

**The influence of the organisational culture of individual excellence
in academia on work engagement and turnover intentions of
early-career academics: a mixed-method approach**

By

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Abstract

Over the last years, the well-being of early-career academics is declining. At the same time, a culture of individual excellence has become the norm in academia. This research focuses on the consequences of a culture of individual excellence on the work engagement and turnover intentions of early-career academics. Conversely, it focuses on the influence of a high cohesive and participative culture on the work engagement and turnover intentions of early-career academics. Subsequently, using an mixed method approach with an exploratory sequential design, two studies were conducted. A longitudinal Study 1 (quantitative; N = 181) showed that a culture of individual excellence does not lead to lower work engagement or higher turnover intentions. However, it showed that high participation and supervisor support had a positive influence on work engagement. The second qualitative interview study (N = 8) elaborated and explained the results by showing that the ambition of early-career academics may be a crucial factor in perceiving a culture of individual excellence. Moreover in Study 2, the early-career academics mentioned two improvements that would help to improve the organisational culture in academia: re-evaluation of the work time in education and re-evaluation of the assessment system. Hence, a decrease in pressure on the research output and a fair representation of work hours for teaching can establish a healthier and sustainable organisational culture.

Keywords: Organisational culture, individual excellence, academia, peer cohesion, participation, supervisor support, early-career academics.

Introduction

Over the last few years, many newspaper articles were published about (early-career) academics who are suffering from high work pressure and high pressure to publish (Veldhuis, 2019). Complementary to the newspapers, researchers have recently conducted a survey amongst a network of early-career academics which showed that early-career academics often feel obliged to work long hours to reduce job uncertainty and to increase productivity (Susi, Shalvi, Srinivas, 2019). At the same time, burnout rates among academics are increasing, most likely due to the significant stress, limited academic support and mentoring, and high workloads (Salami, 2011; Harwick, 2011; Austin, Sorcinelli and McDaniels, 2007).

One factor that may contribute to early-career academics' high levels of stress and burnout is the organisational culture of individual excellence. Organisational culture is defined as shared assumptions, values and norms which describe how the organisation solves problems and teaches newcomers how to behave (Schein, 1990; Cummings & Worley, 2005). Researchers have noticed how individual excellence has become the primary driver in the academic culture (Borum & Hansen, 2000; Deem, 2009). The individual excellence in academia is mainly assessed with criteria such as high research productivity, competitive grant writing, high citation indexes, many internationally peer-reviewed publications, and membership of prestigious editorial boards (Basu, 2006; Van den Brink & Benschop, 2012).

The consequences of the individual excellence culture are represented in the employee turnover (intentions) of academics. Turnover intention is defined as a conscious and deliberate wilfulness to leave the organization (Tett & Meyer, 1993). While the amount of early-career academics that obtained a doctorate in the Netherlands has almost doubled between 1990 and now, only 30% of the early-career academics land a position within the university (CBS Statline, 2020; Koier & de Jonge, 2018). Because of the limited positions in academia, early-career academics have to either climb their way to the top of a very competitive system or leave (up-or-out system).

Similarly, the perceived organisational culture influences the work engagement of early-career academics (Brenyah & Darko, 2017). Work engagement is defined as a positive, affective-emotional state of fulfilment that is characterised by vigour, dedication and absorption (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Subsequently, research showed that lower work engagement results in higher turnover intentions (Du Plooy & Roodt, 2010). Therefore, the perceived organisational culture in academia changes the work engagement of early-career academics, which alters their turnover intentions.

Conversely, some cultural dimensions are the opposite of a culture of individual excellence. For instance, organisational cultures that are highly collaborative or participative may elicit higher job commitment, satisfaction and productivity (Bhatti & Qureshi, 2007). Research already showed the positive impact of cohesive teams and participation in decision-making on work engagement of employees (Yoerger, Crowe and Allen, 2015). Similarly, a meta-analysis showed that a participative culture is negatively related to turnover intentions (Griffeth, Hom and Gaertner, 2000).

Besides the organisational culture, research showed other factors buffer against negative work outcomes of a culture of individual excellence. For instance, social support has first been identified as a buffer in the 1980's in helping individuals cope with work stress and the likelihood that work demands are perceived as overloading (House, 1981; Wells, 1982). In present-day, social support, specifically supervisor support, remained a relevant buffer against work demands in organisations (Salami, 2011; Kim, Hur, Moon & Jun, 2017). For example, Salami (2011) showed the buffering effect of social support on the heavy workload, working under pressure and stress among educational lecturers. In academia, supervisor support is especially important as early-career academics are highly dependent on their supervisor to proceed in their career (Naezer, Van Den Brink & Benschop, 2019).

This research aims to provide insight in how parameters indicative of a culture of individual excellence in academia may contribute negatively to early-career academics' levels of work engagement and turnover intentions. In contrast, this research also investigates parameters indicative of a cohesive and participative culture that are expected to increase work engagement and decrease turnover intentions. Lastly, the role of supervisor support is investigated in buffering the negative effects of the individual excellence culture on academics' work engagement. Hence, the research question is the following: *What is the influence of perceived organisational culture of individual excellence on turnover intentions of academics and is this process mediated by work engagement?*

How Organisational Culture Affects Work Engagement Among Early-Career Academics

Many models on organisational culture were developed in the past decades, from Hofstede's (1980) six dimensions for cross-cultural values to Schein's (1990) iceberg to House's (2001) GLOBE project. In the context of academia, a model that was used to define academic culture is the Competing Values Framework (CVF) by Quinn and Rohrbaugh (1981). Van Vianen and Fisher (2002) relied on four elements of the CVF to define organisational

culture in academia, namely *work pressure, competition, peer cohesion* and *participation*. Work pressure and competition are related to the culture of individual excellence in academia, while peer cohesion and participation might be perceived as the antithesis of the individual excellence culture.

A culture of work pressure is defined as tension being felt by multiple individuals because of their work-related tasks (Roe & Zijlstra, 2000). A culture of competition is characterised by a norm of rivalry between two or more parties (Fletcher & Nusbaum, 2010). Peer cohesion in organisational culture is reflected in the tendency of the group to stick together and remain united in the pursuit of its instrumental objectives (Carron & Brawley, 2000). Participation in organisational culture is defined as whether employees are involved or can influence the decision-making (Wagner, 1994). In this research, it is expected that these four elements of the organisational culture in academia have an influence on turnover intentions of early-career academics via work engagement.

First, research increasingly focuses on how a culture of individual excellence negatively impacts work engagement among academics (Austin et al., 2007). McMurray and Scott (2013) investigated the determinants of organisational culture for academia. They observed that the work pressure on academics to operate as individuals to publish and maintain their own materials for the courses that they teach, drives them towards individualism rather than to organisational commitment. In the same way, Salami (2006) showed that university lecturers deal with a high work pressure and heavy workload. In this research, it is expected that a culture of high work pressure negatively affects the work engagement of early-career academics. In support of this argument, Kumar and Sia (2012) showed that there is a negative relationship between work pressure and various components of work engagement. By the same token, Spiegelaere, Gyes, Witte and Hootegem (2015) concluded that work pressure negatively influences work engagement in the private sector. Taken together, it is expected that a culture of high work pressure negatively influences work engagement.

Secondly, in the current research it is expected that a culture of competition negatively influences the work engagement of academics. In support for this argument, research by Carson and colleagues (2013) showed that lower work engagement is a direct result of overestimation of success chance of receiving funding proposals, manuscripts and promotion requests. This happens frequently as approval rates of research funding proposals has been around the 20% in the past five years (Rathenau Instituut, 2020). As the rewards are often not honoured, the work engagement of early-career academics can decline. In similar vein, Allen and Baron (2004) showed that a highly competitive culture among law school students was associated with

deleterious effects: decline in life satisfaction, wellbeing, intrinsic motivation and values. Similarly, research showed that high levels of competition can lead to stress and eventually burnout (Birkinshaw, 2001). Taken together, it is expected that a culture of high work pressure and high competition negatively influences the work engagement of early-career academics:

Hypothesis 1: The stronger the early-career academics perceive their organisational culture as high in work pressure and high in competition, the lower work engagement will be.

Opposite from the individual excellence culture with high work pressure and competition that negatively influence work engagement, a cohesive and participative culture is expected to positively influence work engagement. Peer cohesion was previously studied with newcomers in an organisation. Newcomers perceiving a less inclusive culture were less satisfied and less committed to the organization and showed higher turnover intentions than those experiencing higher degree of inclusiveness (Van Vianen & Prins, 1997). In similar vein, Kumar and Sia (2012) examined the associations between team level peer cohesion and employee engagement. Employee engagement, similar to work engagement, also includes the relationship with the organisation. They found that peer cohesion is positively related to various components of work engagement. In addition to the previous study, teams that are characterised with high cohesion score significantly higher on work engagement than teams that are characterised with low cohesion (Rodrigues-Sanches, Devloo, Rico, Salanova, Anseel, 2017). Although peer cohesion was extensively researched on team level, limited articles focussed on cohesive cultures. Nevertheless, it is predicted that the positive influence of team cohesion on work engagement is similar as the positive influence of cohesive cultures on work engagement. Taken together, it is expected that a culture with high peer cohesion results in higher work engagement.

Similar to peer cohesion, it is expected that a highly participative culture has positive effects on work engagement. Highly participative cultures enable employees to influence certain decisions, rather than solely asking them for their opinions (Martins, Pundt, Horsmann & Nerdinger, 2008). Previous research showed that employee participation had positive effects on employee commitment, job satisfaction and to a lesser extend also on employee productivity (Bhatti & Qureshi, 2007). Similarly, Yoerger, Crowe and Allen (2015) concluded that employee participation in decision-making is positively related to work engagement. Taken

together, it is hypothesized that a highly participative culture positively influences work engagement, leading to the second hypothesis.

Hypothesis 2: The stronger the early-career academics perceive their organisational culture as high in peer cohesion and high in participation, the higher work engagement will be.

Consequences of Lower Work Engagement on Early-Career Academics' Turnover Intentions

It is expected that lower work engagement as a consequence of a culture of individual excellence in academia results in higher turnover intentions of academics. Schaufeli and Bakker (2004) state in their Job Demands-Resources model that lower work engagement results in higher turnover intentions. They substantiated this assumption using four independent samples that showed a negative effect of work engagement on turnover intentions (Schaufeli & Bakker, 2004). Similarly, Du Plooy & Roodt (2010) showed in a predictive model that work engagement is negatively related to turnover intentions. Likewise, a meta-analysis showed that work engagement is negatively correlated to actual employee turnover (Harter, Schmidt and Hayes, 2002).

Alternatively, higher work engagement as a consequence of a participative and cohesive organisational culture can result in lower turnover intentions. Saks (2006) showed that employees who are more engaged and more trusting in their employer report positive attitudes and lower intentions to leave the organisation. In addition, work engagement proved to be related to job retention in engineering (Buse and Bilimoria, 2014). Job retention being the counter of employee turnover. In sum, it is expected that lower work engagement as a result of an individual excellence culture results in higher turnover intentions among early-career academics. Similarly, it is expected that higher work engagement as a result of a participative and cohesive culture results in lower turnover intentions, leading to the third and fourth hypotheses.

