following four profiles: (1) 'Disrupted well-being', (2) 'Confident well-being', (3) 'Dominated by Health and Research concerns' and (4) 'Dominated by social connections concern'. These groups react differently to various elements of the academic environment and pandemic challenges. These responses could be applied to similar circumstances or other long-lasting

geopolitical challenges, and there are practical implications that could be considered by education leaders and prospective PhD students alike.

## Theoretical framework

### *PhD student well-being*

The concept of well-being has been defined in various ways. First, mental health is the basis for well-being that is described by the World Health Organization (WHO) as the condition when a person can function productively and sustainably and deal with conventional stresses (World Health Organization 2005). There is a wider description of well-being as a 'multi-faceted concept that encompasses social, cultural, physical, spiritual and psychological dimensions, recognizing both the collective nature of well-being, and the holistic processes of restoration and healing' (Burrows 2009). Specifically, subjective well-being, being an individual-level concept, refers to overall appraisal of life through estimation of affective experiences (e.g. a ratio of positive to negative affect) and cognitive judgements about one's life (e.g. life satisfaction in specific activities) (Eid and Larsen 2008). The WHO noted that well-being is composed of both objective and subjective dimensions that encompasses 'an individual's experience of their life as well as a comparison of life circumstances with social norms and values' (World Health Organization 2012). In contrast, psychological well-being comprises of components such as resilience (e.g. emotion regulation, coping), hedonic (e.g. enjoyment) and eudaimonic (e.g. meaningfulness) happiness (Ryff 1989; Tang, Tang, and Gross 2019). Overall, the lack of well-being manifests in such mental health problems as depression and anxiety (González-Betancor and Dorta-González 2020). As such, monitoring its level among students is critical for universities, specifically the focus on PhD programme where postgraduates experience depression and anxiety more when compared to the general population (Barry et al. 2018; Evans et al. 2018; Hazell et al. 2021).

Prior research has shown that globally universities experience similar challenges in PhD education, such as poor supervision, lack of resources, uncertain career paths and high dropout rates (Barry et al. 2018; Marais et al. 2018; Zhuchkova et al. 2022). These challenges are associated with the deterioration of mental health and well-being of PhD students (Jackman et al. 2022). Earlier studies have proven that PhD students suffer from negative emotions, loss of interest and a substantial quantity of misery during their studies (Hyun et al. 2006; Kurtz-Costes, Andrews Helmke, and Ülkü-Steiner 2006; Lonka 2003; Stubb, Pyhältö, and Lonka 2011). The landmark European research conducted by Levecque et al. (2017) found that 32% of investigated PhD students 'experience psychological distress or are at risk of having or developing a common psychiatric disorder'. Recently, a survey of 6,320 respondents revealed that over one-third of them (36%) had sought assistance due to tension or despair because of their PhD studies (Woolston 2019). Overall, the findings regarding their poor state of well-being have proven to be associated with disengagement, extended studies, dropout rates and the attrition deeply embedded in the culture of graduate schools (Golde 2000, 2005, 2014; González-Betancor and Dorta-González 2020; Lovitts 2001).

Although well-being is a key indicator of social progress and is used internationally for policy formation and economic development, there is no universal definition of well-being concept. Unsurprisingly, when writing about this phenomenon, researchers use numerous concepts, such as mental (Jackman et al. 2022; McCray and Joseph Richard 2020; McCray and Joseph-Richard 2021; Winter et al. 2021), psychological (Marais et al. 2018; Sverdlik and Hall 2019), subjective (Lonka et al. 2019), or PhD student (Casey et al. 2022; Hargreaves et al. 2017) well-being. To keep the scope of this study manageable, we worked with the definition of well-being specific to PhD students, proposed by Juniper et al. (2012) who stated, 'that part of a researcher's overall well-being that is primarily influenced by their PhD role and can be influenced by university-based interventions' (p.565). Good PhD student well-being was defined as the state when no PhD-specific issues are negatively

impacting it (Hargreaves et al. 2017; Marais et al. 2018). Thus, a core step towards assessing the levels of PhD student well-being is to investigate individual, social, university and societal factors, influencing this phenomenon, and their interaction with each other.

### *An ecological systems perspective to assessing PhD student well-being*

There are many different factors that affect the well-being of PhD students. Urie Bronfenbrenner (1979), a developmental psychologist, proposed an ecological perspective that highlights the interdependent relations between an individual and contextual systems for examining influences on human development throughout the lifespan. According to Bronfenbrenner's ecological systems theory, human development is shaped by interactions between persons and a series of nested systems, such as the microsystem, the mesosystem, the exosystem and the macrosystem, each contained within the next, like a set of Russian dolls (Bronfenbrenner 1979, 3). This theory is at the cutting edge of scholarship in exploring the complexity of human development and psychological growth (Tudge, Merçon-Vargas, and Payir 2022). We believe, for the purposes of our research, that this approach is currently the most effective.

According to ecological systems theory, the microsystem contains interrelations between an individual and the surrounding social networks (e.g. faculty members, academic supervisor, peers). The mesosystem pertains to the interconnected relationships between two or more significant surroundings within which an individual actively engages (e.g. for a student, the relations between the home and research environments). The exosystem constitutes social structures in which the individual does not have an active role, but they produce an indirect impact on the person's development (e.g. university policies). The macrosystem, being the outermost level of this framework, describes cultural and political contexts as well as global events that can affect the person's growth (e.g. pandemic). The core of this ecological system approach is the individual factors (e.g. competence, career). Finally, the chronosystem, or the time factor, encompasses any changes emerging either within the individual or these ecological systems over time, providing scope for monitoring changes in human development. In mental health research, ecological systems theory results in recommendations for interventions relevant to each system level to affect psychological growth (Eriksson, Ghazinour, and Hammarström 2018) and to reduce factors that serve as barriers to participation in higher education (McLinden 2017).

