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Our endangered elite:
A quantitative study to assess the relationship between burnout,
job design, affective commitment and workplace boredom
among higher education students



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ABSTRACT

Our endangered elite: A quantitative study to assess the relationship between burnout, job design, affective commitment and workplace boredom among higher education students

The present study aims to: (I) assess the relationship of burnout, affective commitment and workplace boredom; (II) evaluate the associations between job design characteristics, boredom and its dimensions; and (III) understand whether burnout mediates the relationship between job design, affective commitment and workplace boredom - among a sample of 203 higher education students. Hypotheses were tested and results supported: (I) the mediating effect of cynicism in explaining the relationship between task autonomy, task variety, task significance, social characteristics and (i) affective commitment as well as (ii) workplace boredom; and (II) the mediating effect of professional efficacy in explaining the relationship between task autonomy, task variety, task significance, social characteristics – on the one hand - and workplace boredom on the other. Implications and limitations are discussed.

Keywords: Job Design, Burnout, Affective Commitment, Workplace Boredom

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1. INTRODUCTION

According to UNESCO the number of individual's receiving formal education within the next thirty years is expected to excel the number of those in all human history so far (Eurostat, 2016). Specifically, the gross enrolment ratio in higher education has drastically risen from 10% in 1970 to 32.9% in 2013 (World Bank, 2016).

Along with the rise of such student enrolment, research has consistently found rising stress level in students (Abouserie, 1994; Felsten & Wilcox, 1992; Saipanish, 2003). As Coughlan (2015) explains, traditional factors that raise stress levels among students – the fear of loneliness, not living up to parental expectations, and financial concerns to name a few – over the years have been extended by an increased competitive business environment. Overall, the societal pressure and uncertainties about the job market have largely amplified stress levels among students. Those distressed or dissatisfied students are less likely to perform as well as their peers, have lower self-esteem and are more prone to drop out from school (Cotton, Dollard & de Jonge, 2002). Stress severely impacts students psychological and physiological conditions resulting in a higher probability to suffer from anxiety, depression – possibly increasing suicidal tendencies (Bayram & Bilgel, 2008; Gilai, 2016; Hudd, Dumlao, Erdmann-Sager, Murray, Phan, Soukas & Yokozuka, 2000).

Consequently, it is imperative for schools to act as a catalyst of well-being and design their studies according to the satisfaction of their students. Hackman and Oldham's (1976) research set the basis to establish several attributes that identify psychological states and outcomes of job design. Due to students working within hierarchical structures, the way their 'job' is designed (e.g. the definition of their tasks and given levels of control and support) impacts performance, satisfaction levels, and mental health (Cotton et al., 2002). Job design, in particular, refers to "[...] the process of deciding on the contents of a job in terms of its duties and responsibilities, on the

methods to be used in carrying out the job, in terms of techniques, systems and procedures, and on the relationships that should exist between the job holder and his superior subordinates and colleagues” (CIPD, 2006, p.1). Conceptualizing that a student’s daily routine is similar to regular work, this paper uses job design as an institutional core function of higher education (Winefield, 1993) and considers the job resources, task autonomy, task variety, task significance and social characteristics to be relevant motivational and productive elements to assess student well-being and work-related outcomes (ibid.)

Along with students who need to adjust quicker, perform better and thus outperform their peers, psychological well-being among higher education students has worsened resulting in an increasing number of students suffering from psychological distress (Center for Disease Control and Prevention, 2016; Winefield, Gill, Taylor & Pilkington, 2012). As one severe form of such psychological distress, burnout describes a syndrome that combines high emotional exhaustion and high depersonalization with low personal accomplishments (Maslach & Jackson, 1986). This was a phenomenon which had only been found in a limited variety of industries (Maslach et al., 1996) but nowadays concerns more and more students (Balogan, Hoerberlein-Miller, Schneider & Katz, 1996; Gold & Michael, 1985; Kuittinen & Meriläinen, 2011; Lin, 2012; Schaufeli, Martinez, Pinto, Salanova & Bakker, 2002).

The levels of stress experienced by students are also likely to influence their attitudes towards the school (organizational affective commitment) and the job (workplace boredom). The former describes an emotional attachment and identification with ideals between an organization and an individual (Meyer & Allen, 1997), whereas the latter explains a lack of work or interest, resulting in consequent work dissatisfaction (Rothlin & Werder, 2007). Burnout and its dimensions may not only be detected among psychologically distressed students, but also be identifiable by other work-related outcomes (Maslach & Leiter, 2009) and therefore can impact organizational

affective commitment and workplace boredom. Nevertheless, little research has assessed the associations between higher education job design and levels of student well-being and their effects on organizational affective commitment and workplace boredom. For a better understanding, Figure 1 graphically describes all the relationships this research intends to analyse.