Hypothesis 3: Early-career academics' lower work engagement due to high work pressure and competition in their organisational culture, increases their turnover intentions in academia.

Hypothesis 4: Early-career academics' higher work engagement due to high peer cohesion and participation in their organisational culture, decreases their turnover intentions in academia.

The Buffering or Facilitating Role of Supervisor Support

Supervisor support refers to the degree to which supervisors value the contributions and care about the well-being of the subordinate (Rhoades & Eisenberger, 2002). Supervisor support, part of organizational support, is associated with work engagement. Rich, Lepine and Crawford (2010) found significant positive relationships between organizational support and work engagement. Similarly, a study of academic staff in Jordan showed that social support, including supervisor support, is positively associated with work engagement (Alzyoud, Othman & Isa, 2015). Likewise, Smith (2005) found that supervisor support was significantly and positively associated with job retention. Based on the studies above, it can be concluded that the supervisor support is positively associated with work engagement and negatively associated with turnover intention.

In addition, supervisor support is also related to the different dimensions of organisational culture. For instance, Steinhardt and colleagues (2003) researched the relationship between peer cohesion and supervisor support on job satisfaction. They concluded that supervisor support and peer cohesion are highly significantly related. On the other side of the coin, a study on Norwegian female managers showed that work pressure was negatively related to supervisor support (Richardson, Burke & Mikkelsen, 1999). Hence, it can be concluded that different dimensions of organisational culture are also associated with supervisor support.

Regarding the current study, it is expected that supervisor support can buffer against the lower work engagement due to a highly competitive and high work pressure culture. This is in line with the Job Demands-Resources model which proposes that job resources (e.g. supervisor support) buffer against the negative effects of job demands (e.g. work pressure, competition) on work engagement (Bakker & Demerouti, 2007). Empirical evidence showed the influence of job demands, like work pressure and competition, results in higher work engagement when supervisor support is high (Rai, Ghosh, Chauhan, & Mehta, 2015). Similarly, in healthcare, supervisor support buffered the high job demands on work engagement (Orgambidez-Ramos & Almeida, 2017). It is expected that the same buffering effect of supervisor support on work pressure and competition takes place on an organisational level. Hence, supervisor support buffers against highly competitive and work pressure cultures.

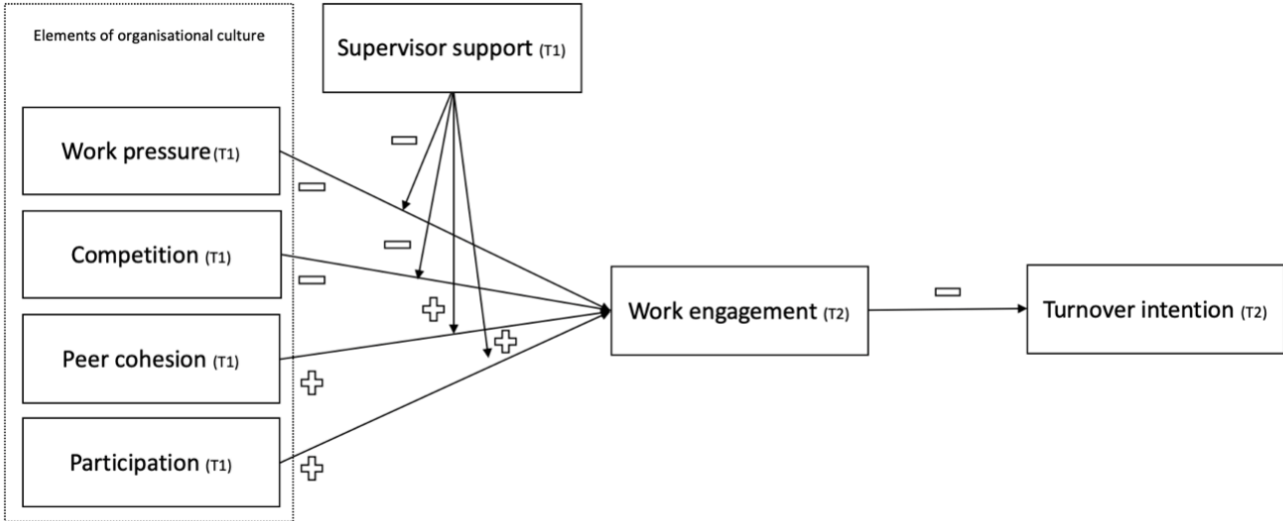
Likewise, it is expected that supervisor support can have a strengthening role on cohesive and participative cultures on work engagement. In support of this statement, Yoerger and colleagues (2015) researched the influence of supervisor support on the relationship between a participative culture on work engagement. They concluded that the positive relationship between participation and work engagement is stronger when supervisor support is high. Limited empirical evidence focusedd on the facilitating role of supervisor support on cohesive cultures and work engagement, however, supervisor support, peer cohesion and work engagement are all positively correlated to each other (Kumar & Sia, 2012). Therefore, it is expected that supervisor has the same facilitation function on peer cohesion as in participation, leading to the following hypothesis and research model displayed in Figure 1.

Hypothesis 5: The negative effects of organisational cultures high in work pressure and competition on work engagement and turnover intentions subsequently, are buffered by supervisor support; strong supervisor support negates the negative effects of work pressure and competition on work engagement.

Hypothesis 6: The positive effects of organisational cultures high in peer cohesion and participation on work engagement and turnover intentions subsequently, are facilitated by supervisor support; strong supervisor support enhances the positive effects of peer cohesion and participation on work engagement.

Figure 1

Conceptual model with hypothesized relationships



Current Research

The current research takes a mixed-method approach to investigate the impact of the organisational culture on work engagement and turnover intentions among assistant professors in academia. Using an exploratory sequential design, first a quantitative survey was administered in two subsequent years (2018 and 2019) among early-career academics at a Dutch university (Schoonenboom & Johnson, 2007). The goal was to test the relationships between variables in the model depicted in Figure 1. Based on these quantitative results, in 2020 a qualitative study was conducted among the same target group based on eight in-depth semi-structured interviews to zoom in specifically on the perceived organisational culture and its consequences. By using a mixed-method approach, convergence and correspondence was sought between the quantitative and qualitative data of the academics. Additionally, the qualitative results aimed to elaborate, enhance and clarify the quantitative results (Schoonenboom & Johnson, 2007).

Study 1

Method

Participants and Design

In a longitudinal study, an online survey was distributed in two subsequent years (T1: 2018 and T2: 2019) among assistant professors at Utrecht University. The longitudinal design offered the opportunity to determine patterns over time. Hence, it was possible to infer causality between organisational culture in academia, work engagement and turnover intentions.

At T1 in 2018, $N = 910$ assistant professors were approached to fill out a questionnaire. In total, $N = 449$ participants responded (initial response rate of 49 %). From all respondents, 1 was excluded because of no informed consent, 3 were excluded because they want to retract their data from the survey, 74 were excluded because of not fulfilling the full questionnaire. At T2 in 2019, the same 910 assistant professors were approached. 350 assistant professors returned the questionnaire (initial response rate of 38%), 60 participants were excluded for not fulfilling the full questionnaire. In total, 181 matched pairs were used for data analyses in this study ($N = 112$ women and $N = 69$ men). The average age of the participants was $M = 41.19$ years old ($SD = 7.85$). To check whether the sample size was large enough to detect significant relationships between variables, a sensitivity analysis was conducted. The statistical program G*Power was used to conduct a sensitivity analysis (Faul, Erdfelder, Lang & Buchner, 2007). A linear multiple regression with a fixed model and R^2 increase was used with a sample size of 181, a power of ,80 with 5 tested and 10 (including covariates) total predictors. The sensitivity

analysis concluded that the effect size $f_2 = .098$ could be found. This means that with the current sample size, small to medium effect sizes should be detectible.

Procedure

At T1, all 910 assistant professors working at a large Dutch university were invited by e-mail to participate in an online questionnaire. The questionnaire was available in both Dutch and in English language. The participants were ensured that the data were collected anonymously and confidentially. The data could not be traced back to an individual level. In the end, participants had the opportunity to retract their data from the survey. To prompt the participants to fill in the full survey, six gift cards of €50 could be won. The survey took 10-15 minutes to complete, and it could be filled in on smartphones, tablets and computers (see Appendix 1). The questionnaire also included questions that go beyond the scope of this study¹. This data collection was part of a study on how agentic work culture affects careers in academia (unpublished). First, the participants were asked to score their department based on the cultural dimensions. Thereafter, the participants had to answer questions about the supervisor. Lastly, they had to answer questions about the work engagement and intentions to stay in academia.

Instruments

To measure organisational culture, the four constructs (work pressure, competition, peer cohesion and participation) were measured with 29 items in total, adapted from Van Vianen and Fisher (2002). The participants were asked to rate their department based on the items that can be found in Appendix 1. They could answer on a 7-point Likert scale, 1 = not at all applicable, 7 = completely applicable. *Work pressure* was measured by six items (e.g. “There is performance pressure”). *Competition* was measured by six items (e.g. “Mutual competition is allowed”). *Peer cohesion* was measured by ten items (e.g. “There is a collegial, supportive atmosphere”). *Participation* was measured by six items (e.g. “Employees are encouraged to contribute to decision-making”). A factor analysis for all the variables measuring organisational culture was conducted to test whether the items match the subconstruct. The factor analysis showed that some factors had double loadings and were excluded from further analysis. This resulted in excluding one item from work pressure, one item from competition and three items from peer cohesion. The excluded items are marked red in Appendix 1. The factor loadings

¹ The other questions were about: family and children, feeling of being home at the department, work load, work-life balance and family supervisory supportive behavior.

after exclusion of the items of *work pressure* ($\alpha = .891$), *competition* ($\alpha = .899$), *peer cohesion* ($\alpha = .926$) and *participation* ($\alpha = .921$) are presented in Appendix 2.

Work engagement was measured with three items, adapted from Schaufeli, Bakker and Salanova (2006; e.g. “My job inspires me”; $\alpha = .903$). They could answer on a 7-point Likert scale, 1 = never, 7 = always, on the question to which degree the statements applied to the person. The factor analysis showed that work engagement loaded on the subconstruct as expected.

Supervisor support was measured by three items (e.g. “My supervisor sees my qualities”; $\alpha = .875$). These three items were specifically designed for this study. The factor analysis showed that supervisor support loaded on the subconstruct as expected.

Turnover intention was measured by a single item, where participants were asked to estimate their chances that they will be working in academia in five years on a 0-100% scale. This question was recoded when it was used for the data analysis, hence it measured the turnover intention instead of job retention.

Analytical Strategy

The quantitative data were analysed using the statistical software SPSS version 26 (IBM Corp, 2018). For this study, the independent variables *work pressure*, *competition*, *peer cohesion*, *participation* and *supervisor support* were derived from the T1 data point in 2018. The dependent variables *work engagement* and *turnover intentions* were derived from the T2 data point in 2019.

For this study, hypothesis 1 and 2 were tested using a hierarchical multiple regression to test the effect of the different culture dimensions on work engagement. Afterwards, a second hierarchical multiple regression of the different culture dimensions on turnover intention was used, to examine direct relationships with the dependent variable. To test the mediating effect of work engagement on turnover (hypothesis 3 and 4), model 4 of the processes macro for SPSS of Hayes (2013) was used. For hypothesis 5 and 6, model 8 of the processes macro for SPSS of Hayes (2013) was used to test for a moderated mediation, including supervisor support as moderator.

