

Should I stay or should I go? Turnover intentions of PhD students in Flanders

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TURNOVER INTENTIONS

In ECOOM-briefs 12 and 13 we discussed two specific aspects of the well-being of PhD students in Flanders, namely their mental health and overall job satisfaction (see ECOOM-website). We found that 1 in 3 PhD students is at risk of having or developing a mental disorder (especially depression), whilst 4 in 5 PhD students indicate to be 'quite satisfied' or 'very satisfied' when it comes to their overall job satisfaction. In this current brief we focus on yet a different aspect of well-being, namely turnover intentions. As previously discussed in ECOOM-brief 13, the different aspects point at different parts of well-being and they are often influenced or caused by different factors. Hence, the correlation between several aspects of well-being is often less strong than expected (see amongst others Griffeth, Hom & Gaertner, 2000; Faragher, Cass & Cooper, 2005; Yang et al, 2008).

There are several types of turnover intentions. They can concern the sector (e.g. intention to leave the university for the industry), the organization (e.g. wanting to move to a different university), the profession (e.g. wanting to stop academic work) or the job responsibilities within the same profession (e.g. switching from research assistant to fulltime project-based research). Turnover intentions often lead to actual turnover, although that is not always the case. A meta-analysis on the antecedents of turnover shows a mean correlation of $r=0.32$ between withdrawal cognition and actual turnover (Griffeth, Hom & Gaertner, 2000).

Until today, little is known about the actual turnover and the turnover intentions of PhD students in both Flanders and abroad. In 2013, ECOOM did conduct a study of the

actual turnover of the total population of junior researchers in Flanders. Most junior researchers, but not all, are also PhD students. The study found that 18.5% of those who had started research in the academic year 2010-2011 had left the university. Out of all the junior researchers who had begun in 2004-2005, 68.5% had completed their PhD in 2013 (ECOOM, 2015).

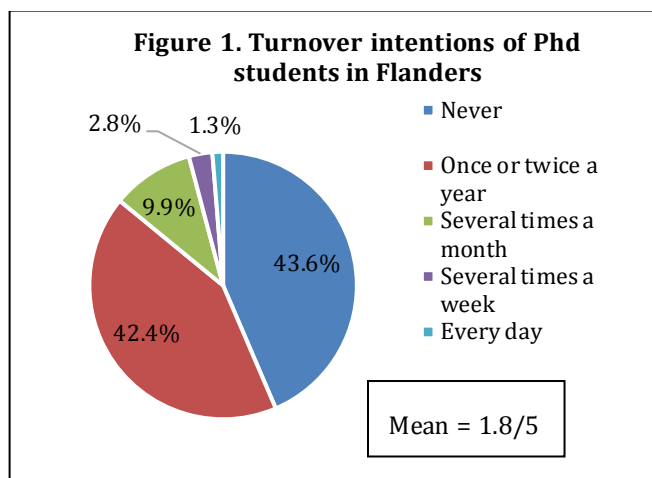
In this current study, we will not be looking at the actual turnover of PhD students in Flemish Universities. Rather, we will be focusing on the PhD students' intention to stop conducting research. More specifically we postulate three research questions: (1) *How often do PhD students in Flanders consider quitting their research?*, (2) *Does this compare to other groups on the labour market?* and (3) *Are work organization and organizational policies in Flemish universities associated with the turnover intentions of PhD students?*

We address our three research questions using data of PhD students (N=3.659) collected with the Survey of Junior Researchers, which was conducted by ECOOM - the Centre for R&D Monitoring of the Flemish Community - in 2013 in the total population of junior researchers in all five universities in Flanders (see ECOOM-brief 8 on ECOOM-website).

HOW OFTEN DO PHD STUDENTS CONSIDER QUITTING THEIR RESEARCH?

In 2013 we asked PhD students in Flanders "Have you considered giving up your research work?" There were five answers: "never", "once or twice a year", "several times a month", "several times a week" and "every day".

Figure 1 shows that 43.6% of PhD students never considers ending their research, whilst 42.4% considers quitting at least once or twice a year. 9.9% thinks about discontinuing their research several times a month and 4.1% thinks about it several times a week or even daily.



IN COMPARISON WITH...

How do turnover intentions of Flemish PhD students compare to those of other population groups on the Flemish and Belgian labour market? Are they higher, lower or similar? And what in comparison with PhD students outside of Flanders?