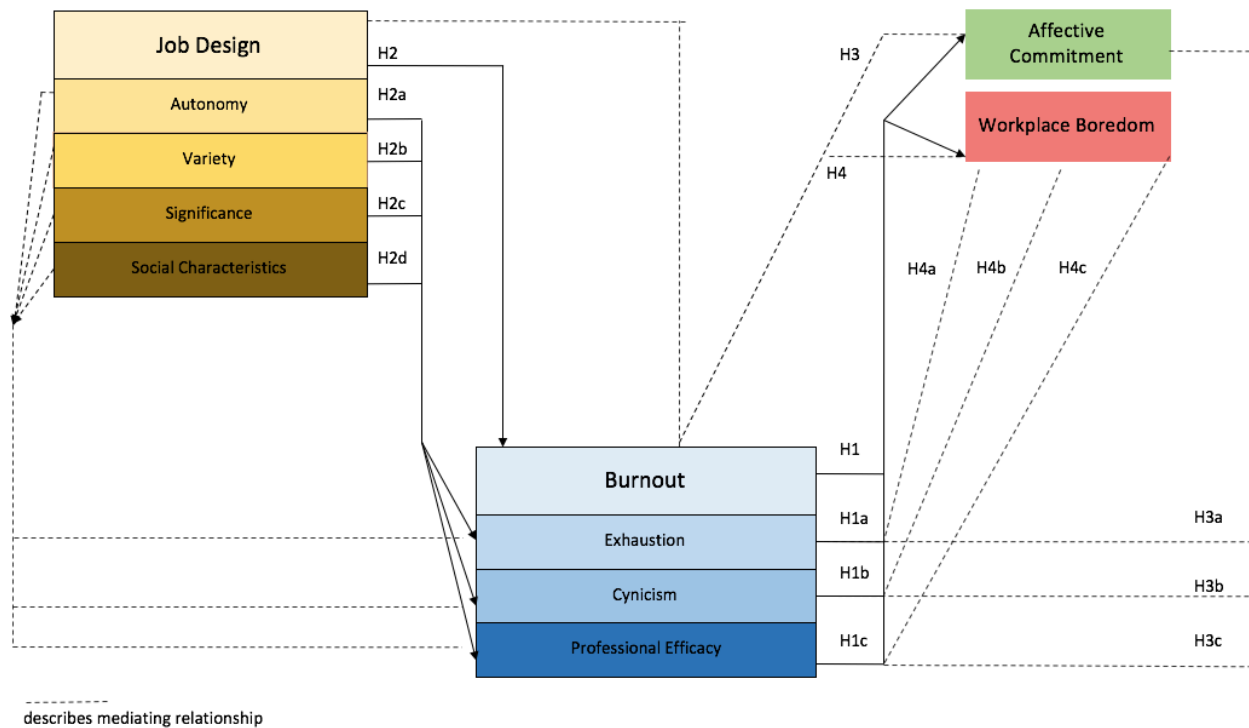


Figure 1: Visualization of the research model

2. LITERATURE REVIEW AND HYPOTHESES

Burnout, affective commitment and workplace boredom

Alongside social transformation and change over the last decades, most national governments have established certain minimum safety and health standards for the workplace. These standards, however, primarily address physical working conditions and only marginally touch upon the psychological or mental strains in regards to the workplace thus contributing to the establishment of several forms of severe psychological stress being manifested in employees within an organization (Harnois, Gabriel & WHO, 2000). This psychological stress over a long period of

time can heavily impact the workers' psychological well-being (Schaufeli, Maslach & Marek, 1993) and health (Johnson, 2013) resulting in the occurrence of burnout symptoms (e.g. insomnia or anxiety) (Weber & Jaekel-Reinhard, 2000). Burnout-related research now gets much attention from researchers all over the world and is helping the subjects of coping with, combating and preventing the symptoms associated with burnout. Furthermore, researchers find that not only workers are affected but see an increase in students with burnout symptoms as well (Maslach, 1993; Schaufeli et al., 1993). Literature, hence, shows that burnout is not simply American or Western, but a global social phenomenon (Golembiewski, 1996; Perrewé, Hochwarter, Rossi, Wallace, Castro, Ralston, Westman, Vollmer, Tang & Wan, 2002) influenced by national values and cultures (Pines, 2003). Along with this 'internationalization' of burnout, Maslach and Jackson (1981) trace the phenomenon back to emotional exhaustion, depersonalization and less personal accomplishment amongst human service personnel and later, more generically, associated burnout – and as such exhaustion, cynicism and professional efficacy - to all kinds of occupational groups (Maslach, Jackson & Leiter, 1996). Exhaustion assesses fatigue and cynicism reflects on the negative attitude towards work in general, whereas professional efficacy evaluates the belief in the own social and non-social work-related accomplishments (ibid., Schaufeli & Salanova, 2007).