The ecological systems theory encompasses interactions both within and between environmental settings, focusing on an understanding of their impact on the development of the key stakeholders (e.g. students) nested within these systems (Bronfenbrenner 1979). Onwuegbuzie, Collins, and Frels (2013) stressed that this theory can be used to plan qualitative, quantitative and mixed research across social, behavioural and health studies. Recently, Jackman et al. (2022) adopted this approach to describe the influence of individual factors, the microsystem, the mesosystem, the exosystem and the macrosystem on mental health and well-being. This study found the interdependency of the various environmental settings for early-stage doctoral researchers and the specific impact of the broader working culture in academia on mental health and wellbeing. Tudge, Merçon-Vargas, and Payir (2022) emphasised the importance of keeping synergistic relations of both personal characteristics and contexts in choosing the methods of the analysis. In line with these findings, the person-centred analysis of relations between PhD students' perception of individual opportunities and environmental settings can bring novel insights to well-being research, stressing the various experiences included in ecological systems theory.

### *Application of ecological systems theory to PhD student well-being domains*

The aspects of PhD student lives were operationalised by Juniper et al. (2012) through seven domains of well-being. Specifically, we concluded that these seven domains of PhD student well-

being might be viewed via Bronfenbrenner’s ecological systems theory, as they reflect the experiences of PhD students in different environmental settings.

In this classification, the microsystem level can be assessed through *social and supervisor* domains, reflecting the perception of social interactions and academic supervisor behaviour, respectively. The mesosystem, or connections across contexts, can be mapped to the *health and home domain*, which reflects the impact of the research role on their private life, psychological and physical health. The exosystem encompasses *facilities and university* domains, which represent the perception of facilities and the wider activity of the universities. The remaining two domains, namely *career, and research*, are related to individual factors, mirroring personal characteristics such as experience, abilities, skills, or access to developmentally helpful activities (McLinden 2017; Tudge, Merçon-Vargas, and Payir 2022). The *career* domain reflects the perception of opportunities for training and career progression, while the *research* domain reflects the perception of the research experience. Therefore, we conceptualise that these seven domains can be mapped onto three out of the four levels of ecological systems theory. Specifically, the impact of the chronosystem can be explored via changes in PhD student characteristics over their study years. This conceptualisation has critical implications for generalisation (e.g. practices, policies), because the profiles developed through this typology provide policymakers with a holistic view of their PhD students’ well-being, considering the environmental settings and situations of concern. Figure 1 presents a visual representation of the well-being domains across ecological systems.

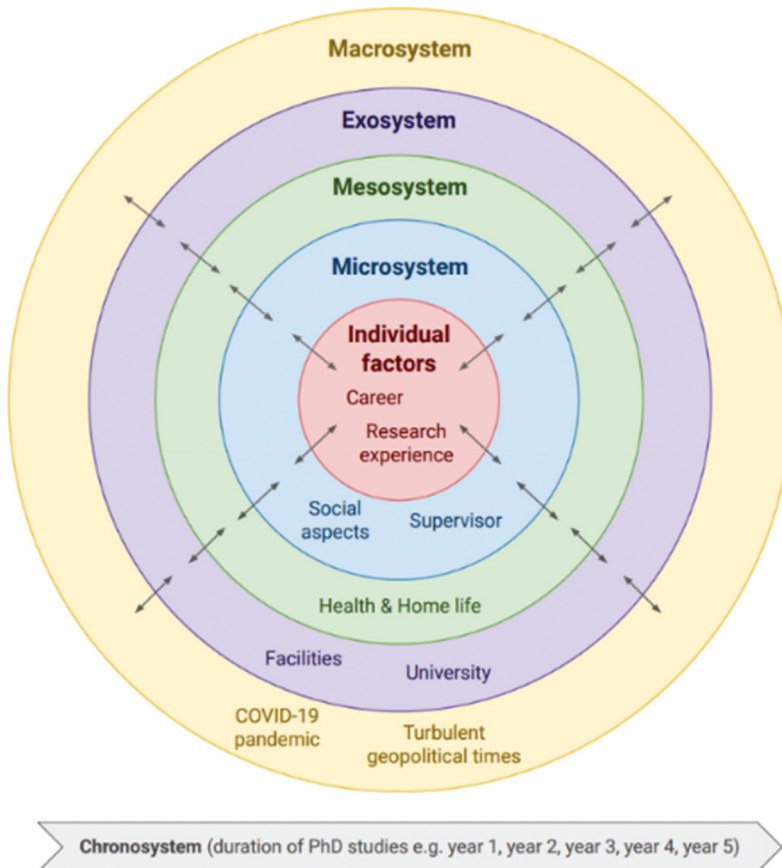


Figure 1. Ecological systems for PhD student well-being domains.

## *Russian higher education macrosystem during challenging times*

The macrosystem, with its focus on global events, productivity culture and intense work, has a significant impact on changes in HEIs at national and international levels. This system provides opportunities to compare and analyse different educational agendas and policies, influencing student experiences (McLinden 2017).

In Russia, over the past decade, the number of PhD students declined progressively between 2011 and 2019, including the share of young individuals who progress to PhD programmes directly after graduation (see [Appendix A](#)). Further, from 2015 to 2020, in Russia, there was a significant redistribution of postgraduates, especially those who are younger than 35 years of age, towards the leading universities where PhD students receive additional support, employment and resources for research (Zhuchkova and Bekova 2023). Since 2020, the number of PhD students has slightly increased, keeping the greatest proportion of individuals younger than 35 years of age across the Russian PhD student population. Nevertheless, in 2022, the Russian higher education system had almost 110,000 graduate students, whereas 10 years ago, this number was almost 147,000 (Russian Federal State Statistics Service 2022).

Given the critical impact of the COVID-19 pandemic on student well-being (Syropoulos et al. 2021; Varadarajan et al. 2021), the importance of supporting psychological resilience and well-being during prolonged periods of self-isolation in Russian macrosystem can be highlighted. Before the pandemic, there was a lack of knowledge and understanding on large-scale national studies and reports on the state of psychological health of youth and students (Russian Ministry of Higher Education and Science 2020a, 16–17). When the pandemic started, the government prepared over 15 guidelines addressing distance education, dormitory operations, student employment, volunteer work and psychological support, recognising a lack of effective programmes for providing aid and support to students experiencing challenging educational and social-psychological situations (Russian Ministry of Higher Education and Science 2020b, 22).

Universities responded to the pandemic and geopolitical instability in 2021 with varying levels of preparedness, adopting diverse tools and formats for different programmes. Research shows that most universities' educational processes were not disrupted, and the academic year ended without significant issues (Filkina et al. 2022; Subocheva, Ryayantseva, and Yakushova 2021). Yet, the COVID-19 pandemic lockdown in Russia has resulted in online learning and a lack of social communication. Since the data for this research was collected from December 2021 to February 2022, no restrictions were in force at that time, but some of the students still experienced their consequences. Thus, this study examines the impact of COVID-19 on degree completion and job prospects to understand the students' concerns about macrosystem conditions in this country.

