

RESEARCH AND DEVELOPMENT CAREER PLANS AND WORK-LIFE BALANCE – EVIDENCE FROM A SURVEY AMONG HUNGARIAN PHD STUDENTS⁹

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1. Introduction

Doctoral (PhD) work is a highly challenging endeavour, which tests students on various levels, overburdening their emotions, minds, finances, and the physical health (*Hadjioannou et al., 2007*). The students constantly deal with the situation of having inadequate time as they carry out various and often conflicting roles and obligations each of which demands consideration and time (*Haynes et al., 2012*). Therefore, the PhD students find it difficult to balance their personal lives and obligations with their academic responsibilities (*Brus, 2006*).

Kirchmeyer (2000) defined work-life as “achieving satisfying experiences in all life domains and to do so requires personal resources such as energy, time, and commitment to be well distributed across domains”. The European Observatory of Working Life defines work-life balance as “a term used to describe the level of prioritization between an individual’s work and personal life”. A perfect balance between work and life is achieved by an individual when his or her right to have a satisfactory personal and professional life is accepted as well as respected as the group or social norm – to the mutual benefit of the individual, business, and society.

Unlike students at graduation or post-graduation levels of education there is a great deal of diversity among the doctoral students. PhD students have had an extended education and have excelled at the academic work (*Holbrook et al., 2014*). Some of the students may be re-entering the academics after a protracted absence and most of whom would have been

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in some form of the employment during the intervening period. In lieu of the diversity of the circumstances, their perception of “work” will be shaped by different parameters including exposure to a research culture, professional and educational experience, personal/social objectives and familial obligations (*Barnett, et al., 2013; Edwards – Bexley – Richardson, 2011*).

Getting a PhD is generally regarded as a one-way ticket to a career in academics (*Rudd – Nerad, 2015*), and accordingly majority of the doctoral students have academic positions as their goal (*Curtin – Malley – Stewart, 2016*). With increasing number of doctoral students, getting the faculty positions becomes more and more difficult and as a result good deal of doctoral students are seeking careers outside the academics (*Allum – Okahana 2015*). In affirmation of this trend a study done by (*Golde – Dore, 2001*) indicated that only 63% of the doctoral students are actually interested in continuing in the academics and that there was a high dissonance between their goals, their training and what they actually obtained.

Historical research has tended to concentrate on the needs and the requirements of the institutions rather than the individual’s aspirations and expectations but there is a growing tendency to take that into account, too. These considerations include the research regarding the experiences, priorities and the relationship between the work and life of these students (*Cantwell et al., 2012*). One of the first major studies in the field is carried out by (*Ateş et al., 2011*) wherein doctoral students from 12 different countries were examined for their professional, personal and social conditions and the differences between the respective countries was also indicated.

In the context of Hungary, it has been posited that majority of society considers the importance of family-life as equal compared to paid work (*Pongrácz – Molnár, 2011*). Research on work-life balance (WLB) with regards to Hungarian doctoral students is sparse. Among the earliest research one may point to (*Fábri, 2008*) and (*Fináncz, 2007*). In a large-scale study (*Engler, 2013*) carried out on students revealed that a substantial part (40%) of the students were positively oriented towards family and were planning to enter into matrimony after the studies but every fifth student seemed to be career centred and sought to delay marriage until mid-thirties. A survey was conducted in 2018, in which 1535 Hungarian researchers were surveyed, and their situation, needs and difficulties were examined (*Alpár et al., 2019*). The results of this survey demonstrated that the second most important factor in career choice was existence of flexible working conditions and the possibility of work-life balance in the academic career.

As a direct predecessor of the present paper, we should mention the results of Boros (2018), who showed – analysing the same database used in this study – that although work-life balance was one of the less important motivating factors for applying for PhD training it was still ranked higher than financial benefits and job security in the public sector. He did also find that the importance of WLB varied greatly among students from different fields of science. Boros (2018) tested the connections between the relative motivational importance of WLB and research career plans, too, without finding any statistically significant relationship.

Considering the problems introduced above, we have derived the following two research questions:

RQ1: Are there statistically significant differences in the importance of the WLB in applying for PhD course between...

RQ1.1: *full-time and part-time students?*

RQ1.2: *students with and without work experience or not?*

RQ1.3: *students who plan to their career as a researcher and those who do not?*

RQ2: Differences in perceived balance among studies, family and leisure-time activities by

RQ2.1: *full-time and part-time students?*

RQ2.2: *students with and without work experience or not?*

RQ2.3: *students who plan to their career as a researcher and those who do not?*

2. Data and Methods

The study analyses data from a questionnaire survey conducted in the fall semester of the academic year 2018/19. The questionnaire included several questions from the EURODOC Survey (Ateş et al., 2011) and many from the WoLiBaX index (Kalveram, 2017). The present research does not analyse the whole questionnaire, only some of them related to our research. For a more detailed presentation of the questionnaire and the survey, see the study of Boros (2018).