Previous research highlights the associations between burnout and work-related outcomes. Studies confirm that burnout increases job dissatisfaction, absenteeism, high turnover, likelihood to leave the job and leads to a decrease in organizational commitment among employees (Schaufeli & Enzmann, 1998). An often neglected concept in regard to burnout is organizational affective commitment – an attitude of attachment towards an organization – which is at the forefront of the employee to maintain organizational membership (Meyer & Allen, 1997). Despite the fact that academic literature identifies two other forms of commitment (normative and continuance commitment), only affective commitment presupposes an emotional liaison and identification with

organizational goals and values. As such, the goals and values are often designed because of the workers' perceptions of HR practices (Lepak, Liao, Chung & Harden, 2006). In addition, affective commitment can be considered as being mostly related to favourable behavioural outcomes in workers (Meyer, Stanley, Herscovitsch & Topolnytsky, 2002).

Earlier research demonstrates relationships regarding psychological well-being, namely burnout and affective commitment among workers (Khatibi, Asadi & Hamidi, 2009). Akpinar, Yunus and Okur (2013) find high levels of emotional exhaustion to negatively impact affective commitment in the emerging service industry – which is much in line with preceding research (Boyas & Wind, 2010). Moreover, cynicism is found to be negatively correlated with organizational affective commitment among nurses (English & Chalon, 2011) as well as with less organizational identification and, hence, lower affective commitment among academic staff (Bedeian, 2007). Studies that associate professional efficacy with organizational affective commitment are scarce, with research mainly focusing on the positive links between general self-efficacy on work-related commitment (Bandura, 1994) or on organizational self-efficacy positively correlating with general organizational commitment (Schyns & von Collani, 2010). Academic discourse, however, lacks the associations between burnout (exhaustion, cynicism and professional efficacy) and organizational affective commitment among students.

Workplace boredom has for a long time been a neglected emotional state, with the consequences being similar to the ones workers experience when they are burned out (Tiberio, 2015). Being subject to bad psychological well-being and health (Maslach, Jackson & Leiter, 2009), this second work-related outcome should be subject to further analysis. Discussing the antecedents of workplace boredom, a monotonous (O'Hanlon, 1981; Smith, 1981), formalized (Loukidou, Loan-Clarke & Daniels, 2009; Podasakoff, Williams & Todor, 1996) and routinized work-routine (Mann, 2012) negatively impacts workers psychological and physiological well-

being as those factors contribute to workplace boredom (McBain, 1961). Consequently, psychological unwell-being related to work – implying high work-strain and occupational stress – is positively correlated with home and workplace boredom (Matthews, Räikkönen, Everson, Flory, Marco, Ownes & Lloyd, 2000). However, no direct relationships between burnout (exhaustion, cynicism and professional efficacy) and workplace boredom are found among higher education students. This paper, nevertheless, hypothesizes a direct association between those factors, affective commitment and workplace boredom. Individuals, de facto, can be less committed and more bored by a repetitive, yet busy, working routine – lacking meaningfulness and thus excitement and loyalty for their job (de Rond, 2012; Hoare, 2012). Not being perceived as a valuable contributor towards an organization especially establishes boredom among high performers (Mael, 2012). In light of this research it can therefore be assumed that students who constantly face an exhausting study routine, have cynical tendencies and do not believe in their own abilities to achieve desirable study results are likely to be less committed to their organization and even experience long-term workplace boredom. This paper, therefore, suggests high exhaustion and cynicism paired with low professional efficacy to positively correlate with workplace boredom among higher education students; leading this study to test the following hypotheses:

H1: Burnout is associated with less affective commitment and more workplace boredom

H1a: Exhaustion is associated with less affective commitment and more workplace boredom

H1b: Cynicism is associated with less affective commitment and more workplace boredom

H1c: Professional Efficacy is associated with more affective commitment and less workplace boredom

Job design and burnout

Decades of studies, particularly since the 1980s, focus on the antecedents of burnout (Brotheridge & Grandey, 2002; Castanheira & Chambel, 2010; Castanheira & Chambel, 2010b; Cordes & Dougherty, 1993; Jackson, Schwab & Schuler, 1986; Toppinen-Tanner, 2011; Shepherd, Marchisio, Morrish, Deacon & Miles, 2010), finding that every occupation is characterized by its own risk factors in regard to these experiences. Consequently, suffering from exhaustion, cynicism and professional efficacy can be directly related to specific job characteristics (Zapf, Vogt, Seifert, Mertini & Isic, 1999). This study proposes the analysis of burnout by using the job demands and resources model – mainly to evaluate how job design, per se, affects levels of psychological well-being of higher education students.