Additionally, covariate variables were added to the analysis. Covariates increase the precision of measuring the sole effect of the four dimensions of culture on work engagement and turnover intention, by controlling for variables that influence work engagement and turnover intention. By adding covariate variables, the true effect of organisational culture on the dependent variables can be observed. In this study, *age*, *gender*, *working hours according*

to their contract, type of contract (temporary or indefinite) and years at the university were added to the analysis.

Results

The descriptive statistics, r , M and SD , of every factor can be found in Table 1. In line with hypothesis 1, the individual excellence culture dimensions competition and work pressure were both significantly negatively correlated to work engagement and positively correlated with turnover intentions. Likewise, in line with hypothesis 2, peer cohesion and participation were positively correlated to work engagement, and negatively correlated to turnover intentions. Interestingly, age was negatively correlated to peer cohesion and participation, meaning the older someone was, the less participative and cohesive culture they perceived. Similarly, the more years someone worked at the university, the less cohesive culture they perceived.

The Effect of the Organisational Culture on Work Engagement of Early-Career Academics

To analyse if a higher culture of work pressure and competition and a higher culture of peer cohesion and participation at T1 lead to higher and lower work engagement respectively at T2, a hierarchical multiple regression on work engagement was conducted. In contrast to H1, a culture of high work pressure and high competition did not lead to lower work engagement (see Table 2). Thus, early-career academics had no lower work engagement as a result of high work pressure or high competition. However, in support of H2, the more academics perceived a high participative culture at T1, the higher their reported work engagement at T2. Thus, the higher participation early-career academics perceived within their department, the higher their work engagement was one year later. Yet, this was not the case with peer cohesion. A culture of high peer cohesion did not lead to higher work engagement. Therefore, H1 was not supported and H2 was only partially supported.

Notably, the covariate ‘years working at the university’, referring to the amount of years that an assistant professor worked at the university, had a significantly negative effect on work engagement. Hence, the more years an assistant professor worked at the university, the less engaged he was with his work. No other covariates had a significant effect on work engagement.

Table 1*Mean (M), standard deviation (SD) and correlations (r) of the study variables (N=181)*

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Work pressure (T1)	5.09	1.14											
2. Competition (T1)	4.40	1.21	.659***										
3. Peer cohesion (T1)	4.50	1.29	-.318***	-.361***									
4. Participation (T1)	3.99	1.42	-.362***	-.343***	.616***								
5. Supervisor support (T1)	5.06	1.35	-.189*	-.219**	.396***	.564***							
6. Work engagement (T2)	5.19	1.11	-.209**	-.120*	.264***	.358***	.327***						
7. Turnover intentions (T2)	22.07	20.90	.192**	.210**	-.172*	-.197**	-.125	-.527***					
8. Gender ₁	.61	.49	-.005	.013	-.036	-.161*	-.166*	-.128	.127				
9. Age ₂	41.19	7.85	.077	.064	-.219***	-.217**	-.300***	-.184*	.032	.004			
10. Type of contract ₃	.044	.206	-.117	-.086	-.032	-.002	.022	-.021	.247**	.169*	-.218**		
11. Years at university	9.718	8.10	.081	.054	-.190**	-.114	-.187*	-.246***	.091	.058	.777***	-.162**	
12. Work hours contract	35.92	5.19	-.058	-.1.17	.044	.035	.018	-.032	-.161*	-.215**	-.199**	.045	-.179*

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.₁ man = 0, women = 1₂ minimum age = 28, maximum age = 63.₃ Permanent and temporary contract with prospects of permanent = 0, temporary = 1, other = excluded from survey

Table 2*Results of hierarchical regression analysis of organizational culture on work engagement*

Effect	Estimate	SE	t	β	95% CI		p	R ²	ΔR^2	F	dF
					LL	UL					
Model 1											
Constant	6.027	9.09	6.632		4.233	7.820	.000				
Age	-.001	.017	-.009	-.009	-.034	.031	.939				
Gender ₁	-.261	.173	-.114	-.144	-.602	.081	.133				
Work hours	-.008	.016	-.482	-.037	-.040	.025	.631				
Years at university	-.034	.016	-.245	-.245	-.065	-.002	.036				
Contract	-.225	.407	-.042	-.042	-1.029	.579	.582				
Overall model							.016	.076		2.889	175
Model 2											
Constant	4.404	1.118	3.729		2.073	6.736	.000				
Age	.016	.016	.961	.111	-.017	.048	.338				
Gender ₁	-.143	.167	-.856	-.063	-.472	.187	.393				
Work hours	-.004	.016	-.261	-.019	-.035	.027	.794				
Years at university	-.040	.015	-2.618	-.289	-.069	-.010	.010				
Contract	-.207	.391	-.519	-.038	-.978	.565	.598				
Work pressure	-.138	.092	-1.511	-.142	-.319	.042	.113				
Competition	.086	.086	1.001	.094	-.084	.257	.318				
Peer cohesion	.043	.079	.543	.050	-.113	.199	.588				
Participation	.225	.071	3.154	.289	.084	.367	.002				
Overall model							.000	.194	.118	6.234	171

Note. 1 man = 0, women = 1

The Effect of the Organisational Culture on Turnover Intentions of Academics

Second, the direct effect of the four dimensions of organisational culture on turnover intention was investigated with a hierarchical multiple regression analysis (see Table 3). The analysis showed that no significant effects of all four dimensions of organisational culture on turnover intentions. Hence, a culture characterised by high work pressure and high competition at T1 did not contribute to lower intentions of early-career academics to leave the university at T2. Similarly, a culture characterised by high peer cohesion and high participation at T1 did not contribute to lower intentions of early-career academics to leave the university at T2.

Similarly to Table 2, the influence of some covariates on turnover intention were significant. Table 3 showed that the amount of work hours and the type of contract influenced the intention to stay in academia. In the case of type of contract, when early-career academics had a temporary contract, they had higher turnover intentions.

Table 3

Results of hierarchical regression analysis of organizational culture on turnover intentions.

Effect	Estimate	SE	t	β	95% CI		p	R ²	ΔR^2	F	dF
					LL	UL					
Model 1											
Constant	43.861	16.851	2.603		10.603	77.119	.010				
Age	-.148	.308	-.482	-.056	-.755	.459	.631				
Gender ₁	1.856	3.207	.579	.043	-4.473	8.185	.564				
Work hours	-.604	.306	-1.975	-.148	-1.207	.000	.050				
Years at university	-.380	.294	1.292	.147	-.200	.960	.198				
Contract	26.172	7.553	3.465	.258	-11.265	41.079	.001				
Overall model							.002	.105		4.090	175
Model 2											
Constant	38.558	22.585	1.707		-6.023	83.139	.090				
Age	-.279	.313	-.892	-1.05	-.896	.339	.374				
Gender ₁	1.009	3.191	.316	.024	-5.290	7.309	.752				
Work hours	-.560	.301	-1.862	-.137	-1.154	.034	.064				
Years at university	-.415	.289	1.438	.161	-.155	.968	.152				
Contract	27.578	7.475	3.690	.272	12.824	43.332	.000				
Work pressure	1.712	1.750	.979	.093	-1.742	5.167	.329				
Competition	1.893	1.650	1.147	.110	-1.363	5.149	.253				
Peer cohesion	-.339	1.511	-.224	-.021	-3.321	2.643	.823				
Participation	-1.577	1.367	-1.154	-.108	-4.276	1.121	.250				
Overall model							.012	.169	.065	3.322	171

Note. 1 man = 0, women = 1

Consequences of higher work engagement on early-career academics turnover intentions

As work pressure, competition and peer cohesion had no direct effects on work engagement, it would be impossible for work engagement to be a mediator between these three dimensions of organisational culture and turnover intention. Therefore, no mediation analysis

was conducted between these three dimensions of organisational culture and turnover intentions. Instead, they were added to the other five covariates in further analysis. Nonetheless, to test whether the high work engagement due to high participation decreases turnover intentions, Model 4 in the processes macro for SPSS with 5000 bootstrapped samples was used (Hayes, 2013). In contrary to hypothesis 4, there was not a significant negative indirect effect of participation on turnover intentions ($R^2 = .169$, $F(9,171) = 3.8695$, $p < .0001$, $B = -1.577$, $SE = 1.367$, $t = -1.154$, $p = .2502$). Hence, high participation among early-career academics does not lead to lower intentions to leave the university, via work engagement. Thus, both H3 and H4 were not supported.

The Buffering or Facilitating Role of Supervisor Support

Despite the fact that no main effects of organisational culture on turnover intentions occurred, there could be a moderating effect of supervisor support on work engagement and turnover intentions, depending on high or low dimensions of organisational culture. To test for these effects, Model 8 in the processes macro for SPSS with 5000 bootstrapped samples was used (Hayes, 2013). Unfortunately, Hayes' Model 8 does not allow for multiple independent variables in one analysis. Therefore, the analysis for all four culture dimensions were conducted separately, taking the not used culture dimensions as covariates in the analysis.

The results showed that supervisor support had no moderating role in the relationship between all four dimensions of organisational culture and turnover intentions (all $t < .1275$, all $p > .318$). Similarly, supervisor support had no moderating role in the relationship between the culture dimensions competition and peer cohesion on work engagement (all $t < 1.784$, all $p > .076$). However, supervisor support had a moderating effect on the relationship between work pressure and participation on work engagement. Hence, in a culture with low work pressure, academics reported significantly higher levels of work engagement when supervisor support was high, compared to when supervisor support was low ($B = -.1079$, $t = -2.259$, $p = .025$). However, when there was high work pressure in the organisational culture, the level of work engagement was low and no effects of supervisor support were found (Figure 2). Additionally, in a culture with high participation, academics reported significantly higher levels of work engagement when supervisor support was high, compared to when supervisor support was low ($B = .0882$, $t = 2.230$, $p = .027$). However, when the organisational culture was characterised by low participation, the level of work engagement was low and no effects of supervisor support were found (Figure 3).

Figure 2

Interaction effect of supervisor support and work pressure on work engagement.