The questionnaire items used in the current study were the following. To measure the subjective importance of different factors we asked: "What motivated you to apply for your current PhD course?"

In this question the respondents should spend 30 points on 9 alternative motivation factors (the minimum was 1 and the a maximum was 10 on each). The evaluable factors were:

- Expected increase in earnings after graduation
- The thrill of discovery, academic vocation
- Compatibility and balance between private life and work
- I would like to teach
- Pressure from parents, friends
- The prestige and recognition associated with a Ph.D.
- Allowances and discounts received during the course
- I wanted to increase my chances of finding a secure job in the public sector
- The social impact and usefulness of research work

To evaluate how activities connected to family, leisure, and PhD studies are affecting each other we employed the following questions from the WoLiBaX index (*Kalveram, 2017*):

- Because of the time I need to complete my course responsibilities, I often have to give up family activities.
- The time spent on my course assignments discourages me from providing for the household properly.
- I feel bad if I spend too much time on the course-related tasks and leave too little time for my family.
- When I get home from the course, I am often too tired to take part in family activities or fulfill my family responsibilities.
- After the course, I have little energy left to do things at home.
- The stress and anxiety arising from the course often conflicts with my family life.
- My course time is so flexible that it allows me to take care of my family responsibilities.
- Due to my course, I do not have enough time to engage in extra-curricular activities that I find pleasant and relaxing.
- My course-related activities take up too much of my time that I would love to spend with my friends.
- I do not have enough time for regular leisure activities (e.g. sports) due to the course.

- My course assignments take up so much of my attention that I cannot get them out of my mind in my spare time.
- After the course, I have little time for my hobbies and interests.
- Because of the pressure of the course, I am too worked up in my spare time to enjoy other things.
- My course time is so well organised that it allows me to pursue my hobbies and interests.
- I have to give up course-related activities because of my family responsibilities.
- Family needs make it difficult for me to devote enough time to the course.
- I could take longer days for the course if I had fewer family responsibilities.
- Things in my family life make it harder for me to focus on the course.
- During the course, family needs distract me.
- Because of my tasks at home, I am often tired during the course.
- My family gives me enough time off to do well on the course.
- I need so much time in my private life that I have too little time for the course.
- The time requirements of my personal responsibilities prevent me from completing my course-related tasks in a timely manner.
- Spending time with my hobbies often puts my course responsibilities at risk.
- During the course, I am often tired because of the things I do in my private life.
- Because of the stress in my spare time, I often have personal issues during the course.
- Things in my spare time make it difficult for me to focus on the course.
- The time requirements of my hobbies and interests are so flexible that it is possible to complete the course without problems.

However, the above questions were not entered the examinations in this form. First, we transformed them into three principal components (for all three principal components the Bartlett test's p value was < 0.001 , and the KMO test statistic was greater than 0,800). Due to the page limitations of

the current paper we do not publish the detailed statistics of the principal component analysis here.

The questionnaire was sent online (via Google Spreadsheet) to all full-time and part-time students of all doctoral schools of the University of Debrecen (the total headcount of PhD students at the time of the survey was 737). We have received answers from 139 full time and 50 part time students (thus the total response ratio was 25.64%, and the sample size is $N = 189$). 58.48% is the female ratio among the full-time respondents and 55.66% is among the part-time ones. The distribution of the sample by area of study is presented in *Table 1*. Response rates varied greatly across disciplines, thus our sample cannot be considered representative. However, it is not a requirement for the research questions either, because they do not ask about the population, but about the connections between variables.

Table 1 Number and proportion of respondents to the questionnaire

	Respondents (ca.)	Total headcount (ca.)	Response ratio (%)
Agricultural sciences	15	56	26.79%
Arts and humanities	27	141	19.15%
Medical and health sciences	57	265	21.51%
Social sciences	39	107	36.45%
Natural sciences	47	146	32.19%
Engineering science	4	22	18.18%
Total	189	737	25.64%

Source: Own research (2021)

Simple statistical tests (independent samples *t*-tests and principal component analysis) were applied to answer both research questions.

4. Results

In the first part of our analysis two-samples *t*-tests were conducted to find answer for RQ1.1, RQ1.2, and RQ1.3 (differences in the importance of the WLB in applying for PhD course between groups of PhD students). According to the results, in our sample the full-time students considered WLB significantly more important than the part-time subsample (see Table 2). We have also identified a significantly higher importance of the WLB factor for those respondents who did not work during their PhD studies compared to those who did (Table 3). At the same time the difference between those who planned and who did not plan a research career path was significant only at the 10% level (Table 4).