## **Methodology**

### *Data collection and sample*

After receiving the ethical approval from our university ethics committee, the data were drawn from a research-intensive Russian university on four campuses where 1,332 PhD students studied in the 2021–22 academic year (Anisimov 2021, 105). The authors decided to focus on this specific research university and explore the factors that most affect PhD students in similar university settings. The questionnaire was piloted for timing and understanding purposes, on a group of four university students. Based on the participants' feedback, the wording of the questions that caused difficulties in understanding was improved. The data were collected from 30 December 2021 to 20 February 2022. In order to achieve the desired number of responses, it was decided to issue 600 questionnaires. PhD students anonymously filled out the online form in Russian. It took about 25 min, on average, to complete the survey. Overall, 208 out of the 600 distributed questionnaires were returned. The overall response rate was 35%.

**Table 1.** Demographic characteristics.

Characteristics	Categories	Frequency	Percentage
Gender	Female	119	57,21%
	Male	89	42,79%
The number of years in PhD program	One year	78	37,50%
	Two years	81	38,94%
	Three years	49	23,56%
Doctoral school group	Mathematics, Technical Sciences, Computer Science, Physics, Chemistry, Biology	38	18,27%
	Management, Economics, Public Administration, Education, Law	76	36,54%
	Psychology, Philology, Philosophy, History, Cultural Studies, Art and Design	60	28,85%
	Sociology, Political Science, International Relations and Regional Studies	34	16,35%
Residency	Living in hometown	163	78,37%
	Living on campus	45	21,63%
Employment	Full-time	144	69,23%
	Part-time	47	22,60%
	Not employed	17	8,17%
Workplace	University	98	47,12%
	Other organisations	93	44,71%
	Not employed	17	8,17%
Previous degrees at this University	Bachelor's degree	6	2,88%
	Master's degree	71	34,13%
	Bachelor's and Master's degrees	76	36,54%
	No degree	55	26,44%
Children	Yes	13	6,25%
	No	195	93,75%

The demographic characteristics and education-related attributes are shown in [Table 1](#). Male students accounted for 42.8% of participants, while the share of females was 57.2%. The average age of the participants was 27 ( $SD = 4.47$ ), ranging from 22 to 58 years and resembling the PhD student population in this country (see [Appendix A](#) with the age groups distribution between 2012 and 2022). Most respondents lived in their hometowns (78.4% of the sample). The average number of years, spent in the PhD programme, was 1.86 ( $SD = 0.77$ ), varying from 1 (37.5% of the sample) to 3 years (23.6% of the sample). PhD students were primarily with full-time employment (69.2% of the sample). Only 8.2% of participants were not employed at the time of the survey. Nearly half of the students worked for this university (47.1%). This broke down to full-time (67.4%) and part-time (32.6%). Most PhD students had received either their bachelor's or master's degrees, or both, from this University – only 26.4% of the participants had not studied there previously. The majority of participants did not have children (93.8% of the sample).

### Measures

The full questionnaire (69 items), in Russian, was divided into four sections: demographics, assessment of well-being, student satisfaction with the PhD programme and the impact of COVID-19 on students' concerns about degree completion and future job prospects. Responses to all the assessments were done using a five-point Likert scale (see [Appendix C](#)). The correlation matrix procedure was applied to detect possible common method bias due to the lengthy questionnaire. The data do not show very high correlations (greater than 0.9) between any pairs of constructs, indicating the absence of this effect (Rodríguez-Ardura and Meseguer-Artola 2020).



### PhD student well-being

The domains of PhD student well-being were assessed using the PhD well-being scale (Juniper et al. 2012), which was originally in English. In this scale, 5 shows that the item has the highest impact on well-being (1 = 'not at all important and bothersome' and 5 = 'extremely important and bothersome'). The 58 items and guidelines were translated into Russian by a bilingual scholar. Then, they were back-translated, by a different academic, to compare with the original English version, following Brislin (1970). The original version and the back-translation were reviewed by the principal investigator, the original translator and the back-translator to resolve any discrepancies (King and So 2013). Finally, 41 items in this section, appropriate for implementation, were included in the new questionnaire. All seven domains, namely, 'Career', 'Facilities', 'Health and Home', 'Research', 'Social', 'Supervisor' and 'University' had acceptable internal reliability (see Table 2). Confirmatory factor analysis with maximum likelihood estimation also demonstrated appropriate goodness-of-fit indices ( $\chi^2(751) = 1198.87$  ( $p < 0.01$ ); RMSEA = 0.054 [90% CI = 0.048–0.059], CFI = 0.882; SRMR = 0.076).

### Impact of COVID-19

In this section of the questionnaire, to assess the impact of COVID-19 on students' concerns about degree completion and future job prospects, we used the seven questions developed by Plakhotnik et al. (2021) (1 = 'not at all important' and 5 = 'extremely important'). Three self-report items measured students' perceived ability to become employed upon graduation. In this sample, the internal consistency of this subscale was  $\alpha = 0.73$ . The remaining four items were about the perceived ability to complete the PhD degree and meet academic expectations. This subscale also had an acceptable level of internal consistency ( $\alpha = 0.93$ ).

### Satisfaction with PhD program

The three satisfaction items were taken from the study of Hargreaves et al. (2017) (1 = 'strongly disagree' and 5 = 'strongly agree'). We added the following item 'I would recommend studying in the PhD programme at the university'. The four items measure students' perceived satisfaction with the PhD programme, demonstrating the overall experience in the university. The internal consistency for this scale was acceptable ( $\alpha = 0.87$ ).