In their research, Demerouti, Bakker, Nachreiner & Schaufeli (2001) conclude that certain working conditions enhance the likelihood to suffer from burnout. They identify job demands as physical, social or organizational job characteristics that involve a great deal of mental or physical efforts, directly associated with physical or emotional costs. Job resources relate to psychological, physical, social and organizational job characteristics that help in the achievement of work-related goals. They reduce this associated psychological or physical costs and enhance self-development (ibid.). The combination of high job demands and low job resources are found to largely impact exhaustion and disengagement from work among employees which can be expressed by cynical tendencies (ibid.), implicating an immediate, accumulative or delayed effect on the well-being of workers and burnout (Dollard, Shimazi, Nordin, Brough & Tuckey, 2014).

Later research establishes job demands to mainly affect exhaustion (Bakker, Demerouti, Taris & Scheurs, 2003; Houkes, Winants & Twellaar, 2008) and job resources to be directly linked to cynicism and professional efficacy (Bakker et al., 2003; Jourdain & Chênevert, 2010; Lee, Lovell & Brotheridge, 2010; Martinussen & Richardsen, 2006). Similar research goes in line with

those findings, linking job demand and control (Karasek, 1979) to work strain levels (de Lange, Taris, Kompier, Houtman & Bongers, 2003; Theorell & Karasek, 1996) by finding that high demand, low control, low support working environments tend to nurture ill-health, bad psychological well-being (Karasek, 1998) and burnout (Schaufeli & Buunk, 2003).

Bakker & Demerouti (2007) identify job resources to be found at an organizational, social, work-related and task-related level. Due to the scope of this paper, not all job resource dimensions can be considered in the following analysis. As such, this paper only assesses the associations between social and task-related job resources with burnout; task autonomy, task variety, task significance, and social characteristics should be subject to further analysis. Earlier studies on the influence of those job resources on well-being, directly relate autonomy (Castanheira & Chambel, 2010b; Lange et al., 2003; Zapf, 2002), social support (Tofi, Flett & Timutimu-Thorpe, 1996), task variety (Zaniboni, Truxillo & Fracarolli, 2013) and task significance (Maslach & Jackson, 1986) to be associated with less burnout.

The above shows that autonomy is likely to influence workers' ability to meet job-related demands as well as serve as a stipulator for personal growth. Task variety, significance (Hackman & Oldham, 1976) and social characteristics (Johnson & Hall, 1988) are contributing to individual's development and thus inevitably provide 'goal-achieving' support. Consequently, positive job design can largely contribute to workers' attitude towards work in general and their perception about being able to meet both social and non-social study-related goals. As such, this study assumed job demands as part of job characteristics, and job characteristics as part of job design to reduce levels of cynicism and professional efficacy. Moreover, as those job resources support the reduction of job demands, this research further expects social and task-related job resources to minimize exhaustion.

Whereas Bremner and Carrière (2011) find task identity to be negatively correlated with professional efficacy and skill variety to enhance meaningful work perceptions, leading to less exhaustion and professional efficacy among nurses, it is unclear whether such associations can be generalized. Considering all of that, this paper analyses the effects of job design on burnout among students, leading to the following hypotheses:

H2: Job design is associated with less burnout

H2a: Autonomy is associated with less exhaustion, less cynicism, and more professional efficacy

H2b: Variety is associated with less exhaustion, less cynicism, and more professional efficacy

H2c: Significance is associated with less exhaustion, less cynicism, and more professional efficacy

H2d: Social characteristics are associated with less exhaustion, less cynicism, and more professional efficacy

Burnout of students: Its mediating role between job design and affective commitment, as well as between job design and workplace boredom

Based on the above, this research on the one hand hypothesises that job design impacts burnout among higher education students, which then correlates with their study-related affective commitment and workplace boredom. Hence, this study goes one step further as it aims at assessing the mediating role of burnout in explaining the relationship between job design and (I) affective commitment as well as (II) workplace boredom among students. Additionally, this research proposes that each burnout dimension (exhaustion, cynicism and professional efficacy) can be

considered as an indirect pathway from job design characteristics (task autonomy, task variety, task significance and social characteristics) to affective commitment and workplace boredom.

To date, there has only been very limited research on the mediating effects of burnout to explain job characteristics and work-related outcomes among students. While various studies deal with the mediating effect of burnout in explaining the relationship between organizational politics and turnover intentions (Huang, Chuang & Lin, 2003), work-life aspects and employee leave (Leiter & Maslach, 2009), as well as job resources and ill-health (Hakanen, Bakker & Schaufeli, 2006), only few touch upon burnout as a mediator in explaining the relationship between job design, affective commitment and workplace boredom.