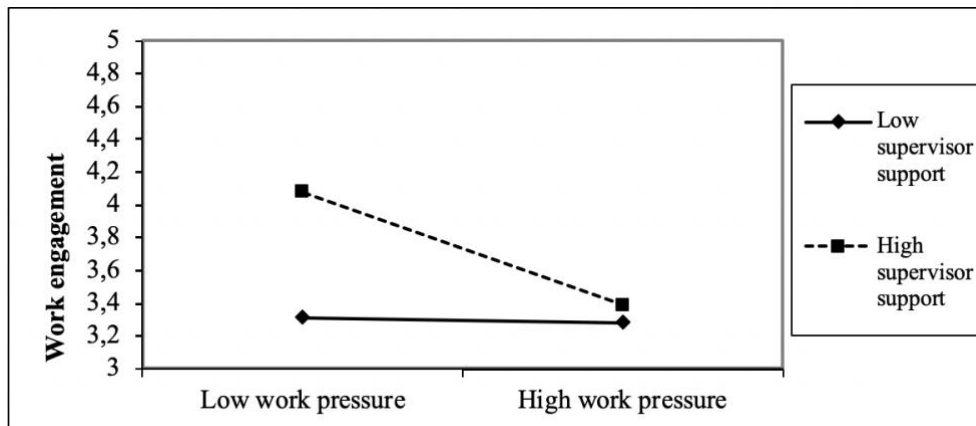
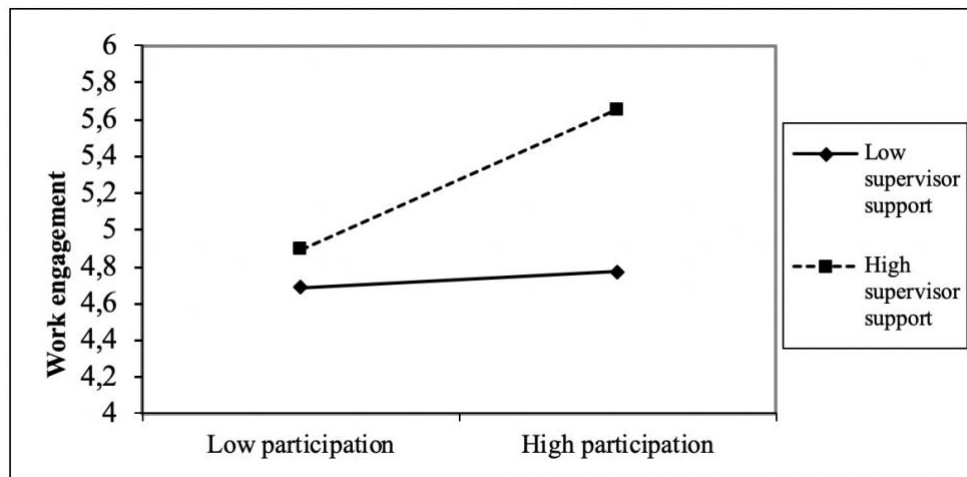


Figure 3

Interaction effect of supervisor support and participation on work engagement



Discussion

The purpose of Study 1 was to investigate the influence of four organisational culture dimensions on work engagement and turnover intentions. The results showed that early-career academics who perceived a culture of high participation in one year, had higher work engagement a year later. Yet, the culture dimensions of work pressure, competition and peer cohesion had no significant effect on work engagement. Additionally, all four dimensions of organisational culture in academia (work pressure, competition, peer cohesion and participation), had no direct influence on turnover intentions. Hence, the organisational culture does not directly influence intention of early-career academics to leave academia.

The second purpose of Study 1 was to investigate the role of supervisor support in certain organisational culture dimensions. The results showed that the role of the supervisor for academics' work engagement was particularly significant in academic cultures with low work

pressure and high participation. Thus, in a culture with low work pressure and high participation, early-career academics reported significantly higher levels of work engagement when supervisor support was high, instead of low. Yet, in a culture with high work pressure and low participation, the supervisor support stands powerless in supporting the early-career academics' work engagement. Hence, supervisor support can only help the early-career academic in an academic culture that is characterised with low work pressure and high participation.

Thus, Study 1 showed that the more early-career academics perceive a high participative culture on T1, the higher their work engagement is a year later. Yet, Study 1 provided no explanation why work pressure, competition and peer cohesion had no effect on work engagement and turnover intentions. To solve these limitations, Study 2 aims to elaborate the found and not found relationships. For example, it focuses on why high work pressure and competition had no influence on work engagement, even though the literature showed that it was typical in academia. Lastly, a limitation of Study 1 that Study 2 aims to improve is the lack of clear recommendations for the organisational culture in academia.

Study 2

Method

Participants and Design

The qualitative data were collected through eight semi-structured in-depth interviews with assistant professors at the Utrecht University. The participants were selected based on a purposive sampling strategy (Gentles, Charles, Ploeg & McKibbin, 2015). This entails that the participants were selected based on preselected criteria. In this study, the participants were selected on gender, department and job function (assistant professor). To have a complete picture of the organisational culture in academia, participations from various departments and faculties were approached. Hence, the view on the organisational culture in academia were based on early-career academics from various departments, instead of a single department. In total, 74 assistant professors from the department of economics, law, social sciences, mathematics, chemistry and humanities at the Utrecht University were approached to participate in this research. In case of no response, the participants got a reminder email exactly one week after the first email. Of the 74 assistant professors, 8 were willing to participate, 22 mentioned they had no time for the research, sometimes because of corona, 4 gave no reason, 1 mentioned that he was not an assistant professor, just a lecturer, 39 didn't respond to the

emails. Of the 8 participating assistant professors, 4 were male and 4 were female. One of the participants had a temporary contract, the others had a permanent contract.

Procedure

The interviewees were approached by email where they were invited for a semi-structured interview and where the purpose of the research was explained (see Appendix 3). A semi-structured interview provides information about the current culture at the university and elaborates the findings with possible recommendations. The major advantages of interviews as a data collection method in comparison to other methods is the ability to capture verbal and non-verbal cues, steering the conversation and getting a deeper understanding of the issue (Thakur, Hsu & Fontenot, 2012). None of the interviewees were previously known by the researcher and confidentiality was guaranteed. The interviews were conducted in Dutch, as this was the native language of all participants. Being able to speak in their own language invited the participants to explain situations in more detail. Due to the corona crisis of 2020, it was not possible to conduct the interviews in real-life. As a result, all the interviews were conducted using Microsoft Teams' videocall option. The participants were asked if they objected to being audio recorded, so the data collection could be as complete as possible. None of the participants objected to the audio recording. All audio files were deleted after the interviews were manually transcribed in Microsoft Word. The interviews were 40:21 minutes on average with a word density of 3509 words.

Instruments

The interview protocol (Appendix 4) included open-ended questions that allowed interviewees to pick up spontaneously on those factors that were perceived as most important (Barnett, Vasileiou, Djemil, Brooks and Young, 2011). The interview protocol existed out of four topics: general information, organisational culture, work engagement and turnover intentions, and ideal work culture. Firstly, the general information revolved around the function, years of employment and professional identity (e.g. *“For how many years do you work in this function and for how many years do you work at this university?”*). Secondly, the topic of organisational culture links back to the four culture dimensions of Study 1: work pressure, competition, peer cohesion and participation. Every dimension had its own set of questions and sub questions (e.g. *“What kind of performance is expected within your department that you should deliver?”*). Thirdly, after paraphrasing what the participant had said, the topic of work engagement and turnover intentions was introduced. Similarly to Study 1, the goal of this topic

was to see what the effect is of the organisational culture on the work engagement and turnover intention (e.g. “*Are you feeling motivated or demotivated by this organisational culture*”). Lastly, the topic about ideal work culture aimed to provide recommendations to create a healthier work culture (e.g. “*In your opinion, what entails an ideal work environment and work culture in academia?*”).

Analytical Strategy

The qualitative data were analysed using the software ATLAS.TI. Content analysis was used by using inductive codes in three stages: open, axial and selective codes (Eisenhardt, 1989). First, every interview was analysed using open codes. The open codes label the phenomena that emerged from the data. Secondly, axial coding was used to put the data back together to make connections between categories. Whereas open coding fractures the data into categories, axial coding puts the data back together by making connections between the categories and subcategories. Axial coding focuses on the conditions that give rise to a category, the context in which it is embedded, the action/interactional strategies by which the processes are carried out, and the consequences of the strategies (Kendall, 1999). Finally, selective coding integrated the categories that were formed into an emergent framework (Strauss and Corbin, 1990). The codes that were used in one interview were noted on paper and then used for the next interview, so redundant codes were minimalised. In total, 61 inductive open codes were used with 270 quotations (see Appendix 5). The 61 inductive codes were merged in 10 categories (axial codes). The 10 categories were arranged into 4 selective themes. The codebook of the open codes can be found in Appendix 6.

Results

Based on the selective themes of Appendix 5, the results of the interviews will be discussed.

Culture of Individual Excellence

In all interviews, the culture of individual excellence was clearly noticeable. Similar to Study 1, the culture of individual excellence was visible in the high work pressure and high competition in academia. For example in the following quote, the assistant professor talked about the high work pressure in terms of long work hours.

“It is a kind of unspoken rule, the 40 hours that is noted in your contract. If you only work 40 hours, you are not really part of this group..... but that is science. I can almost not imagine that it is different at other faculties. Putting in 40 hours is just too little.” – Assistant Professor 4

All of the assistant professors stated that one of the reasons for the high work pressure was the unfair representation of work hours spend on teaching, in comparison to how many hours you actually spend on teaching.

“There is an official list that says how much hours you get for teaching a specific course. That list makes no sense. The actual hours you have to put in is way higher. When I read that list after a half year of teaching, I almost lost it.” – Assistant Professor 8

The consequences of the high work pressure resulted in overtime in the weekend or evening. Some assistant professors compensated the extra hours spend in teaching with less hours in research.

“My contract says I have to teach for 60% of the time, and 40% of the time research. But in practice, it is 80-20. I’m lucky because I don’t have any targets regarding publishing articles.... I have a colleague from a different department that started at the same time as me. He had tight deadlines in research, that didn’t go well.” – Assistant Professor 5

Likewise, high competition does exist in the academic setting. The perceived competition differed from assistant professor to assistant professor. Some felt a daily base of competition, while others only noticed it on specific moments, like when a higher position was vacant. Most of the high competition culture originates out of two sources: writing for grants and publishing.

“It is not mentioned explicitly, but it is still the case: money. Getting grants for research is very important. If you can get a lot of money, then you are ‘the boss.’” – Assistant Professor 4

“For every grant you request, only 10% get awarded. You have to hand in ten proposals to get one grant. That takes a lot of time.” – Assistant Professor 2

As seen, the assistant professors declared that writing for grants was important and difficult because of the low awarding percentage. At the same time, all of the assistant professors mentioned the pressure to publish journal articles. The degree of pressure differed from one assistant professor to another, and one department from the other, as seen in the quotes below.

“I don’t have any targets about how much I have to publish. It is not that my supervisor says that I have to publish more, or that I don’t reach my 40% research time. I don’t have tight deadlines in the research part of my job.” – Assistant Professor 5

“In our field it is important to be the first or last author of an article. That is what you are rated on. That sometimes means that people don’t want to work together, because they say ‘if I work with you, only one of us can be the first author, so I don’t work together.’” – Assistant Professor 2

The underlying driving factor of the competition is the reward system in academia. Many assistant professors mentioned that you needed to publish many articles and bring in grants for the department to proceed in your career. The assistant professors had the idea that the output of the research was more valued than the output of education or management tasks.

The perceived work pressure and competition differed from assistant professor to assistant professor, but in general they all perceived a culture of individual excellence. How the assistant professors dealt with the culture of individual excellence was different. Some compensated the overtime of one task with doing less time at other tasks. Some worked more hours than they should according to their contract. Despite their own solution, the culture of individual excellence did not necessarily negatively impact their work engagement. This assistant professor mentioned, as many other assistant professors did, that her own ambitions were aligned with the pressure from the department.