### Statistical analysis

Statistical analysis for internal reliability, descriptive statistics and multinomial logistic regression was run via Stata/MP software. LPA was performed in RStudio, applying the tidyLPA package that provides access to a widely used coding framework by using open-source and commercial software (Rosenberg et al. 2018). First, demographic characteristics were described by using percentage and frequency. Second, skewness analysis was performed to estimate the normality

**Table 2.** Variables in the study.

Variables	Number of items	Cronbach's alpha	Skewness
Career domain	6	0.67	0.03
Facilities domain	4	0.82	1.29
Health and Home domain	8	0.83	0.13
Research domain	8	0.82	0.16
Social domain	4	0.86	0.4
Supervisor domain	6	0.86	1.1
University domain	5	0.82	0.34
Impact of COVID-19 on student degree completion	4	0.93	1.37
Impact of COVID-19 on student job prospects	3	0.73	0.42
Satisfaction with PhD program	4	0.87	0.46

of distribution for the variables. The internal reliability of each scale was measured by calculating Cronbach’s alpha.

Then, LPA was run to capture the unique well-being profiles of PhD students. The purpose of this statistical modelling approach is to group individuals with similar patterns of responses in the PhD well-being scale (Juniper et al. 2012), resulting in a better understanding of the underlying heterogeneity in the data. The sub-groups obtained are called latent profiles because they are not observed directly in the data. A series of latent profile analysis models was identified by using the tidyLPA package, producing the following statistical indicators: the Bayesian information criterion (BIC), the Akaike Information Criterion (AIC), log-likelihood, entropy and p-values of the bootstrapped likelihood ratio test (BLRT). These indices were applied to select the final fitting model in which lower values of the BIC and AIC, coupled with higher log-likelihood values, determine an adequate solution (Spurk et al. 2020). The significance level (p-values) of BLRT show for each k-profile model, adding the k<sup>th</sup> profile, either significantly improving the model fit or not (Wardenaar et al. 2021). Furthermore, we estimate entropy as a criterion of the quality of the profile membership classification. Higher entropy (up to perfect value of 1) indicates better classification, demonstrating the accuracy of the model in assigning individuals to the profiles (Spurk et al. 2020). Beyond these indices, the size of each profile was considered. Any profiles should include at least 1% of the sample or 25 cases to avoid low statistical power and low generalisation power (Araújo et al. 2019). Moreover, the theoretical meaning and the interpretability of the final number of the profiles were considered (Marsh et al. 2009). We analysed solutions with up to eight profiles.

After choosing the best model, the means of each well-being domain were calculated over profiles. Finally, a multinomial logistic regression was employed to identify the impact of satisfaction with the PhD programme, demographics and the effect of COVID-19 concerns on profile membership.

## Results

### Well-being profile description

LPA was used to extract profiles that categorise PhD students across the seven domains of well-being. Based on fit indices (see a comparison of models and description in Appendix B), an LPA

**Table 3.** Characteristics of PhD student well-being profiles.

Variables	Profile 1	Profile 2	Profile 3	Profile 4
	(n = 42, 20.2%)	(n = 60, 28.84%)	(n = 56, 26.92%)	(n = 50, 24.04%)
	M(SD)	M(SD)	M(SD)	M(SD)
Career domain	3.44 (0.97)	1.38 (0.89)	2.51 (0.99)	2.41 (0.77)
Facilities domain	1.73 (1.12)	0.47 (0.76)	1.04 (0.88)	1.12 (1.08)
Health and Home domain	4.06 (0.69)	1.58 (0.82)	3.38 (0.91)	2.54 (0.98)
Research domain	3.61 (0.72)	1.25 (0.86)	2.94 (0.93)	2.59 (1.03)
Social domain	3.95 (0.86)	0.43 (0.60)	0.89 (0.63)	3.03 (0.68)
Supervisor domain	2.15 (1.36)	0.19 (0.45)	0.94 (1.06)	1.21 (1.14)
University domain	3.21 (1.51)	1.31 (1.20)	2.31 (1.32)	1.81 (1.46)
Age (years)	26.81 (3.83)	26.8 (5.32)	26.91 (3.94)	27.64 (4.46)
Satisfaction with PhD program	2.85 (1.19)	4.0 (0.86)	3.35 (1.08)	3.54 (0.89)
Impact of COVID-19 on student career perspectives	2.84 (1.24)	2.28 (1.01)	2.66 (1.17)	2.75 (1.22)
Impact of COVID-19 on student degree completion	2.32 (1.51)	1.43 (0.93)	1.98 (1.25)	1.8 (1.15)
Gender				
Female	59.52%	41.67%	73.21%	56%
Male	40.48%	58.33%	26.79%	44%
Residency				
Living in hometown	69.05%	81.67%	76.79%	84%
Living on campus	30.95%	18.33%	23.21%	16%

Profile 1: ‘Disrupted well-being’; Profile 2: ‘Confident well-being’; Profile 3: ‘Dominated by Health and Research concerns’; Profile 4: ‘Dominated by social connections concerns’.

model with four profiles was chosen, i.e. four groups of PhD students with different well-being needs were identified.

Table 3 shows the raw scores of PhD student well-being domains for each profile obtained in this study. *Profile 1*, labelled '*Disrupted well-being*' ( $n = 42$ , 20.2%), included students with high levels of well-being across the domains studied. In this subgroup, five out of seven domains had mean scores higher than 3 and the most concerning areas of well-being were the 'Health and Home' ( $M = 4.06$ ) and 'Social' ( $M = 3.95$ ) domains. One-third of this group was students who lived on campus. Interestingly, the lowest level of programme satisfaction was demonstrated by students who studied in their hometowns. Thus, it requires focusing on their adjustment to PhD studies, especially during the second year when this subgroup struggled a lot, demonstrating the most alarming level of programme satisfaction ( $M = 2.2$ ,  $SD = 0.29$ ). This profile should be of most concern for university leaders.

In contrast, *Profile 2*, made up of a relatively large subgroup of PhD students (28.8%), was characterised by the lowest scores of the well-being domains, varying from 0.19 to 1.58. This is the only profile in which male students accounted for 58.3% of this sub-group, outnumbering their female counterparts. We labelled this subgroup as '*Confident well-being*'.

*Profile 3* ( $n = 56$ , 26.9%) was characterised by high scores of the 'Health and Home' ( $M = 3.38$ ) and 'Research' domains ( $M = 2.94$ ); thus, this subgroup was labelled as '*Dominated by Health and Research concerns*'.

*Profile 4*, labelled '*Dominated by social connections concerns*' ( $n = 50$ , 24.1%), included students with a considerably higher score of 'Social' domain ( $M = 3.03$ ). Importantly, the terms high, highest, lowest, or low are applicable for the subgroups compared with the total sample of participants (Araújo et al. 2019). The characteristics of the well-being profiles are presented in Figure 2.