Table 2 Average difference in the importance of WLB between full-time and part-time PhD students

Full-/Part-time	N	Mean	SD	t
Full-time	139	3.58	2.33	-4.43***
Part-time	50	1.98	1.71	

Note: *** significant at the 1% level

Table 3 Average difference in the importance of WLB between PhD students who worked and who did not work during their PhD studies.

During PhD studies...	N	Mean	SD	t
Did/do not work	96	3.56	2.38	2.53**
Did/do work	93	2.73	2.13	

Note: ** significant at the 5% level

Table 4 Average difference in the importance of WLB between PhD students who planned a research career and who did not.

Researchers' career plans	N	Mean	SD	t
No	47	2.75	2.26	-1.68*
Yes	84	3.48	2.47	

Note: * significant at the 10% level

The second part of our examination tested the potential differences between the same three pairs of student-groups in the sense of how much study, family, and leisure activities (more accurately the time someone sacrifices for them) are affecting each other negatively.

As Table 5 informs us that the PhD studies' negative impact on family-life or on leisure time was not significantly different from those who had a job during their PhD years and those who did not. On the other hand, working while studying seems to make a difference in the negative effect of both family-life and leisure time on PhD studies (it increased the negative impact).

Table 5 Relationship between working while studying and negative interactions among PhD studies, family-life, and leisure time.

PhD studies' negative impact on...	Work while studying	Total sample		Full-time sub-sample	
		<i>N</i>	<i>t</i>	<i>N</i>	<i>t</i>
Family-life	No	96	0.38	91	1.10
	Yes	93		48	
Leisure-time	No	96	-0.05	91	0.65
	Yes	93		48	
The following factors' negative impact on the PhD studies		Total sample		Full-time sub-sample	
		<i>N</i>	<i>t</i>	<i>N</i>	<i>t</i>
Family-life	No	96	-4.23***	91	-3.18***
	Yes	93		48	
Leisure-time	No	96	-3.11***	91	-2.26**
	Yes	93		48	

Note: ** significant at the 5% level, *** significant at the 1% level

Table 6 shows a similar pattern for the comparison of part-time vs full-time students. There is no significant difference between them but part-timers feel more or stronger negative effects on their PhD studies originating from the two other spheres.

Table 6 Relationship between being a full- or part-time PhD student and negative interactions among PhD studies, family-life, and leisure time.

PhD studies' negative impact on...		Total sample	
		<i>N</i>	<i>t</i>
Family-life	Part-time	50	0.53
	Full-time	139	
Leisure-time	Part-time	50	-0.32
	Full-time	139	
The following factors' negative impact on the PhD studies		Total sample	
		<i>N</i>	<i>t</i>
Family-life	Part-time	50	2.49**
	Full-time	139	
Leisure-time	Part-time	50	2.13**
	Full-time	139	

Note: ** significant at the 5% level

Plans of a research career was unlike the previous two cases (see Table 7). Here, the effect on PhD studies was insignificant, but the effect of leisure time on PhD studies happens to be more negative for those not planning to become a researcher than for the others.

Table 7 Relationship between planning or not planning a research career and negative interactions among PhD studies, family-life, and leisure time.

PhD studies' negative impact on...	Research career	Total sample	
		<i>N</i>	<i>t</i>
Family-life	No	47	0.94
	Yes	84	
Leisure-time	No	47	2.30**
	Yes	84	
The following factors' negative impact on the PhD studies		Total sample	
		<i>N</i>	<i>t</i>
Family-life	No	47	0.81
	Yes	84	
Leisure-time	No	47	-0.31
	Yes	84	

Note: ** significant at the 5% level

5. Conclusions

Based on the statistical analyses above, we can summarize our conclusions as follows.

WLB is in general not among the most important factors during the decision process while applying for a PhD course. However, planning a research career seems to be connected with the motivational role: planning to be a researcher at the time of application is related to a higher motivational power of WLB. In addition to this, differences among/between the following groups of respondent were found to be convincing:

- fields of study (social-, agricultural-, natural sciences),
- full-time and part-time students,
- those who had a job during their studies.

Those perceived imbalance between their studies and their private life (the latter disturbs the previous one), who:

- were working during their studies,
- were taking part in part-time PhD programmes.

On the contrary, studies seem to disturb the leisure time more of those who are currently not planning to become a researcher than of those are planning it.