“It is expected that you publish, do good research and deliver good education. But I want that myself as well. So I don’t always see it as external pressure. The expectations coincide.” – Assistant Professor 7

The consequences of the culture of individual excellence are dependent on their personal ambition. There were almost no formal guidelines on how much articles an academic needs to

publish, how much overtime someone needs to put in or how much grants someone must obtain. Yet, the assistant professors mentioned that to proceed your career in the academic environment, you need to put in high effort and you need to compete. This feels natural to most assistant professors, as they are already socialised in the system and survived an extremely competitive and high work pressure environment during and after their PhD. This resulted in an academic culture that is highly focussed on individual excellence. Yet, the amount of external pressure and competition that assistant professors feel is dependent on their own career ambition.

The results showed a high variation between departments. This was mostly due to the history and type of departmental culture. For example, research in the beta-sciences department costs significantly more than in social sciences. This results in a higher degree of focus on competing for grants in beta-sciences than in social sciences.

Supporting Cultural Factors

Regarding the peer cohesion and participation in the departments, the assistant professors gave contradicting views. Most departments differed a great deal from each other, resulting in different views on the cohesion and participative influence on decision-making. First, some assistant professors saw the department as a tight community.

“I see my colleagues as my family. For me it is a collection of different characters where I know most of them really good, and where everybody knows the crazy uncle of the department.” – Assistant Professor 7

“People are kind to each other. There is a general mood of friendliness and interest. There is a culture that people are genuinely interested in each other.” – Assistant Professor 5

Others mention that people were friendly to each other, but that the collegiality was not connected to the nature of their work. This was mostly because of the individual nature of their work.

“Every assistant professor is on its own. I try to work together with research with some colleagues. But it is still really individual. With teaching, you work together sometimes,

is it more collegial there. But eventually you just make a division of I do this, you do that. It remains individual.” - Assistant Professor 8

A large part of the work of the assistant professor is individual. Therefore, peer cohesion did not really had a direct impact on the work of the assistant professors. Sometimes, a lack of peer cohesion led to situations where colleagues were partially estranged from each other.

*“Sometimes there are people working in our department and I don’t even know who they are. And that is especially sad for those people. You would expect when we got a new colleague, that an email would be send to everybody with ‘hey, this person is starting on Monday’, and that he would be introduced to everybody. But that isn’t happening. “
– Assistant Professor 6*

The assistant professors showed a mixed image on the cohesive culture. It mostly differed from department to department. Yet, none of the assistant professors mentioned any motivation or demotivation because of (a lack of) peer cohesion. Similar to peer cohesion, participation also differed at each department. Again, this was a result of the differences in history and culture of the department.

“In our department they ask us for input. I have been asked to participate in rethinking the reward system by a couple members of the management team. It was about how you could promote from assistant professor to associate professor.” – Assistant Professor 8

“I got the feeling that people listen to me, but at the same time it [the department] has a hierarchical structure. It is a small department but also hierarchical. There is a management team consisting out of associate and full professors. They make the decisions, and I am not part of it” – Assistant Professor 7

As seen in the quotes, some assistant professors were asked to participate in important decisions. However, there was also a clear hierarchical structure visible in almost every department. In the hierarchical structure in academia, full professors and associate professors make most of the decisions, which sometimes leads to little transparency and influence on those decisions among assistant professors.

“What I always say, there is a lack of transparency. Often, they [the management] make certain decisions and then it is not clear why and how they made those decisions..... they should communicate better about these kinds of things.” - Assistant Professor 6

Even though sometimes the assistant professors felt that there was room for improvement, they all felt that their initiatives were appreciated. It was possible for the assistant professors to change something in the department. The same assistant professor that felt a lack of transparency mentioned the following.

“I proposed to change the monthly research meetings. On a certain moment I said that we should make notes of the meeting, because a lot of people couldn't be there. Even though important decisions are being made. Everybody thought it was a good idea and it was immediately implemented.... They also mentioned explicitly in my performance evaluation that they valued my involvement and participation ” – Assistant Professor 6

In sum, despite the hierarchical structure and sometimes not being involved in the decision making, the assistant professors mostly felt that their initiatives were appreciated. In addition, most assistant professors felt that their opinion mattered and that they were heard by the management (associate and full professor) of their department.

Additional Factors Influencing Work Engagement

Besides the four cultural aspects that were discussed above, other aspects influenced the work engagement of the assistant professors. Out of Study 1, it was expected that supervisor support would have an influence. However, the assistant professors mentioned that the perceived support was highly dependent on the kind of supervisor.

“My supervisor is process-oriented. He pays attention to my well-being, so in that case he is doing well. But my problems with the culture are more in the whole system of the university, even the whole society. It is a performance society. He cannot change that.”
– Assistant Professor 5

“We got a performance evaluation, but that's it. It is more about how he [the supervisor] is doing and how the group is doing, than it is about me. Last year, I told him at my evaluation meeting that I had a really busy period and almost could not handle it. He

told me that he was shocked when he heard that. But that is it, he did nothing with it.”

– Assistant Professor 4

The assistant professor of the first quote got a supportive supervisor. Yet, this supervisor could not really help changing the organisational culture. In the second quote, the assistant professor had a quite absent supervisor, receiving minimal support. The perceived supervisor support was depended on the specific supervisor and the power and involvement that this supervisor had. If an assistant professor wanted to see something change in the overall university culture, it was impossible for the supervisor to do so.

Other positive factors that influence the work engagement included international awards, promotion opportunities or factors that were related to nature of work and work environment, like autonomy:

“I like my work because I can decide on my own work and I don’t really have a boss. I can decide on my own what I want to work on. I can write my own proposals, choose my own PhD students, that is what I like.” – Assistant Professor 3

The degree of autonomy was very important for most assistant professors. They enjoyed how they can decide on their own work. This was one of the most important drivers in their work. Similarly to autonomy, flexibility was also important to most assistant professors.

“Something that I think is really nice, is the trust that we have here and that we don’t get checked upon our work all the time. If I have to stay home on a Monday morning because my daughter is sick, then it is no problem.” - Assistant Professor 6

Unlike these positive factors, there were also factors that were not beneficial to the work engagement of the assistant professors. A frequently mentioned topic was the bureaucracy of the department or university.

“I wanted a table at which you could stand behind. But in order to get that I had to get a prescript from my doctor stating I got back problems. In my personal opinion, prevention is important too. But then you end up in a very foggy bureaucratic area, where getting something done in a simple way is not possible. – Assistant Professor 5

As seen, multiple factors influence the work engagement of early-career academics outside the four dimensions or organisational culture as discussed in Study 1 and 2. A full list of the beneficial or detrimental factors in academia can be found in Appendix 5.

Improvements in the Organisational Culture in Academia

The assistant professors mentioned multiple improvements that would be great to implement. Firstly, they mentioned improvements that would be good for their specific department. For example, one department showed a clear lack of strong leadership, another department was characterised by unclear job tasks, where some tasks were executed by no one. These improvements regarding the departments need to be further assessed by the departments themselves and will not be further discussed here.

The improvements that will be discussed here are related to the overarching university culture. As changing the organisational culture is not easily done, changing important factors that constitute this particular culture would be an effective approach. Two things stood out in the overarching academic culture that would be optimal to change: re-evaluation of the assessment system and re-evaluation of the work time in education. The main drivers behind the culture of individual excellence were the performance evaluation indicators and the high work pressure because of overtime. The current evaluation system is highly focussed on the research, instead of the education or management tasks. The focus on research was noticeable in the assessment of the amount and type of published articles, amount of grants assigned and (international) awards. The assistant professors were less acknowledged for the type of committees that they were part of or the good student evaluations from the taught courses:

“Nobody would say that education is the most important, because the appreciation for education is not there at the university. You are only being assessed on your research. I think it is very disappointing that education gets so little appreciation, but that is the way it is”. – Assistant Professor 1.

This is closely linked to the re-evaluation of the work time in education. As mentioned before, the hours assigned to teach a course are far off the hours that a course really needs. There is a need for a fair representation of actual work hours in the guidelines for education. A fair representation can lead to less work pressure, more appreciation and a healthier culture.

Discussion

The purpose of Study 2 was to complement and explain the results of Study 1. Study 2 showed that the culture of individual excellence was highly visible among early-career academics. Every early-career academic spoke about the high work pressure, including working more hours than planned or compensating their work hours with working less hours at other tasks. Competition was clearly noticeable in applying for grants, publishing articles or promotion opportunities. An important finding of Study 2 was that the assistant professors did not always perceive high work pressure and high competition as negative. Most of the early-career academics had high ambition and considered working more hours or compete for grant writing as normal. In this way, it provided a possible explanation on how the culture of individual excellence was not perceived as detrimental on the work engagement of early-career academics.

Regarding the supportive culture dimensions, peer cohesion was not clearly noticeable at all departments. In most cases, there was a friendly culture. Yet, as the nature of work remained individual for a large part, it did not lead to more or less motivation in the eyes of the assistant professors. Nonetheless, participation was in a higher degree visible at the departments. Most assistant professors felt that their initiatives were appreciated and that people listened to them. Yet, the hierarchical structure restrained the actual impact of the assistant professors. If they wanted to change something complex, it mostly resulted in disappointment because of all the hierarchical layers.

Study 1 showed that supervisor support could help in creating higher work engagement when work pressure was low or participation is high. Study 2 showed that supervisor support was highly dependent on the supervisor. Some supervisors were supporting, yet others were absent or gave limited support. The influence of all supervisors were limited by the bureaucratic aspects of the university. This goes hand in hand with the results of Study 1, where supervisor support had no influence in a low participative (highly bureaucratic) culture. Study 2 also showed additional factors that either positive or negative influence work engagement and turnover intentions besides the cultural dimensions. Job factors like autonomy and flexibility were highly appreciated by the assistant professors. Likewise, receiving external awards or social interaction with students was a positive factor as well. However, factors like the bureaucratic organisation, bureaucratic job tasks and management tasks were detrimental for the work engagement.

In general, the organisational culture in academia as described by the assistant professors can be linked to the Job Demand-Control model by Robert Karasek (1979). The

culture in academia is characterised by high demands, with a high strain on time, job effort, competition and difficulty. Additionally, most assistant professors felt that they had control over their own job. They had the autonomy to decide where and when they want to work on, as well as deciding on their own schedule. In terms of Karasek (1979), the job of an early-career academic is characterised as an ‘active job’. Early-career academics perceive a highly psychologically demanding job, but don’t perceive it as highly stressful, because of their autonomy. It is important to warn for a decrease in autonomy or participation in the job of early-career academics. Considering this will lead to low control and therefore turn an ‘active job’ in a ‘high strain job’.

Despite the departmental differences and solutions for these problems, two improvements could lead to a general healthier academic work culture: (1) re-evaluation of the work time in education and (2) re-evaluation of the assessment system. Currently, the high work pressure was mainly caused by a gap between the actual hours and the hours the assistant professor receives on paper for teaching a course. This results in assistant professors putting in overtime or cutting on their research hours. However, their promotion to associate professor was highly dependent on their research output. Without many published articles or received grants, it was difficult to make a career in academia. The wrong guidelines for work time in education and high focus on research in the performance evaluation resulted in an unhealthy individual excellence culture. Re-evaluating the work time in education and focussing more on other aspects than research during performance evaluations can reduce the pressure on individual excellence.

General Discussion

This research aimed to investigate the effect of a culture of individual excellence in academia on work engagement and turnover intentions one year later. Secondly, it investigated the buffering or facilitating effect of supervisor support on these relationships. Two studies, using an exploratory sequential design, were conducted among early-career academics. Study 1 focused on exploring the effects of organizational culture on work engagement and turnover intentions with longitudinal data, Study 2 elaborated and explained the found and non-found results with qualitative interviews.