### Multinomial logistic regression analysis

Multinomial logistic regression analysis was performed to answer the second research question. Table 4 illustrates the estimation of regression coefficients and odds ratios. If the value of the odds

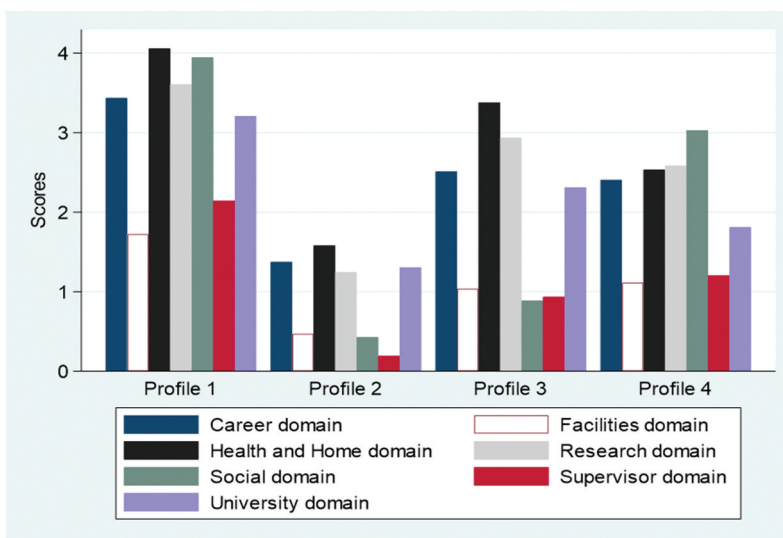


Figure 2. PhD student well-being profiles. Profile 1: '*Disrupted well-being*'; Profile 2: '*Confident well-being*'; Profile 3: '*Dominated by Health and Research concerns*'; Profile 4: '*Dominated by social connections concerns*'

**Table 4.** Predicting well-being profile membership.

Predictors	Profile 1		Profile 3		Profile 4	
	('Disrupted well-being')		('Dominated by Health and Research concerns')		('Dominated by social connections concerns')	
	Coefficient (SE)	OR	Coefficient (SE)	OR	Coefficient (SE)	OR
Gender (Male)	-0.96* (0.48)	0.38	-1.52** (0.43)	0.22	-0.56 (0.41)	0.57
Age	0.0004 (0.06)	1.0	-0.02 (0.05)	0.98	0.03 (0.05)	1.03
Residency (Hometown)	1.48* (0.58)	4.4	0.89 (0.54)	2.45	0.08 (0.56)	1.08
Satisfaction with the PhD program	-1.27** (0.25)	0.28	-0.78** (0.23)	0.46	-0.58* (0.23)	0.56
The perceived impact of COVID-19 on educational outcomes	0.67* (0.21)	1.95	0.54* (0.26)	1.71	0.12 (0.26)	1.12
The perceived impact of COVID-19 on career perspectives	-0.08 (0.28)	0.93	-0.07 (0.25)	0.93	0.31 (0.24)	1.36

N = 208. Profile 2 was the reference profile. OR – odds ratio. Standard errors in parentheses.

\*p < 0.05, \*\*p < 0.001.

ratio is higher (lower) than one, the variable increases (decreases) the odds of being the member in the current profile.

As can be seen in Table 4, satisfaction with the PhD programme negatively predicted the likelihood of being a member of the three profiles relative to the reference ('Confident well-being') profile. In other words, the increase in satisfaction with PhD programme scores is associated with the memberships in the reference group for students who belong to the three remaining profiles. Moreover, for students with social connection concerns (profile 4), this is the only significant coefficient that predicts the membership in the more desirable ('Confident well-being') profile. Thus, the development of satisfaction with the PhD programme is imperative for those PhD students who experience a lack of social involvement, requiring interventions at the microsystem level.

As for profiles 1 and 3, the switch of focus from education to health is critical. More specifically, the decrease in PhD students' concerns on their educational outcomes due to the impact of COVID-19 leads to membership in the reference profile. Similarly, gender negatively predicted the relative likelihood of membership in profiles 1 and 3, suggesting that male students are less likely to be members of these profiles than females. Thus, university leaders should consider prioritizing PhD students, particularly females, affected by the 'Health and Home' and 'Research' well-being domains by focusing on their satisfaction levels with the programme and the perceived impact of COVID-19 on their academic achievements. Additionally, similar efforts are crucial for students with poor levels of well-being in profile 1, with a specific emphasis on those studying in their hometowns. The odds ratio of residency (4.4) for membership in profile 1 is positive and significant, indicating that hometown students are more likely to belong to this profile.

## Discussion and recommendations

This paper reports the findings that explored the PhD student experience by assessing their well-being profiles. Next, the research focuses on the association of obtained profiles with students' satisfaction with the PhD programme and the impact of COVID-19 on degree completion and career perspectives. The key contribution of this research is that it identifies PhD students with similar well-being patterns, who differ from the composition observed in other groups based on the well-being typology developed by Juniper and others (2012). Our findings offer four interpretable well-being PhD students' profiles: 'Disrupted well-being' (20.2%), 'Confident well-being' (28.8%), 'Dominated by Health and Research concerns' (26.9%) and 'Dominated by social connections concern' (24.1%)

groups. Thus, university leaders, PhD programs, and supervisors should consider introducing various strategies to increase well-being and reduce the mental health problems across specific profiles of PhD students. Furthermore, we conceptualised the well-being domains to the levels of the ecological systems theory to help in the identification of the sources of influence for each well-being profile. In doing so, well-being profiles provide practitioners with extra direction regarding contexts that should be explored further for a particular group of PhD students.

*As for the 'Confident well-being' profile*, this group is the most sustainable, steady and resilient as these students report satisfaction with their studies and all seven well-being domains. Moreover, they have fewer concerns about the pandemic effect on their studies and degree completion. Notably, this profile mostly comprises of male students.