As one of the few, Koeske and Koeske (1991), consistent with the stress – strain (burnout) – outcome model, find the mediating role of burnout to explain the relationship between several stress indicators and physical and psychological symptoms among students. Supported by this research, this paper assumes that burnout results from stressful job environments with high job demands and particularly contributes to such (Schaufeli & Bakker, 2004). Hence, as job resources reduce job demands and consequently are expected to contribute to less burnout, they could simultaneously be responsible for affecting other work-related outcomes (Leitner & Maslach, 2009), such as affective commitment and workplace boredom among students. As suggested by this, the present research furthermore tests the following hypotheses:

H3: Burnout mediates the relationship between job design and affective commitment

H3a: Exhaustion mediates the relationship between autonomy, variety, significance, social characteristics and affective commitment

H3b: Cynicism mediates the relationship between autonomy, variety, significance, social characteristics and affective commitment

H3c: Professional Efficacy mediates the relationship between autonomy, variety, significance, social characteristics and affective commitment

H4: Burnout mediates the relationship between job design and workplace boredom

H4a: Exhaustion mediates the relationship between autonomy, variety, significance, social characteristics and workplace boredom

H4b: Cynicism mediates the relationship between autonomy, variety, significance, social characteristics and workplace boredom

H4c: Professional Efficacy mediates the relationship between autonomy, variety, significance, social characteristics and workplace boredom

3. METHODOLOGY

3.1 PROCEDURE AND SAMPLE

Aiming at testing the aforementioned hypotheses, an online survey is conducted requiring all respondents to be currently enrolled in an official institute of higher education. The survey is composed of two parts, namely (1) personal information (e.g. gender, age) and (2) a variety of topic-relevant questions centred around job design, burnout, affective commitment and workplace boredom. The distribution of the survey takes place via several social networks and includes an explanation of the nature and intent of this quantitative study. While participation is voluntary, the snowball effect leads to a final sample comprising of 203 completed surveys from higher education students. The respondents originate from 30 different countries, with the most students being German (57.1%), Portuguese (8.4%) and Dutch (5.4%). All the respondents currently either pursue a Bachelor (17.3%), Master (68.9%) or other type of academic degree¹ (13.8%) – with most of the

¹ Other type of academic degree refers to doctoral (e.g. Ph.D.), professional (e.g. J.D.) and associate's degrees (e.g. A.A.).

students studying in Portugal (34.0 %), Germany (28.6%) and the Netherlands (11.8%). 18.7% of the sample is currently enrolled in either their first, second or third year, the majority are in their fourth, fifth or sixth year (75.9%), and the remaining 5.4% are in their seventh, eighth or ninth year of studies. Participants are predominately female (61.6%) and aged from 18 to 31 – with a mean age of 24.2 years (± 1.9 years).

3.2 MEASURES

Job design is evaluated by using twenty-two items from the work design questionnaire from Morgeson and Humprey (2006). Those items are correspondingly scored on a 1 to 5 Likert-type scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5). All scales used are adapted to better suit the intent of this quantitative study (e.g. terms referring to ‘organization’ or ‘work place’ are replaced by ‘school’ and ‘university’, whereas those referring to ‘working’ are replaced by ‘studying’). In more detail, nine items evaluate autonomy (e.g. ‘My studies allow me to make my decisions about how to schedule my work’), four items variety (e.g. ‘My studies involve a great deal of task variety’), four items significance (e.g. ‘The results of my studies are likely to significantly affect the lives of other people’) and the last five items social characteristics (e.g. I have the opportunity to develop close friendships in my studies). The internal consistency reliability coefficients (Cronbach’s α) for this dataset are 0.92, 0.89, 0.86 and 0.86, respectively.

Burnout is evaluated by using the fifteen items from the Maslach Burnout Inventory (Maslach & Jackson, 1996). Those items are correspondingly scored on a 1 to 7 Likert-type scale ranging from ‘never’ (1) to ‘every time’ (7). Burnout presupposes high levels of exhaustion (assessed by five items, e.g. ‘I feel drained up by my studies’) and cynicism (assessed by four items, e.g. ‘I have become less interested in my studies since my enrolment at the university’) as well as

low levels of *professional efficacy* (assessed by another six items, e.g. ‘I can effectively solve the problem that arise in my studies’). Internal consistency reliability coefficients (Cronbach’s α) for this dataset are 0.86, 0.91 and 0.84, respectively.

Affective commitment is evaluated by using the six items from Meyer & Allen’s (1990) affective commitment scale. Those items are correspondingly scored on a 1 to 7 Likert-type scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (7). To validate the results, some of the items of this scale have to be back-translated, with high scores indicating high commitment. To illustrate the nature of the items, example questions would read as follows: ‘I would be very happy to spend the rest of my studies with this school’ or ‘I do not feel like 'part of the family' at my school’. The internal consistency reliability coefficient (Cronbach’s α) for this dataset is 0.84.

Workplace boredom is evaluated by using the six items from Reijseger, Schaufeli, Peeters, Taris, van Beek & Ouweneel’s (2012) Dutch Boredom Scale. Those items are correspondingly scored on a 1 to 5 Likert-type scale ranging from ‘never’ (1) to ‘always’ (5), with high scores indicating high levels of boredom. To illustrate the nature of the items, example questions would read as follows: ‘During studying, I daydream’ or ‘I feel bored with my studies’. The internal consistency reliability coefficient (Cronbach’s α) for this dataset is 0.74.