Does the Culture of Individual Excellence Impact Work Engagement?

Study 1 showed that a perceived culture of individual excellence (high work pressure and high competition) at T1 did not lead to lower work engagement or intentions to leave academia one year later (T2). Yet, Study 2 showed that the culture of individual excellence was

clearly visible among early-career academics. Early-career academics experienced high work pressure in terms of overtime and expectations to publish in high-impact journals. Similarly, academics experienced high competition for promotions, publishing and writing for grants. However, as stipulated from the interviews in Study 2, a potential reason that the culture of individual excellence did not result in to lower work engagement one year later in Study 1, may be because it seemed to depend on the individual ambition of early-career academics whether they perceived this type of culture as motivating or depleting. The individual excellence culture coincides with the personal ambitions of the early-career academics and therefore perceived as normal to the assistant professor, resulting in no impact on work engagement.

Besides the personal ambitions of early-career academics, a theoretical and methodological explanation can also explain the non-found results of Study 1. First, the influence of work pressure and competition on work engagement may not be as linear as initially thought. Some researchers argue for an inverted U-shape of competition on performance, where too little and too much competition is unhealthy, but a medium level is beneficial for the performance (Carson, Bartneck, Voges, 2013; Salin, 2003). The same could account for work pressure, where a medium level of work pressure is beneficial for the work engagement of early-career academics, but high level of work pressure would be detrimental. Secondly, a methodological explanation for the non-found results of Study 1 could be the longitudinal design. As the culture dimensions at T1 had to impact the work engagement and turnover intention only one year later at T2, it could be too early to see any conclusive results. A larger period between the first and second data collection period would be preferred.

Nonetheless, both Study 1 and 2 bring important contributions to the literature. First, a culture of individual excellence does not result in lower work engagement. Early-career academics who have managed to obtain a position in academia after their PhD are likely to be selected and socialised into the system because they want to excel in their work and want to write the best articles and get the grants. Additionally, early-career academics that experience high personal ambition to excel in their work, perceived less external pressure to perform. In research, the influence of personal characteristics on the perception of work demands and work engagement was already previously investigated. Research showed that a proactive personality influenced the impact work demands on work engagement (Dijkers, Jansen, de Lange, Vinkenbunrg & Kooij, 2009). Employees dealing with high work demands scored significantly higher on work engagement, when they had a proactive personality rather than a passive personality. Future research needs to investigate if personal ambition has the same kind of impact as proactive personality on work engagement.

Does a Highly Cohesive and Participative Culture Influence Work Engagement?

Despite the expectation that a highly cohesive culture results in positive work engagement, Study 1 provided no evidence of a relationship between peer cohesion and work engagement. This is in contrast to studies with teams, which showed that highly cohesive teams scored significantly higher on work engagement (Rodrigues-Sanches et al., 2017). A possible explanation followed out of interview synthesis in Study 2. Study 2 showed that while high cohesion was experienced on departmental level, it was not intertwined with the nature of the work of an early-career academic. Academics may be collegiate at lunch or with outings, it did not change the highly individualist performance expectations in their research work.

However, the more academics perceived the organisational culture as participative in T1, the higher their work engagement is in T2. This was supported by Study 2 where most of the participants felt that their initiatives were appreciated and that their opinion mattered. But, the impact was limited by the bureaucratic nature of the university. This research expands previous research of Yoerger and colleagues (2015) by showing evidence that participative cultures impacts the work engagement of early-career academics. The difference in results of a cohesive and participative culture on work engagement might be explained by the fact that participation can directly impact the core of an academics' job (deciding over what to research, division research hours in comparison to teaching), instead of elements that are secondary to the academics' job (friendships at work, feeling of a family).

The Influence of Supervisor Support on Early-Career Academics

The last purpose of this study was to investigate the role of supervisor support in organizational culture and work engagement. Study 1 showed that cultures of low work pressure and high participation only resulted in higher work engagement when supervisor support was high, instead of low. Supervisor support had no buffering or facilitating role on the impact of organisational culture on work engagement when the culture was characterised by high work pressure and low participation. Thus, when the organisational culture was characterised by high work pressure or low participation, the supervisor stands powerless. Similar to Study 1, Study 2 showed practical examples of situations where supervisors had no impact on the early-career academics' work engagement. For example, in highly bureaucratic departments, which could be seen as low participative cultures, the supervisor could not help the early-career academic. Thus, supervisor support is important for early-career academics, however, it is limited by the boundary conditions of the department.

Improvements to Create a Healthier Organisational Culture in Academia

Study 2 introduced two important implications in improving the organisational culture in academia. In order to change the organisational culture, the elements that constitute the organisational culture have to change (Carroll & Quijada, 2004). The culture of individual excellence is caused by two important elements: high work pressure and high competition. Both of these elements need to be addressed to change the culture of individual excellence. To tackle high work pressure, a revision on the guidelines of work hours for teaching a course is needed. This results in academics having enough time to teach a course, without overtime or cutting back on their research hours. To tackle high competition, the performance evaluation needs to address all of the early-career academics work, not just their research output. As promotions were dependent on publishing articles and writing for grants, competition solely focuses on the research output. Hence, people who spend less time on research and more on teaching or extra committees, suffered in the performance evaluations. In the Netherlands, multiple scientific institutions are already working to redefine the reward and appreciation system in academia (Scienceguide, 2019). The aim is to diversify and dynamize career paths of academics, so that excellence is promoted in all core domains of the academics' work, not only research. This research provides additional background information to pursue the restructuring of the reward and appreciation system in The Netherlands.

Other Limitations and Future Research

A major limitation that in both studies likely occurred is a selection effect. Only early career-academics who managed to obtain a position in academia after their PhD were included in the analyses of Study 1 and Study 2. The assistant professors that participated in this study are socialised into the academic system where only academics that can deal with high work pressure and competition can survive. Contrarily, (post-)PhD students, who still have a temporary contract and need to compete against other PhD students for a position in academia, were not included in both studies. Previous research showed the importance of samples that included participants that worked at the organisation and already left the organisation (Fouad, Singh, Cappaert, Chang & Wan, 2016). For example in this study, the participants that left the organisation scored significantly lower on workplace support and organisational commitment in comparison to participants that still worked at the organisation. Regarding the current research, it would not be unlikely if former early-career academics or PhD students have significant different views on the culture of individual excellence or its consequences. Therefore, future research could replicate this study using PhD students and postdocs with a

temporary contract to see if they perceive higher levels of work pressure and competition that lead to lower work engagement.

Conclusion

This research showed that a culture of individual excellence and a cohesive culture had no effect on work engagement of early-career academics. However, highly participative cultures positively influenced the work engagement. Similarly, the influence of supervisor support on the work engagement of early-career academics is high in academic cultures that are characterised with high participation and low work pressure. Lastly, the high personal ambition of early-career academics may influence the perception on the individual excellence culture.

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Appendices

Appendix 1: Introduction and constructs with items of the questionnaire T1 and T2 Study 1

How do assistant professors evaluate the organizational culture and their supervisor? And does this relate to their work experience (e.g., work stress) and ambitions to advance within the university? The aim of this study is to gain insight into these matters and provide practical tools for the HR policy of the UU. **Participate and tell us about your experiences!**

Completing this questionnaire will take **10-15 minutes**. **If you complete the questionnaire, you have the opportunity to win one of six €50 coupons for Bol.com. While completing the questionnaire on a smartphone or tablet is possible, completing it on the computer is easier.** Your answers are completely **anonymous** and cannot be connected to you personally. With each question it is possible to choose not to answer. Participation in this study is completely voluntary; you can decide to stop participation at any time. Of course, for the quality of our data it is best if you complete the entire questionnaire.

Privacy and reporting

Your data will be collected anonymously, processed confidentially and stored in a secure environment in accordance with the privacy regulations and the data storage protocol of Utrecht University (UU). The results of the study will be communicated at group level to the director of Human Resources at UU. For example, it will be reported whether there are differences between men and women at different faculties, but only when the groups consist of at least 20 respondents. This means that the findings can never be traced back to individuals or small groups of employees. In addition, results of this study may be published in scientific journals. For these publications the same rules concerning confidentiality apply.

Asked questions:

Work pressure (1)	Performance comes first
2	There are clear performance standards
3	There is performance pressure
4	Emphasis is on 'wanting to excel'
5	People demand a lot from each other
6	High demands are placed on the employees
Competition (1)	Employees themselves want to be 'the best'
2	An atmosphere of competition exists between employees
3	Mutual competition is allowed
4	Employees strive to perform better than others
5	Employees do a lot to make their mark
6	Employees are challenged to compete with others
7	You have to prove yourself
Peer cohesion (1)	There is a collegial, supportive atmosphere
2	The unity of the group comes first
3	Employees not only meet the job requirements, but also fit in the group
4	Team membership is important

5	An atmosphere of loyalty is present
6	There is a clear 'team membership
7	Managers and employees trust each other
8	Employees are interested in each other's work
9	There is a lot of laughter
10	Attention is paid to introducing new employees
Participation (1)	When taking decisions, the interests of all employees are taken into account
2	Employees are given the opportunity to develop their own initiatives
3	Employees can influence the decisions that need to be made
4	Employees are encouraged to contribute to decision- making
5	Communication is a 'two-way street' between management and employees
6	There are few secrets for employees
Supervisor support (1)	My supervisor sees my qualities
2	My supervisor helps me in my career within the UU
3	My supervisor compliments me about my work
Work engagement (1)	I am enthusiastic about my job
2	My job inspires me
3	I am proud of the work that I do
Turnover intentions	On a scale from 0% to 100%, how high do you estimate the chance that you will still be in academia in 5 years' time?

Note. All items in red were excluded from the study, as result of the factor analysis.

Appendix 2: Factor analysis of the four dimensions of organisational culture

Questionnaire item	Factor loading			
	1	2	3	4
Factor 1: Work pressure				
1. Performance comes first	.786			
3. There is performance pressure	.782			
4. Emphasis is on 'wanting to excel'	.735	.391		
5. People demand a lot from each other	.747			
6. High demands are placed on the employees	.815			
Factor 2: Competition				
8. An atmosphere of competition exists between employees		.789	-.313	
9. Mutual competition is allowed		.780		
10. Employees strive to perform better than others		.835		
11. Employees do a lot to make their mark		.768		
12. Employees are challenged to compete with others		.762		
Factor 3: Peer cohesion				
14. There is a collegial, supportive atmosphere			.709	.349
15. The unity of the group comes first			.743	.312
16. Employees not only meet the job requirements, but also fit in the group			.828	
17. Team membership is important			.869	
18. An atmosphere of loyalty is present			.755	.308
19. There is a clear 'team membership'			.851	
Factor 4: Participation				
24. When taking decisions, the interests of all employees are taken into account			.388	.722
25. Employees are given the opportunity to develop their own initiatives				.812
26. Employees can influence the decisions that need to be made				.868
27. Employees are encouraged to contribute to decision- making				.815
28. Communication is a 'two-way street' between management and employees				.820
29. There are few secrets for employees				.683

Note. All effect <.30 have been excluded from the table.