Other studies focus on different types of turnover intentions and take into account different timeframes (e.g. the past year versus the next three months). As a result, answering this seemingly easy question is not evident. A 2014 study on the Flemish Governments staff showed that when asked "I recently took steps to change jobs or I have actual plans to do so in the future" 31% had answered 'yes'. This number has not changed since 2012. Management reported slightly lower turnover intentions at 26%. A study by Securex (2014) on the turnover intentions in the Belgian private sector, shows that in 2013 (the year in which the Survey of Junior Researcher was conducted) 13% of highly educated employees indicated having plans of changing employers in the short-term. When looking at voluntary turnover, it appears to have been decreasing up till 2013: in 2011 8.82% of employees in the Belgian private sector quit their job, 7.39% did so in 2012 and in 2013 the percentage dropped even further to 7.01%. Studies repeatedly show that voluntary turnover rates are lower at times of crisis than at times with a more positive outlook: when there is a lot of insecurity and instability on the labour market, employees will take less risks and hold on to their job longer. 59% of highly educated people were optimistic about their chances of finding an equally good job elsewhere. Yet, 1 in 3 was not convinced

of their chances on the current labour market (Securex, 2014).

No exact numbers are known about the turnover intentions of people who have finished their PhD. We do however know something about the actual turnover of PhDs in the Belgian labour market thanks to research conducted by the OECD (2013): between 2000 and 2009 15.4% changed jobs. This percentage is a lot lower than in most European countries. Almost 3 in 5 PhD graduates changed jobs in Germany, Denmark, Iceland and Poland. The only European country to report a lower turnover rate than Belgium was Romania, with 12.8%.

Lastly, how does this compare to the turnover intentions of PhD students outside of Flanders? Little empirical research is available on the turnover intentions of PhD students and their reasons to leave university. Although it is hard to pin point an exact turnover rate, American studies have been indicating for decades that 40 to 60% of PhDs are never completed (Golde, 2005; Council of Graduate Schools, 2016). The numbers vary greatly from discipline to discipline. A recent study in England points out that of those students who started their PhD in the academic year 2010-2011, 73% was expected to graduate within 7 years (Times Higher Education, 2016). In the Netherlands a stable pattern has been established over the years, with 3 in 4 PhD being completed (de Goede, Belder & de Jonge, 2013).

WORK ORGANIZATION, ORGANIZATIONAL POLICIES AND TURNOVER INTENTIONS

Multivariate logistic regressions suggest there is an association between the turnover intentions of PhD students and the work organization and organizational policies of the university. In Table 1 turnover intentions are considered to be present when PhD students indicate thinking about giving up their research work daily, several times a week or several times a month.

Table 1 shows significantly higher risks of turnover intentions ($OR > 1$) with PhD students who experience (1) high job demands (such as pressure to publish and task load) (2) team conflict and (3) work-life imbalance (work demands interfere with the PhD students' private life).

The thought of giving up their research work, is significantly less present ($OR < 1$) in PhD students (1) with a high amount of job control (meaning more job variation, job autonomy and craftsmanship), (2) in the execution and finishing phase of their PhD in comparison to those in the planning phase and (3) with an inspiring promotor. Lastly PhD students (4) with an interest in an

academic career and (5) with a positive perception of the added value of their PhD on the labour market also report lower turnover intentions.

Finally, Table 1 shows that the turnover intentions of PhD students in Flanders do not differ according to scientific discipline, university or type of funding. It does not matter either how many promoters are involved in the PhD, nor whether the (main) promotor is male or female. Neither does it matter when the research team consists mainly of men or women or consists of a more gender equal mix. The amount to which team decision-making is a more closed or open (or democratic) process does not have an impact on turnover intentions either. Considering their promotor to be more or less of an authoritarian or laissez-faire leader – as opposed to being an inspirational leader – has no significant correlation with the PhD students' intent to give up their research work. The same goes for whether or not they think they make a chance at an academic career. Lastly, Table 1 suggests there are no differences between men and women and that age has no impact on turnover intentions. Being in a relationship or having children is not associated with PhD students' turnover intentions either, not even when they experience life-work conflict (when family demands interfere with work).

DISCUSSION

Ending a PhD prematurely is the result of a complex process of decision-making where personal, professional and contextual factors play a role. Gaining insight into the reasons and patterns of giving up research work early is a critical step in developing effective and efficient PhD programmes.