3.3 STATISTICAL ANALYSIS

Testing the aforementioned hypotheses, this research is based on a path analysis via regression that uses PROCESS software. Such SPSS software macro, renowned for being a computational tool, can estimate and evaluate mediations with multiple mediators, also when operating parallel (Hayes, 2012). By using a normal theory approach (e.g. Sobel Test), it furthermore enables to test the indirect effects ab. As MacKinnon, Lockwood & Williams (2004) recommend, this approach moreover allows a bootstrap approach in order to determine confidence intervals (CIs). As such,

bootstrapped CIs elude power problems, arising from sampling distributions that are either asymmetric or non-normal due to indirect effects (ibid.). Hypotheses were tested in a model which examined the relationship between burnout and affective commitment to school, and workplace boredom (H1), between job design and burnout (H2) and the specific indirect effects from job design through burnout to explain affective commitment to school (H3) and workplace boredom (H4). Age and gender are introduced in the model as control variables. To test these hypotheses, this research estimates a Model 4 in PROCESS (with a bootstrap sample size of 1000), and bootstrap CIs – which are uniformly 95% bias-corrected – for all indirect effects. As proposed by Baron and Kenny (1986), the testing of the mediation hypotheses underlies the multistep approach.

4. RESULTS

4.1 DESCRIPTIVE STATISTICS

As expected, exhaustion and cynicism are negatively associated with affective commitment to the school ($r = -.18, p < .01$ and $r = -.38, p < .001$, respectively) and positively associated with workplace boredom ($r = .35, p < .001$ and $r = .56, p < .001$, respectively), whereas task variety, task significance, social characteristics and professional efficacy are positively associated with affective commitment to the school ($r = .24, p < .001$, $r = .15, p < .05$, $r = .33, p < .001$, and $r = .21, p < .01$, respectively) and negatively associated with workplace boredom ($r = -.34, p < .001$, $r = -.15, p < .05$, $r = -.21, p < .01$, and $r = -.45, p < .001$, respectively). Furthermore, task autonomy, task variety and social characteristics are negatively associated with exhaustion ($r = -.28, p < .001$, $r = -.19, p < .01$, and $r = -.29, p < .001$, respectively), as well as cynicism ($r = -.23, p < .01$, $r = -.39, p < .01$, and $r = -.31, p < .001$, respectively). Task autonomy, task variety, task significance, and social characteristics are positively associated with professional efficacy ($r = .33, p < .001$, $r = .39, p < .001$, $r = .26, p < .01$, and $r = .32, p < .001$, respectively). Means, standard deviations, and correlations are presented in Table 1.

	Mean	S.D.	1.	2.	3.	4.	5.	6	7	8	9	10
1. Age	24,15	1,94										
2. Gender (a)			-0.03									
3. Task autonomy	3,54	0,78	-0.04	-0.02								
4. Task variety	3,59	0,79	-0.12	0,06	0.32***							
5. Task significance	3,02	0,90	-0.03	0,04	0.22**	0.38***						
6. Social characteristics	4,06	0,69	0,03	0,09	0.25***	0.31***	0.20**					
7. Exhaustion	3,29	1,10	-0.06	-0.09	-0.28***	-0.19**	-0.06	-0.29***				
8. Cynicism	2,94	1,48	0.14*	-0.10	-0.23***	-0.39***	-0.30	-0.31***	0.50***			
9. Professional efficacy	5,02	0,94	0,01	-0.04	0.33***	0.39***	0.26***	0.32***	-0.32***	-0.40***		
10. Affective commitment to school	4,31	1,23	-0.01	-0.13	0,05	0.24***	0.15*	0.33***	-0.18**	-0.38***	0.21**	
11. Workplace boredom	2,77	0,66	0,01	-0.06	-0.16*	-0.34***	-0.15*	-0.21**	0.35***	0.56***	-0.45***	-0.26***

Note . N=203;
(a) Dummy variable coded 0 if male and 1 for female;
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 1: Descriptive statistics and study variable inter-correlations

4.2 TEST OF HYPOTHESES

H1 proposes that burnout is associated with less affective commitment and more workplace boredom. Figure 2 shows that, contrary to what this research expects, exhaustion (H1a) is neither negatively associated with affective commitment ($B = 0.01$, $t = 0.04$, $p = 0.97$) nor positively associated with workplace boredom ($B = 0.03$, $t = 0.74$, $p = 0.46$), thereby not supporting H1a. However, as expected, cynicism (H1b) is significantly associated with affective commitment ($B = -0.32$, $t = -4.80$, $p < 0.001$) and workplace boredom ($B = 0.19$, $t = 6.32$, $p < 0.001$), thereby supporting H1b. Professional efficacy is negatively associated with workplace boredom ($B = -0.19$, $t = -4.27$, $p < 0.001$) but not with affective commitment ($B = 0.09$, $t = 0.88$, $p = 0.38$), thereby partially supporting H1c.