Appendix 3: Email to assistant professors for the invitation to participate in study 2

Beste meneer/mevrouw [naam],

Een aantal jaar geleden is er een groot onderzoek gedaan naar de invloed van organisatiecultuur in de wetenschap op de werkbevoegdheid en carrièrekansen van jonge academici. Voor mijn masterscriptie van arbeids- en organisatiepsychologie ga ik dieper op dit onderwerp in en probeer ik te achterhalen welke aspecten van de organisatiecultuur bevorderend werken of juist beperkend zijn in de energie voor werk, en de motivatie om in de wetenschap te blijven. Om dit te doen hou ik een aantal diepte-interviews met universitair docenten aan de Utrecht Universiteit. Hiervoor heb ik uw hulp nodig.

Wat houdt het in?

- Een interview van 30-45 minuten over de werkcultuur binnen de universiteit
- Vind (door corona) plaats via Microsoft Teams of Google Meet
- Vind tussen vandaag en 3 weken plaats
- Er wordt vertrouwelijk en volledig anoniem met de data om gegaan

Wat heb ik eraan?

- Een reflecterend gesprek over de organisatiecultuur van jouw afdeling
- Mogelijkheid om de kwantitatieve resultaten van mijn onderzoek uit eerste hand te horen
- Een samenvatting van de scriptie eind juni

Ik hoor graag of u wilt meewerken aan dit interview en wanneer het u zou schikken om het interview te houden in de komende weken.

Met vriendelijke groet,

Stijn Analbers

Appendix 4: Interview protocol study 2

Introductie

Welkom [naam participant]

Bedankt voor het deelnemen aan dit interview. Mijn naam is Stijn Analbers. Ik ben een student Arbeids- en Organisationspsychologie aan de Universiteit Utrecht. Een aantal jaar geleden is er een groot onderzoek gedaan naar de invloed van organisatiecultuur in de wetenschap op de werkbevlogenheid en carrièrekansen van jonge academici. Voor mijn masterscriptie ga ik dieper op dit onderwerp in en probeer ik te achterhalen welke aspecten van de organisatiecultuur bevorderend werken of juist beperkend zijn in de energie voor werk, en de motivatie om in de wetenschap te blijven. Het doel hiervan is om uiteindelijk aanbevelingen te doen ten opzichte van een gewenste bedrijfscultuur. Ik zal een aantal vragen stellen over hoe jij de organisatiecultuur ervaart en de eventuele gevolgen hiervan.

Vooraf is het belangrijk om nog even het volgende te vermelden. Er zijn geen goede of foute antwoorden, ik ben puur geïnteresseerd in jou ervaringen, opinie en ideeën. Er wordt vertrouwelijk met de data omgegaan. Jouw naam zal niet in het rapport genoemd worden en dit interview zal gelijk worden geanonimiseerd. Dit interview zal ongeveer een half uur tot driekwartier duren.

- Vind je het erg als ik het interview opneem? De opname zal gelijk na het uitwerken van het interview verwijderd worden.
- Heb je vooraf nog vragen?
- Zullen we beginnen?

Fase 1: Algemene informatie

10 min

1. Kan je me iets vertellen over je functie?
 - a. Hoeveel uren per week heb je volgens je contract? En is dit een vast of tijdelijk contract?
 - b. Hoe ziet je taakverdeling er bijvoorbeeld uit in termen van onderzoek, onderwijs en overige organisatie taken?
2. Hoe lang werk je al in deze functie en hoe lang zit je al bij de universiteit?
3. Heb je nog op andere universiteiten gewerkt?
4. Als jij jezelf zou moeten omschrijven; wat voor type wetenschapper ben je dan?
 - a. Wat vind je belangrijk in je werk?
 - b. Waar ligt je expertise, of waar komen je collega's naar jou toe voor hulp?

Fase 2: Organisationscultuur

15 min

5. Welk onderdeel van jouw werk wordt benadrukt door andere als erg belangrijk?

6. Wat maakt iemand een goede onderzoeker bij deze universiteit?
7. Als jij de organisatiecultuur binnen je afdeling zou moeten omschrijven, wat is dan kenmerkend?
8. Wat wordt er binnen jouw afdeling verwacht qua prestatie die je moet afleveren? (Norm hard werken) *[Voorbeeld vragen]*
 - a. In hoeverre ervaar je druk om hoog te presteren?
 - b. Heb je genoeg tijd om binnen je contracturen al je taken uit te voeren?
 - i. Zo ja, hoe doe je dit?
 - ii. Zo nee, waarom lukt dit niet?
 - c. Wat vind jij van de huidige werkdruk bij jouw vakgroep?
 - d. Onder welke omstandigheden zouden jouw prestaties nog beter worden?
 - i. En hoe zou dit eruit zien?
9. Binnen de afdeling, in hoeverre heerst er een gevoel dat iedereen beter wil presteren dan anderen? *[Voorbeeld vragen]*
 - a. Geldt er binnen jouw afdeling ook een atmosfeer van elkaar uitdagen en streven naar de beste prestatie?
 - i. Hoe uit zich dit?
 - b. In hoeverre ervaar jij jouw afdeling als competitieve omgeving?
 - i. Hoe uit zich dit?
 - ii. Op welk vlak uit zich deze competitie?
10. Vind jij dat er op de afdeling waar je werkt sprake is van onderlinge collegialiteit?
 - a. Hoe uit zich dit?
11. En hoe staat het met de samenwerking tussen mensen?
12. In hoeverre heb je het idee dat de mens boven de prestatie wordt gesteld?
13. Hoe zit het met inspraak in beslissingen? *[Voorbeeld vragen]*
 - a. Wordt er binnen de afdeling de meningen gevraagd van iedereen en meegenomen in beslissingen die er wordt genomen?
 - b. Wordt zelf initiatief tonen gewaardeerd?
 - c. Heb jij het gevoel dat je gehoord wordt?
 - i. Heb je hier een voorbeeld van?
 - d. Voel je dat je betrokken bent bij de beslissingen die er worden gemaakt?

Parafraseren

Dank je, dit was het eerste deel van het onderzoek. Als ik goed begrijp ervaar jij de werkcultuur als In het tweede deel gaan we vooral kijken wat het effect hiervan is, en hoe jij graag de ideale organisatiecultuur ziet.

Fase 3: Werkbevoegenheid & intenties om universiteit te verlaten

10 min

14. Wat is het gevolg van de organisatiecultuur binnen je afdeling op jouw werklust?
 - a. Wordt je juist gestimuleerd of gedemotiveerd door de cultuur?
15. Ben je trots op het werk dat je doet?
 - a. Hoe merk je dit (niet)?
 - b. Heeft de cultuur een invloed op hoe graag jij je werk doet?
16. Hoe zie jij de toekomst van jou voor je bij de universiteit?
 - a. Verwacht je hier nog lang te werken?
17. Heb je ambities om uiteindelijk hoogleraar te worden?
18. Zie je jezelf ook wel eens buiten de universiteit werken?

Fase 4: Ideale werkcultuur

10 min

19. Hoe ziet voor jou de ideale werkomgeving en werkcultuur in de wetenschap eruit?
 - a. Zou je dit kunnen omschrijven?
20. Wat is voor jou een goede prestatie als wetenschapper?
 - a. Hoe zien je ideale collega's eruit?
21. Wat moet er volgens jou gebeuren om de werkcultuur in de wetenschap gezonder te maken?
22. Welke rol speelt je supervisor hierin?
23. Hoe zou je supervisor kunnen bijdragen aan een positievere werkcultuur?
 - a. Hoe uit zich dit?
24. Ervaar je op dit moment ook al deze steun van je supervisor?
 - i. Hoe merk je dit? *[Vraag voorbeeld]*

Fase 5: Afsluiting

3 min

25. Zou je verder nog iets willen toevoegen aan wat hiervoor is gezegd?
26. Wat vond je van het interview?
 - a. Heb je nog tips voor volgende interviews?

Ik wil je hartelijk bedanken voor het deelnemen aan dit interview en je tijd. Zou je graag na afloop van dit onderzoek nog een samenvatting of kopie van de scriptie willen ontvangen?

Appendix 5: Code structure with open, axial and selective codes

Open codes

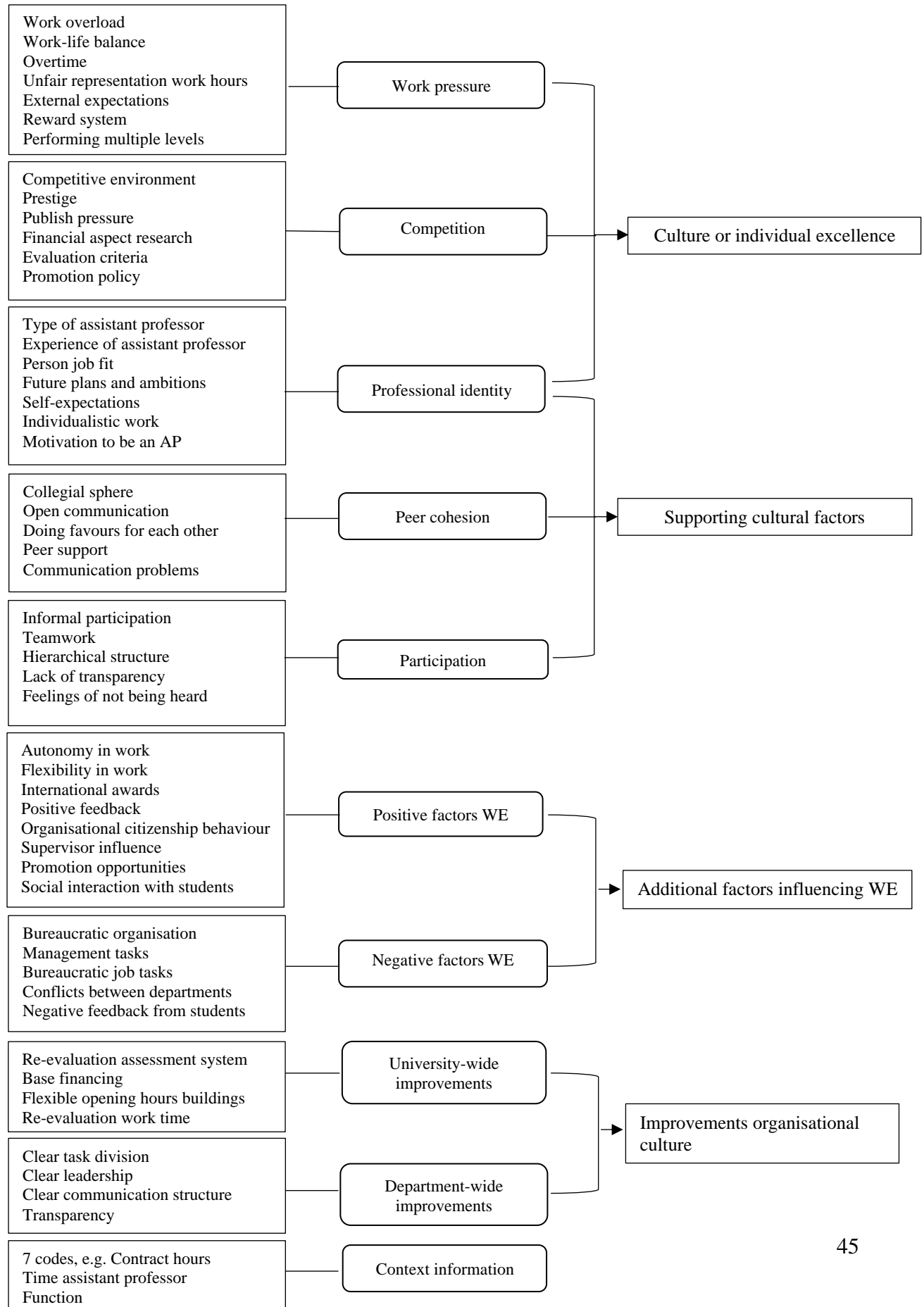
(61 codes, 270 quotations)