*Concerning the 'Disrupted well-being' profile*, in contrast, this group reported serious concerns about five out of seven domains related to PhD well-being. This poor level of well-being is concerning because these students are also less satisfied with the PhD programme than other participants and demonstrate the strongest worries out of the four groups about career perspectives and degree completion due to COVID-19. As for possible interventions to improve PhD student well-being, Tompkins and associates (2016) suggest that social support from peers, family, friends and faculty leads to boosting both programme and life satisfaction among PhD students. During the pandemic, university support provided by teachers and administrative staff played an important mediating role in the overall impact on students' well-being (Plakhotnik et al. 2021; Syropoulos et al. 2021). Consequently, university leaders as representatives of the exosystem could promote interventions on the microsystem level to stimulate social cohesion between the 'Confident' and 'Disrupted' groups to share PhD experiences and practices used by students with outstanding levels of well-being. This cohesion can be strengthened through group assignments, projects, social networks and peer mentoring schemes.

*In the case of 'Dominated by Health and Research concerns'*, this group demonstrates varying patterns of lack of well-being, reporting 'Research' and 'Health and Home' as statistically higher (worse) than the other domains. This echoes previous studies where these domains also scored the highest (Hargreaves et al. 2017). Moreover, health and home and research concerns issues are bundled together as problematic domains for almost a quarter of the PhD students. From an exosystem perspective, this highlights the importance of implementing relevant training programmes for research activities and promoting practices for mindfulness and resilience development as the essential components of psychological well-being.

*Finally, the 'Dominated by social connections concern' profile*, this group exhibits social aspects as the most troublesome domain. Casey et al. (2022) highlighted those challenges related to the domains 'Social', 'Research' and 'Health and Home' were the most critical for PhD students' well-being in the UK academic landscape. This is consistent with our findings in a Russian university, about this specific profile, where these three domains are unhealthier, followed by a fourth domain 'Career'. From an exosystem perspective, this emphasises the value of creating an environment through activities that give PhD students a feeling of community and facilitate networking for future jobs (e.g. career fairs, and one-on-one encounters with potential employers).

The pandemic-induced isolation also underscores the need to prioritise university social aspects, especially for students in the 'Dominated by social connections concern' profile. To support students' well-being, the university in this study (~50,000 students) launched an online Center for Psychological Counseling, offering counselling services through a 24-h helpline. The institution also initiated the 'Mental Health Spring' programme, featuring various events, group programmes, self-help materials and thematic articles (Russian Ministry of Higher Education and Science 2020a, 17). Through these initiatives, students have had access to professional support to share their stress experiences. In this way, to promote sustainable development among PhD students, they should be equipped with tools to encourage and enhance their proactive approach to academia. For instance, descending from the exosystem and through the mesosystem to the microsystem further to the individual factors, in 2017, the Spanish University of Navarra launched the 'Tu&Co program' (Lleó

et al. 2018), a personal knowledge and development programme that helps students to get to know themselves better, their skills and abilities. The programme aims to develop habits that forge the personality and character of each student, ensuring they grow as individuals and professionals. This practice results in a low level of the attrition rate among university's PhD students.

A further examination of the obtained profiles of PhD students' well-being shows that for all participants, satisfaction with the PhD programme is associated with a more desirable profile, including the outstanding scores for well-being domains. Furthermore, the present findings demonstrate that male PhD students are more likely to be included in the 'Confident well-being' profile, while females are more likely to be in the 'Disrupted well-being' profile. This is consistent with prior research, indicating across the world that female postgraduates suffer from mental health problems more than male PhD students (Evans et al. 2018; Marais et al. 2018). Corsini, Pezzoni, and Visentin (2022) established that female PhD students were less productive than their male counterparts regarding publications and citations. Hargreaves et al. (2017) also found that the overall well-being score differed by gender and year of education, indicating that females and students in the later stages of their PhD degree scored significantly worse than males and students of the earlier stages. Thus, it is potentially imperative for universities to develop strategies that support female students who are at greater risk of experiencing poor mental health. Kurtz-Costes, Andrews Helmke, and Ülkü-Steiner (2006) indicated that female PhD students were more concerned with finding a balance between family responsibilities and their career goals. Thus, social involvement at the microsystem level via supportive mentorships with attitudes towards stabilising professional and personal lives may mitigate the alarming level of well-being among female PhD students.

These results also suggest that PhD students' worries about their academic achievements due to the pandemic disruption are critical for those who belong to Profile 1 ('Disrupted well-being') and Profile 3 ('Dominated by Health and Research concerns'). Thus, the decrease of these concerns will lead such individuals to membership in the well-being profile with outstanding scores or, in other words, improve their well-being. Additionally, the results did not show any impact of COVID-19 on the PhD students' career perspectives, this fact can be explained by the employment status of participants. The number of unemployed PhD students accounted for only 8.2% in this sample.

Consistent with the previous studies (Sverdlik and Hall 2019; Woolston 2019), these findings indicated a decrease in the level of satisfaction with the programme across the second-year students, except for those who belong to profile 4 ('Dominated by social connections concerns'). However, the third-year students showed an increase in programme satisfaction compared to the previous study year with the same exception for profile 4. Thus, the most alarming group is the second-year students who are less satisfied with PhD studies and require extra support from the university. Furthermore, satisfaction with the PhD programme does not tend to decline over time for students with different well-being profiles, indicating the difference in PhD students' perceptions of environmental settings in the context of the chronosystem within ecological systems theory.

Based on the outcome of this research, it might be prudent for universities to adopt a similar approach to students following, or during any exceptional event (*force majeure*), like COVID-19 or a geopolitical situation, both of which might last for a period longer than a semester. The approach might consist of a modified or tailored questionnaire, or individual or group counselling session, to identify the students who are more distracted by the events and who need the universities' help and attention to allay fears and refocus their attention by using interventions relevant ecological system layers.

### Limitations

Despite this study's contribution to the research on PhD students' well-being, several limitations are noteworthy. First, our work looks at a selected sample of surveyed students who study at the same university. Using the data of one university comes at the cost of limited external validity of the results of the conducted analyses due to the impossibility of making assumptions to other universities. Thus,

further cross-national studies are necessary to determine whether the profiles obtained in this research are common in other educational and national contexts for PhD students. Second, the self-selection bias and a small sample size limit the scope of this study. Future research conducted on a larger and wider sample size is needed to consider longitudinal observations and qualitative sources to triangulate data for better understanding PhD students' academic experiences. Third, the response rate can be improved through reduction of the number of questions. Future research can exclude constructs (e.g. the perceived impact of COVID-19 on career perspectives) that did not significantly affect PhD students' well-being needs or might not be relevant to a particular country's context. Finally, the study focuses on PhD students' well-being in the COVID-19 era, which was an extraordinary global emergency event. We also acknowledge that well-being includes additional facets that were not examined. Longitudinal designs also might explain the actual predictive power of factors on students' well-being profiles and reveal more subtle nuances.