Actual turnover comes with high economical and psychosocial costs. Economically speaking, turnover means a loss of recruiting and training investments to institutions, as well as additional costs because of the training period of the new employee. Furthermore, there is a loss of time, human capital and knowledge. Turnover can be frustrating and demoralising to both the PhD student and the promotor but also to the colleagues, not in the least because projects and tasks need to be transferred from one person to the other, with decreasing research productivity and increasing pressure as a consequence.

Usually a broad range of thoughts and emotions precede the decision to give up research work, resulting in a variety of motives. Up to today, little is known about the prevalence, nature and underlying or consequential motives of turnover intentions. We do know however

that the ideas and feelings of giving up are not necessarily straight-forward: intentions to leave and stay often interchange, and are sometimes brought about by sudden events (Holmton et al, 2005). Performance research shows that employees who intend to leave their organization often perform worse and show lower organizational citizenship behaviour. When an employee shows organizational citizenship behaviour, he or she does more than what is formally expected and spontaneously picks up positive initiatives to improve the organization's functioning. Organizational citizenship behaviour has a strong impact on job satisfaction, stress-experience and all kinds of work-related behaviour (such as working with colleagues, going the extra mile during peak moments and less absenteeism).

Based on the Survey of Junior Researchers 2013, conducted at five Flemish universities, we found that 86.0% of PhD students never, or at the most twice a year, considered giving up their research work. 14% showed stronger turnover intentions, going from thinking about quitting daily to several times a week or month. No differences were found between male and female PhD students. Some characteristics of the work- and organizational context of universities are associated with less thoughts of quitting research, while others are associated with increased turnover intentions.

Table 1. Predictors of risk of turnover intentions in PhD students, Flanders 2013 (N=3659): odds ratio (OR), 95% confidence intervals (95% CI), level of significance

	OR	95% BI	Sign
Constant	.887		n.s.
Work context			
Job demands	1.811	(1.316-2.493)	***
Job control	.711	(.523-.967)	*
Scientific discipline			n.s.
Sciences (ref)	-	-	-
Biomedical sciences	.943	(.654-1.359)	n.s.
Applied sciences	1.085	(.738-1.595)	n.s.
Humanities	.778	(.476-1.270)	n.s.
Social sciences	1.200	(.826-1.742)	n.s.
Type of appointment			n.s.
Research assistant (ref)	-	-	-
Scholarship	1.260	(.888-1.789)	n.s.
Research project	1.263	(.881-1.881)	n.s.
No funding by university	1.237	(.774-1.979)	n.s.
Other funding resources	1.125	(.635-1.993)	n.s.
Don't know	1.626	(.881-3.000)	n.s.
PhD phase			n.s.
Initiating (ref)	-	-	-
Executing	.734	(.543-.992)	*
Finishing	.666	(.459-.965)	*
Number of promotors			
One (ref)	-	-	-
None or more than one	.945	(.748-1.195)	n.s.
Gender of (main)promotor			
Male (ref)	-	-	-
Female	.935	(.701-1.247)	n.s.
Leadership style: inspirational	.732	(.658-.815)	***
Leadership style: autocratic	.952	(.854-1.060)	n.s.
Leadership style: laissez-faire	1.089	(.992-1.197)	n.s.
Much interest in an academic career	.369	(.291-.469)	***
Perception of high chance of an academic career	1.152	(.910-1.460)	n.s.
Positive perception of career outside academia	.657	(.569-.758)	***
Organizational context			
KU Leuven (ref)	-	-	n.s.
Ghent university	1.076	-	-
Antwerp university	.878	(.825-1.405)	n.s.
Free university Brussels	1.039	(.588-1.311)	n.s.
Hasselt University	1.248	(.716-1.508)	n.s.
Team gender composition		(.729-2.135)	n.s.
Balanced gender composition (ref)	-	-	n.s.
Only males, or large majority is male	.977	-	-
Only females, or large majority is female	1.024	(.743-1.285)	n.s.
Team conflict	1.206	(.737-1.423)	n.s.
		(1.028-1.416)	*
Closed team decision-making	1.059	(.918-1.220)	n.s.
Family work conflict	1.072	(.930-1.235)	n.s.
Work family conflict	1.248	(1.068-1.458)	**
Sociodemographics			
Female	1.126	(.880-1.441)	n.s.
Age	.995	(.963-1.029)	n.s.
Partner	.862	(.667-1.114)	n.s.
Children	1.051	(.717-1.541)	n.s.
Model fit Turnover intentions:			
LR = 389.328 df = 35 p<0.001 Nagelkerke R ² = 0.217			

ref=reference category n.s.=not significant
 *=p<0.05 **=p<0.01 ***=p<0.001

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