Categories (axial codes)

(61 open codes merged into 10 categories)

Selective themes

(4 selective themes)



Appendix 6: Codebook of the open codes

Open codes	Definition	Example
Autonomy in work	Description about the perceived autonomy in the work of the assistant professor	<i>"I get a lot of space to organise the things that I find interesting to do. I can set up my own research and do the things I like".</i>
Base financing	Description about the wish to have more financials available when applying for a grant	<i>"I would like if there was a higher basic level of financing. For every grant that you request, only 10% gets accepted. You have to apply for ten grants to get one."</i>
Bureaucratic organisation	Description about the organisation being bureaucratic	<i>"It is mostly bureaucratic, about what is possible in education and how you can shape the education. This could be so much more interesting and nicer"</i>
Bureaucratic job tasks	Tasks that are not related to the core tasks of the assistant professor	<i>"I think we should receive a little bit more trust. I need to hand in every little receipt if I bought a coffee for my research. So little trust even for these small amounts of money that we need to declare."</i>
Clear leadership	The wish for the assistant professor to have clear leadership	<i>"I think if you are the head of the department, then you need to be here at least once or twice a week. But they just aren't."</i>
Clear task division	The wish for the assistant professor to have a clear task division	<i>"The whole university is just chaos. I am part of this department, but also related to the other department. I never know who to ask for certain things. Nobody feels responsible for their tasks, it is just chaotic."</i>
Collegial	Description about colleagues being collegial to one and another	<i>"I have a collegial connection with the people, helping each other and speaking up when it becomes too much"</i>
Communication problems	Description about communication problems in the department	<i>"I would like if there was a better communication. About people being hired and so. Or that they send an email about the articles being published by our colleagues. I would like to read that."</i>
Competition	Description about competition	<i>"You have a lot of people that wants to be better than others, or be a better version of themselves"</i>
Competitive environment	Description about the competitive environment in the department	<i>"If you only look at all the people that go hired here, they already had to survive in an extremely competitive international field."</i>
Conflicts between departments	Description about a conflict between departments	<i>"In my position its fine. But our professors cannot sit at the same table. And you notice that this conflict has an impact on our PhD students."</i>
Contract hours	Amount of hours that someone works for the university	<i>"I have a contract of 40 hours, oh wait, I believe it is 38".</i>
Difference between assistant professors	Describing interpersonal differences	<i>"They tell me, 'oh but I did the same thing', but if they have one child less, be a man and don't have six PhD students, then they don't understand it"</i>
Different universities	Describing the different universities that an assistant professor worked at	<i>"I worked at the University of Amsterdam, University of Leiden and in Istanbul."</i>
Division work hours	Describing their hour division according to the contract	<i>"I have been accepted for 35% of the time research, 35% of the time education, and 30% management functions."</i>
Doing favours for each other	Reciprocal relationship between assistant professors and academic staff in doing favours for each other	<i>"You notice that people do favours for each other. For example a full professor that takes me on his grant application."</i>
Evaluation criteria	Criteria where the academic is being evaluated on	<i>"Eventually, it is proposals to get in money for research. Because without money, the department can't survive."</i>

Excellent researcher	Description about the perception of an excellent researcher	<i>"I think it is mostly the responsibility that you feel... to share the social and scientific results to the outside world. Being an scientist with integrity"</i>
Experience of the assistant professor	Description about the level of experience of the assistant professor	<i>"For me, I spend way more time in education. But it is the first year that I thought the course. I think it is different for an experienced teacher."</i>
External expectations	The perceived expectations that an assistant professor feels	<i>"That you provide good education, and good research. The expectation is also that you publish"</i>
Feeling of not being heard	The feeling that an assistant professor has about not being heard	<i>"They mentioned, 'ah yeah that would be good in the future', but that was it. There was no concrete plan. Then it just faded away."</i>
Financial aspect research	Description about the financial aspect in research	<i>"It is not being mentioned explicitly, but money is really important. If you can collect a lot of grants. We are an expensive department with a lot of costs, so getting a lot of grants is important."</i>
Flexibility	Description about the perceived flexibility of the assistant professor	<i>"Something that I think is really nice, is the trust that we have here and that we don't get checked upon our work all the time. If I have to stay home on a Monday morning because my daughter is sick, then it is no problem"</i>
Flexible opening hours buildings	Description about the wish for flexible opening hours of the university buildings	<i>"The buildings are open from 7 till 7. That is not possible with us, complete madness. I could never finish my PhD if I could not work in the evening. They should provide the location for much more hours".</i>
Function	The description of the function of the assistant professor	<i>"I am an assistant professor, that exists out of research and education."</i>
Future plans and ambitions	Description about their future plans or ambition	<i>"I expect that I will be working at the UU in the future. We took our whole family to here, and bought a house. So the plan is to stay here till my retirement."</i>
Hierarchical structure	Description about the management structure in the department	<i>"It is obvious who are the big bosses here and who are the small ones. I am a small one, so I know my place"</i>
Individualistic work	Description about the work being solitary	<i>"Every assistant professor is working relatively on its own. It is a lot of 'island' work."</i>
International awards	Description about an received international award	<i>"I got an early career award from the American physical union, by far the biggest association in our field. That is quite some appreciation"</i>
Informal participation	Description about the informal participation in a department	<i>"Decisions are made where I don't have official influence, but I do have some unofficial influence. That is because our department is small and I know everybody"</i>
Lack of transparency	Perceived feeling of a lack of transparency	<i>"I call it for years, there is a lack of transparency. It is often unclear about who made the decision about what and why."</i>
Management task	Description about the management tasks that applies with a job	<i>"This enormous amount of work you need to do, going through 100 emails, and that is not even about the research. It is more a management job, and well, how fun is that?"</i>
Most important work aspect	Description about the most important work aspect	<i>"That is still doing research, and publishing"</i>
Motivation to be an assistant professor	Reason why an assistant professor is motivated or gets motivation from	<i>"Well, the reason I that I chose this work is doing research. Doing research in topics that I find important, and what interests me. That is where I get my motivation from"</i>
Negative feedback from students	Description about negative feedback received from (PhD) students	<i>"My experience is that PhD students are not realistic and demand more. Then you hear more negative than positive things"</i>
Open communication	Description about the open communication within the department	<i>"I think the open communication here is nice. That I will just follow our management because I trust them and don't have the feeling that they use me. They openly discuss everything with us"</i>

Organisational citizenship behaviour	The perceived feeling of OCB of the assistant professor	<i>"There are people that feel responsible to do these kinds of tasks, and those who do not feel responsible. I usually feel responsible to take these tasks upon me."</i>
Overtime	Description about an assistant professor putting in more overtime	<i>"In principle, I am always working more than 38 hours. My perspective is that every academic sees the contract hours as guideline, nobody counts the hours"</i>
Participation	The ability to participate as assistant professor in decision making	<i>"I have the feeling that people listen to me. But still it is a hierarchical structure"</i>
Peer cohesion	The feeling of cohesion among academics	<i>"I have been gone for a while, but now I came back. But I see the people as family."</i>
Performing multiple levels	The feeling that an assistant professor needs to be performing at multiple facets in their job	<i>"You have to be a star in everything, research, education, getting grants to finance your own research."</i>
Person job fit	Description about how well the job suits with the person	<i>"At the University of Amsterdam, I was at a different department. Thematically, that didn't suit me. I am really an expert in [names job]. So now I am really in a better place that suits me well."</i>
Point for improvement	The assistant professor points out an point of improvement for the university	<i>"I would want more time for education, or at least have enough hours on paper to deliver the current education"</i>
Positive feedback	The positive feedback that that an assistant professor receives	<i>"It was explicitly mentioned at my B&O: 'your effort and perseverance is being appreciated'"</i>
Prestige	Description about the prestige that is important in the department	<i>"That Veni scholarship was seen as something.... prestigious at our department."</i>
Promotion opportunities	Description about the available promotion opportunity	<i>"At Utrecht they made it less hierarchical. Everybody has its own path, and there can be multiple full professors next to each other".</i>
Promotion policy	Description about the promotion policy	<i>"Our promotion policy is mostly based on the collecting of grants and publishing."</i>
Proudness	The feelings of proudness, perceived by the assistant professor	<i>"When I got the award, I felt really proud. Then you think, 'ah I am doing something good'"</i>
Publish pressure	Description about the perceived feeling to publish	<i>"People want to publish fast, the pressure is high. Sometimes even that people don't want to tell about their research to others, scared that they might steal ideas."</i>
Re-evaluation assessment system	Description about the current assessment system and the feeling that it needs to be changed	<i>"Eventually, in my evaluation conversations are the publications more important than the student evaluations. So, it is about what you write and what you do with your research. That is in the end what they assess me on, and that should be changed".</i>
Re-evaluation work time in education	Wish that the work time should be a fair representation of the actual work hours	<i>"I work 0.9, because if I would work fulltime, then I would work way more hours. That is mostly because the guidelines of the education are based on nothing, completely not representing how it actually is."</i>
Reward system	Description about the reward system that lead to high work pressure	<i>"The articles is what you are rewarded on. If you have not enough first or last author articles, then you are not being rewarded with an indefinite contract or promotion."</i>
Self-expectations	Description about the self-expectations	<i>"After the Veni, it is logically that I go for the VEDI, but that is something I want to do. So it is not uncomfortable."</i>
Social interaction with students	Description about the interaction between the	<i>"If the lectures are given in the same building, then you walk in the halls and see the students. It is easier to talk to the students that way. It makes it more informal."</i>

	assistant professor and students	
Supervisor influence	The influence of the supervisor on the feelings of the assistant professor	<i>"I would want if he was a bit more involved, but he is not that type of guy."</i>
Type of assistant professor	Description about the assistant professor him/herself as an academic	<i>"I am more a field researcher and writer, that is how I would describe myself"</i>
Teamwork	Description about teamwork among academics	<i>"I do a lot of team teaching, teaching together with a colleague one course"</i>
Unfair representation of work hours	Description about the unfair representation of the work hours in comparison to the hours on paper	<i>"The official ranking gives that many hours, but that is ridiculous. When I read those hours, I was almost losing it"</i>
Work overload	Description about the overload of work that the assistant professor has to do	<i>"I had to start a new group of PhD students, while finishing the others, everything was new, the education. It was really a lot"</i>
Work pressure	The feelings of work pressure perceived by the assistant professor	<i>"I worked half a year on those courses. That was almost every evening and in the weekend as well."</i>
Work-life balance	Description about the balance between work and private life	<i>"There are a lot of people that wanted an academic career but thought they could not have children at the same time. I still see this with my PhD students."</i>