Furthermore, results demonstrate that job design is significantly associated with burnout. This research finds that autonomy, variety and social characteristics are associated with less exhaustion ($B = -0.40$, $t = -4.21$, $p < 0.001$, $B = -0.26$, $t = -2.74$, $p < 0.01$, and $B = -0.45$, $t = -4.22$, $p < 0.001$, respectively), less cynicism ($B = -0.43$, $t = -3.31$, $p < 0.001$, $B = -0.70$, $t = -5.74$, $p < 0.01$, and $B = -0.66$, $t = -4.61$, $p < 0.001$, respectively), and more professional efficacy ($B = 0.39$, $t = 4.86$, $p < 0.001$, $B = 0.47$, $t = 6.04$, $p < 0.001$, and $B = 0.45$, $t = 4.90$, $p < 0.001$, respectively), thereby supporting H2a, H2b and H2d. Regarding task significance, this paper finds job characteristics to

be associated with less cynicism ($B = -0.48, t = -4.39, p < 0.001$), and more professional efficacy ($B = 0.27, t = 3.82, p < 0.01$), but not with less exhaustion ($B = -0.08, t = -0.87, p = 0.38$), partially supporting H2c.

H3 and H4 propose that burnout mediates the relationship between job design and affective commitment, and workplace boredom respectively. Earlier results demonstrate that exhaustion is not significantly associated with affective commitment or workplace boredom (H1a), thereby precluding this variable from working as a mediator. Therefore, H3a and H4a are not supported. In what concerns cynicism, results indicate a significant indirect effect of task autonomy, task variety, task significance, and social characteristics on affective commitment (indirect effect = 0.14; 95% CI from 0.08 to 0.27; $z = 2.67, p < 0.01$; indirect effect = 0.20; 95% CI from 0.10 to 0.35; $z = 3.39, p < 0.001$; indirect effect = 0.15; 95% CI from 0.07 to 0.24; $z = 3.11, p < 0.01$; indirect effect = 0.19; 95% CI from 0.09 to 0.33; $z = 3.15, p < 0.01$, respectively), and on workplace boredom (indirect effect = -0.08; 95% CI from -0.14 to -0.04; $z = -2.91, p < 0.05$; indirect effect = -0.13; 95% CI from -0.20 to -0.07; $z = -4.05, p < 0.001$; indirect effect = -0.10; 95% CI from -0.16 to -0.05; $z = -3.58, p < 0.001$; indirect effect = -0.13; 95% CI from -0.20 to -0.07; $z = -3.69, p < 0.001$, respectively) through cynicism, thereby supporting H3b and H4b. In what concerns professional efficacy, earlier results demonstrate that this variable is not significantly associated with affective commitment (H1c), thereby preventing professional efficacy from acting as a mediator. Therefore, H3c is not supported. However, as expected, this research finds a significant indirect effect of task autonomy, task variety, task significance, and social characteristics on workplace boredom (indirect effect = -0.08; 95% CI from -0.15 to -0.03; $z = -3.17, p < 0.01$; indirect effect = -0.08; 95% CI from -0.14 to -0.03; $z = -3.12, p < 0.01$; indirect effect = -0.05; 95% CI from -0.10 to -0.02; $z = -2.82, p < 0.01$; indirect effect = -0.08; 95% CI from -0.15 to -0.04; $z = -3.16, p < 0.01$, respectively), through

professional efficacy thereby supporting H4c. Table 2 summarizes the results of the hypotheses testing.