## Conclusion


These results provide PhD programmes with an ecological systems framework to highlight various patterns in PhD students' well-being. Four major PhD well-being profiles were established across the target audience. These groups react differently to the university environment and pandemic circumstances and exhibit various levels of satisfaction with their PhD programmes. This study contributes to the well-being literature by highlighting the relevance of recognising and working differently with each group in developing student self-esteem as future professionals, navigating their career prospects and maintaining work-life balance. These findings may help PhD programmes to generate strategies that foster and maintain desirable well-being profiles, leading to optimising the level of well-being among PhD students.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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## Appendices

### Appendix A. The distribution of PhD students across age groups in Russia 2012-2014 and 2019-2022

Age group	2012		2013		2014		2019		2020		2021		2022	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
before 25 y.o.	65610	45%	54466	41%	44417	37%	15650	19%	15561	18%	15427	17%	16877	15%
25-29	57071	39%	52861	40%	50766	42%	44511	53%	46755	53%	47807	53%	53615	49%
30-34	11211	8%	11637	9%	11689	10%	11319	13%	11549	13%	11570	13%	15552	14%
35-39	6172	4%	6223	5%	6194	5%	6050	7%	6492	7%	7078	8%	11381	10%
40 and older	6690	5%	6815	5%	6802	6%	6735	8%	7394	8%	8274	9%	12280	11%
<b>Total</b>	<b>146754</b>	<b>100%</b>	<b>132002</b>	<b>100%</b>	<b>119868</b>	<b>100%</b>	<b>84265</b>	<b>100%</b>	<b>87751</b>	<b>100%</b>	<b>90156</b>	<b>100%</b>	<b>109705</b>	<b>100%</b>

2015-2018 data was unavailable from the Federal Statistics Service

## Appendix B. Latent profile analysis (LPA)

LPA was run to extract unique profiles based on seven domains of PhD student well-being. In this analysis, the indicator variables were fixed to have zero covariances within and across the profiles. The variances of the indicators are allowed to vary within profiles but are restricted to be equal between profiles.

The fit statistics for the LPA models are presented in Table B1, including the number of profiles that do not reach at least 25 cases of the sample. These results suggested using a four-profile solution as the best modelling of these data. First, the value of AIC was the lowest for the four-profile model across all tested models. Moreover, the BLRT of 0.01 for the four-profile solution specifies that adding a fifth profile does not improve this index ( $p = 0.91$ ). Second, four models with five, six, seven, and eight profiles were rejected due to the presence of profiles with less than 25 cases of the sample. Third, although the BIC value was the lowest for the three-profile model, the difference with the four-profile solution was too small (6.04). Yet, the entropy value was slightly higher (0.81) for the four-profile model compared to the three-profile solution (0.80), specifying that the four profiles can classify 81% of the sample. Finally, combining all the criteria, the theoretical meaning and interpretability of the four-profile solution suggested extra justification for removing the three-profile model.

**Table B1.** Fit indices and statistics for LPA.

Models	log-likelihood	df	AIC	BIC	Entropy	BLRT	Size
1 profile	-2420.16	14	4868.32	4915.04	1.00	n/a	0
2 profiles	-2283.27	22	4610.54	4683.97	0.78	0.01	0
3 profiles	-2240.77	30	4541.54	4641.67	0.80	0.01	0
4 profiles	-2222.44	38	4520.88	4647.71	0.81	0.01	0
5 profiles	-2219.62	46	4531.23	4684.76	0.75	0.91	1
6 profiles	-2187.60	54	4483.19	4663.42	0.84	0.01	2
7 profiles	-2171.09	62	4466.18	4673.11	0.78	0.01	4
8 profiles	-2165.17	70	4470.34	4703.97	0.78	0.58	4

## Appendix C. The assessments' items

Dimensions	English version	Russian back-translated version
<b>PhD student well-being (41 items)</b>		
Preface	Listed below are 6 situations related to the career and development of graduate students. How influential and important were these situations to your overall well-being?  If you have encountered a situation in the last 6 months, please rate the extent to which it has influenced your overall well-being on a scale from 1 (the situation was completely NOT influential and NOT important to my well-being) to 5 (the situation was very influential and important to my well-being). If you have not encountered the situation, please mark 'have not encountered it in the last 6 months'.	Ниже перечислены 6 ситуаций, связанных с карьерой и развитием аспирантов. Насколько данные ситуации были влиятельны и важны для Вашего общего благополучия?  Если Вы сталкивались с ситуацией в течение последних 6 месяцев, пожалуйста, оцените степень ее влияния на Ваше общее благополучие по шкале от 1 (ситуация была совершенно НЕ влиятельна и НЕ важна для моего благополучия) до 5 (ситуация была очень влиятельна и важна для моего благополучия). Если не сталкивались с ситуацией — отметьте 'не сталкивался в течение последних 6 месяцев'.
Career domain	Being unclear about the next stage of your career after your PhD?	Вы испытывали неясность в отношении следующего этапа своей карьеры после аспирантуры.
	Being unsure about your future career prospects?	Вы испытывали неуверенность в своих будущих карьерных перспективах.
	Having inadequate career advice?	Вы испытывали недостаток консультирования, связанного с карьерой.
	Lacking training on publication skills? e.g. referencing, submissions	Вы испытывали недостаток обучения навыкам подготовки научных публикаций. Например, цитирование, подача заявок на публикацию и т. д.
	Lacking training to develop your technical research skills?	Вы испытывали недостаток обучения, направленного на развитие Ваших технических исследовательских навыков.