References

- Allum, J.- Okahana, H. (2015): Graduate enrollment and degrees: 2004 to 2014. Washington, DC: Council of Graduate Schools.
- Alpár, D. – Barnaföldi, G. G. – Déhány, É. – Kubinyi, E. – Máté, Á. – Munkácsy, B. – Neumann, E. – Solymosi, K. – Toldi, G. (2019): Fiatal kutatók Magyarországon – felmérés a 45 év alatti kutatók helyzetéről, karrierterveiről, nehézségeiről. In: Young Researchers in Hungary – A Survey on the State of Researchers Under the Age of 45. Magyar Tudomány, 180(7), p1064–1077
- Ateş, G. – Holländer, K. – Koltcheva, N. – Krstič, S. – Parada, F. (2011): Eurodoc survey I. The First Eurodoc Survey on Doctoral Candidates in Twelve European Countries. Descriptive Report, from http://eurodoc.net/oldwebsite/Eurodoc_survey_I_report_2011.pdf
- Barnett, J. – Cropley, B. – Hanton, S. – Fleming, S. (2013): Taking the plunge: Reflections on the decision to register for a doctorate. Journal of Hospitality, Leisure, Sport & Tourism Education, 13, p123–131
- Boros, J. (2018): Motivációs tényezők vizsgálata a PhD képzésre való jelentkezés esetén (Examination of motivational factors when applying for a PhD course). Gazdálkodástudományi Közlemények – A Debreceni Egyetem

Gazdálkodástudományi és Vidékfejlesztési Kar Tudományos Diákköri tevékenységének eredményei. 8(1), p19-25

Brus, C. P. (2006): Seeking balance in graduate school: A realistic expectation or a dangerous dilemma? *New Directions for Student Services*, 115, p31-45

Cantwell, R. – Scevak, J. – Bourke, S. – Holbrook, A. (2012): Individual Differences that Affect the Quality of Learning in Doctoral Candidates.” In *Enhancing the Quality of Learning: Dispositions, Instruction, and Learning Processes*, (Lawson, M. – Kirby, J., ed.), p93-114 New York: Cambridge University Press

Curtin, N. – Malley, J. – Stewart, A. J. (2016): Mentoring the next generation of faculty: Supporting academic career aspirations among doctoral students. *Research in Higher Education*, 57(6), p714-738

Edwards, D. – Bexley, E. – Richardson, S. (2011): Regenerating the academic workforce: The careers, intentions and motivations of higher degree research students in Australia: findings of the National Research Student Survey (NRSS). Australian Council for Educational Research (ACER), from https://research.acer.edu.au/higher_education/23

Engler, A. (2013): Students with Small Children in Higher Education. *Journal of Social Research & Policy*, 4 (1), p109-120

Fábri, I. (2008): Doktoráltak a munkaerőpiacon. A PhD Fokozat Szerepe a Szakmai Karrierépítésben. In: Fábri I. – Horváth T. – Kiss L. – Nyerges A. (ed.): *Diplomás pályakövetés I. Hazai és nemzetközi tendenciák*. Educatio Társadalmi Szolgáltató és Közhasznú Társaság–OFIK, p83-98

Fináncz, J. (2007): Doktoranduszok szakmai és magánéleti tervei. (Private life and career plans of PhD students). *Educatio*, 16(3), p487-496

Golde, C. M. – Dore, T. M. (2001): At cross purposes: What the experiences of today's doctoral students reveal about doctoral education, from <http://phd-survey.org/report%20final.pdf>

Hadjioannou, X. – Shelton, N. R. – Fu, D. – Dhanarattigannon, J. (2007): The road to a doctoral degree: Co-travelers through a perilous passage. *College Student Journal*, 41(1), p160-177

Haynes, C. – Bulosan, M. – Citty, J. – Grant-Harris, M. – Hudson, J. – Koro-Ljungberg, M. (2012): My world is not my doctoral program... or is it?: Female students' perceptions of well-being. *International Journal of Doctoral Studies*, 7(1), p1-17

Holbrook, A. – Shaw, K. – Scevak, J. – Bourke, S. – Cantwell, R. – Budd, J. (2014): PhD candidate expectations: Exploring mismatch with experience. *International Journal of Doctoral Studies*, 9, p329-346

Kalveram, A. B. (2017): Work-Life-Balance in einer sich wandelnden Welt. Entwicklung und Validierung des Work-Life-Balance Index (WoLiBaX) zur Erfassung der Interaktionsprozesse zwischen Arbeit, Familie und Freizeit. Asanger, Kröning, p613

Kirchmeyer, C. (2000): Work-life initiatives: Greed or benevolence regarding workers' time? In *Trends in organizational behavior*, Vol. 7: Time in organizational behavior, p79-93. New York, NY, US: John Wiley & Sons Ltd.

Pongrácz, T. – Molnár, S. (2011): Nemi szerepek és a közvélemény változásának kölcsönhatása.' (Interactions of Gender Roles and Public Opinion). In Nagy, I., & Pongrácz, T. (Eds). Szerepváltozások. Jelentés a nők és férfiak helyzetéről (Changing Roles. Report on Women and Men), p192–206. Budapest, Hungary: TÁRKI - Nemzeti Erőforrás Minisztérium.

Rudd, E. – Nerad, M. (2015): Career preparation in PHD programs: Results of a national survey of early career geographers. *GeoJournal*, 80(2), p181–186