(Continued)

Dimensions	English version	Russian back-translated version
Facilities domain	Lacking opportunities to teach or tutor?	У Вас было недостаточно возможностей для преподавания.
	Having to work with outdated equipment?	Вам приходилось работать с устаревшим оборудованием.
	Having a poor quality workplace? e.g. cramped office or lab	Вы имели рабочее место плохого качества. Например, тесный или неудобно спроектированный офис или лаборатория.
	Having inadequate facilities at your place of work? e.g. canteen, gym	В здании, где Вы работали, отсутствовало надлежащее оборудование. Например, столовая, спортивный зал.
Health and Home domain	Lack of technical support for research equipment?	Отсутствовала техническая поддержка для исследовательского оборудования.
	Experiencing high levels of stress because of your research?	Вы испытывали высокий уровень стресса из-за своей исследовательской деятельности.
	Having a high workload that impacts on your private life?	Вы имели высокую рабочую нагрузку, оказывающую влияние на Вашу личную жизнь.
	Experiencing a persistent low mood because of your research?	Вы испытывали постоянное плохое настроение из-за своей исследовательской деятельности.
	Feeling constantly tired and run-down because of your workload?	Вы чувствовали постоянную усталость и утомление из-за нагрузки в аспирантуре.
	Experiencing physical health conditions because of your work? e.g. RSI, back problems	Вы столкнулись с проблемами со здоровьем из-за своей работы. Например, с проблемами с опорно-двигательным аппаратом, со спиной и т. Д.
	Experiencing poor quality sleep because of your studies?	Вы испытывали плохое качество сна из-за учебы.
Research domain	Being unable to balance your research with home demands?	У Вас не получалось сбалансировать свою исследовательскую деятельность с домашними обязанностями.
	Finding it difficult to cover your basic living expenses?	Вы испытывали трудности с покрытием своих основных расходов на жизнь.
	Lacking confidence in your ability to conduct research to the necessary standard?	Вы не были уверены в своей способности проводить исследования в соответствии с необходимыми стандартами.
	Feeling disappointed in your own abilities as an academic researcher?	Вы чувствовали разочарование в своих собственных способностях в качестве ученого-исследователя.
	Feeling demotivated as you are not making the progress you had hoped for?	Вы ощущали демотивацию из-за того, что не добились прогресса, на который надеялись.
	Lacking belief in your ability to complete your PhD successfully?	Вы переставали верить в свою способность успешно завершить аспирантуру и защитить диссертацию.
	Lacking enthusiasm about your research?	Вы испытывали недостаток энтузиазма по поводу своей исследовательской деятельности.
	Lacking motivation to complete your PhD in a timely manner?	Вы испытывали недостаток мотивации для завершения аспирантуры и защиты диссертации в срок.
	Feeling 'trapped' in your area of specialisation?	Вы испытывали чувство, будто Вы 'заперты' в своей области специализации.
	Being discouraged to display initiative in your research?	Проявление Вашей инициативы в Вашей исследовательской деятельности не поощрялось.
Social domain	Feeling uninvolved with the wider research environment outside of your department?	Вы чувствовали себя не вовлеченными в более широкую исследовательскую среду вне своей аспирантской школы.
	Feeling isolated from other research colleagues in your department?	Вы чувствовали себя изолированными от коллег-исследователей из своей аспирантской школы.
	Feeling unable to confide in colleagues about problems?	Вы чувствовали, что не можете довериться коллегам и поделиться с ними проблемами.
	Not feeling part of a wider post-graduate community at the college?	Вы не чувствовали себя частью более широкого аспирантского сообщества университета.

(Continued)

Dimensions	English version	Russian back-translated version
Supervisor domain	Having insufficient feedback during your PhD to check progress?	Вы не получали достаточно обратной связи от своего научного руководителя для проверки прогресса во время работы над диссертацией.
	Feeling unsupported by your supervisor?	Вы не ощущали поддержку со стороны своего научного руководителя.
	Lacking practical guidance on designing and conducting your research?	Вы испытывали недостаток практических рекомендаций по разработке и проведению Ваших исследований.
	Not feeling able to ask for help from your supervisor?	Вы чувствовали, что не можете попросить своего научного руководителя о помощи.
	Feeling exploited by your supervisor?	Вы чувствовали, что Ваш научный руководитель Вас эксплуатирует.
	Feeling abandoned by your supervisor?	Вы чувствовали, что Ваш научный руководитель про Вас забыл.
University domain	Being frustrated with the college's administration systems?	Вы были недовольны административной системой университета.
	Being unclear about your entitlements? e.g. holiday	Вы испытывали неясность относительно своих прав. Например, выходных дней.
	Believing that the interests of PhDs are inadequately represented by union bodies?	Вы считали, что интересы аспирантов недостаточно представлены представительными органами, состоящими из студентов или сотрудников университета.
	Having to deal with too much paperwork and bureaucracy?	Вам приходилось иметь дело со слишком большим объемом документов и бюрократией в университете.
	Being unclear about college policies?	Вы испытывали неясность относительно политик, проводимых университетом в отношении аспирантов.
<b>Concerns for degree completion and future job prospects (7 items)</b>		
Preface	How stressed are you about the impact of Coronavirus (Covid-19) on the following?	Насколько Вы обеспокоены влиянием коронавируса (Covid-19) на следующие аспекты?
Degree completion	My exams and assessments	На Ваши экзамены и аттестации
	My ability to graduate and complete my dissertation on time	На Вашу способность завершить аспирантуру и защитить диссертацию в срок
	My ability to successfully defend my dissertation	На Вашу способность успешно защитить диссертацию
Job prospects	My grades	На Ваши оценки
	My employability	На Вашу возможность трудоустройства
	The wider economy Job prospects	На экономику в целом На Ваши карьерные перспективы
<b>Satisfaction with PhD studies (4 items)</b>		
Preface	How satisfied are you with your experience at your doctoral school at the university? Please rate the extent to which you agree with the following statements on a scale of 1 (totally disagree) to 5 (totally agree).	Насколько Вы удовлетворены своим опытом в аспирантуре университета? Пожалуйста, оцените степень Вашего согласия со следующими высказываниями по шкале от 1 (абсолютно НЕ согласен) до 5 (абсолютно согласен).
	Overall, my experience as a PhD student at university has been a positive one.	В целом, мой опыт в университете в качестве аспиранта можно назвать положительным.
	The PhD program at the university is fully meeting my expectations.	Программа аспирантуры, на которой я обучаюсь, полностью оправдала мои ожидания.
	If I could turn back the clock, I would still choose to do my PhD at the university.	Если бы я мог(ла) вернуться назад, я бы все равно принял(а) решение поступать в аспирантуру этого университета.
	I would recommend studying in the PhD program at the university.	Я бы порекомендовал(а) обучение в аспирантуре этого университета.