Steps	Exhaustion			Cynicism			Professional efficacy					
	B	SE	t	p	B	SE	t	p	B	SE	t	p
Task autonomy	-0.40	0,09	-4.21	<.001	-0.43	0,13	-3.31	<.001	0,39	0,08	4,86	<.001
Task variety	-0.26	0,10	-2.74	<.01	-0.70	0,12	-5.74	<.001	0,47	0,08	6,04	<.001
Task significance	-0.08	0,09	-0.87	0,38	-0.48	0,11	-4.39	<.001	0,27	0,07	3,82	<.01
Social characteristics	-0.45	0,11	-4.22	<.001	-0.66	0,14	-4.61	<.001	0,45	0,09	4,90	<.001
	Affective commitment to school											
Task autonomy	0,10	0,11	-0.87	0,38	0,10	0,11	-0.87	0,38	0,04	0,05	0,72	0,47
Task variety	0,17	0,11	1,53	0,13	0,17	0,11	1,53	0,13	-0,07	0,05	-2,15	0,21
Task significance	0,04	0,10	0,45	0,66	0,04	0,10	0,45	0,66	0,04	0,04	0,90	0,37
Social characteristics	0,46	0,12	3,70	<.001	0,46	0,12	3,70	<.001	0,03	0,06	0,50	0,62
Exhaustion	0,01	0,09	0,04	0,97	0,01	0,09	0,04	0,97	0,03	0,04	0,74	0,46
Cynicism	-0,32	0,07	-4,80	<.001	-0,32	0,07	-4,80	<.001	0,19	0,03	6,32	<.001
Professional efficacy	0,09	0,10	0,88	0,38	0,09	0,10	0,88	0,38	-0,19	0,04	4,27	<.001
Bootstrap results for indirect effect												
	Effect	SE	LL/UL95%CI	z*	Effect	SE	LL/UL95%CI	z*	Effect	SE	LL/UL95%CI	z*
Task autonomy through exhaustion	0,00	0,04	-0,09/0,07		-0,01	0,02	-0,06/0,02		-0,01	0,02	-0,06/0,02	
Task autonomy through cynicism	0,14	0,05	0,05/0,27	2,67, p<.01	-0,08	0,03	-0,14/-0,04	-2,91, p<.05	-0,08	0,03	-0,14/-0,04	-2,91, p<.05
Task autonomy through professional efficacy	0,03	0,04	-0,05/0,13		-0,08	0,03	-0,15/-0,03	-3,17, p<.01	-0,08	0,03	-0,15/-0,03	-3,17, p<.01
Task variety through exhaustion	-0,01	0,03	-0,06/0,05		-0,01	0,01	-0,04/0,01		-0,01	0,01	-0,04/0,01	
Task variety through cynicism	0,20	0,06	0,10/0,35	3,39, p<.001	-0,13	0,03	-0,20/-0,07	-4,05, p<.001	-0,13	0,03	-0,20/-0,07	-4,05, p<.001
Task variety through professional efficacy	0,01	0,05	-0,10/0,11		-0,08	0,03	-0,14/-0,03	-3,12, p<.01	-0,08	0,03	-0,14/-0,03	-3,12, p<.01
Task significance through exhaustion	-0,01	0,01	-0,03/0,02		-0,01	0,01	-0,02/0,01		-0,01	0,01	-0,02/0,01	
Task significance through cynicism	0,15	0,04	0,07/0,24	3,11, p<.01	-0,10	0,03	-0,16/-0,05	-3,58, p<.001	-0,10	0,03	-0,16/-0,05	-3,58, p<.001
Task significance through professional efficacy	0,02	0,03	-0,05/0,07		-0,05	0,02	-0,10/-0,02	-2,82, p<.01	-0,05	0,02	-0,10/-0,02	-2,82, p<.01
Social characteristics through exhaustion	-0,03	0,04	-0,11/0,06		-0,01	0,02	-0,06/0,02		-0,01	0,02	-0,06/0,02	
Social characteristics through cynicism	0,19	0,06	0,09/0,33	3,15, p<.01	-0,13	0,03	-0,20/-0,07	-3,69, p<.001	-0,13	0,03	-0,20/-0,07	-3,69, p<.001
Social characteristics through professional efficacy	-0,01	0,05	-0,11/0,09		-0,08	0,03	-0,15/-0,04	-3,16, p<.01	-0,08	0,03	-0,15/-0,04	-3,16, p<.01

Note. N=203. Bootstrap sample size = 1.000. LL = lower limit; CI = confidence interval; UL = upper limit; z* = normal theory tests for specific indirect effects (sobel test)

Table 2: Results of the hypotheses testing

5. DISCUSSION

The results of this research provide support to the direct association between psychological well-being and work-related outcomes (Leiter & Maslach, 2009). As such, this research has hypothesized burnout to be associated with affective commitment and workplace boredom among higher education students. The results demonstrate that higher levels of cynicism among our sample are associated with less organizational affective commitment and more workplace boredom. Certainly, those two negative work-related attitudes can be traced back to cynical tendencies, inherited in higher education students.

Contrary to expectations, exhaustion is not significant in explaining either affective commitment or workplace boredom among higher education students, contradicting findings that supported the relationship between exhaustion and organizational commitment (Akpınar et. al, 2013; Khan, Rasli, Yusoff, Faizan Malik, Muddassar Khan & Khan Q., 2014). This can be led back to the population of this study being relatively young (mean age of 24.2); as exhaustion is the most physical dimension of burnout, the older people are, the more exhausting they tend to perceive work (Schaufeli & Salanova, 2007). Consequently, this paper assumes an older sample would show higher levels of exhaustion which could then alternate the findings. Besides, professional efficacy does not prove to be significantly associated with organizational affective commitment.

The results of this research also support the direct associations between the way jobs are designed and the subjective perception of psychological well-being. As such, this paper has hypothesized job design to influence burnout among students. The results indicate job design to be partially correlated with burnout: Task autonomy, task variety (Bremner & Carrière, 2011) and social characteristics of a job are associated with less exhaustion, less cynicism and more professional efficacy. This suggests that students who engage in work that comprises the need to autonomously master a broad range of tasks, preferably in a social environment they perceive as

positive, to perceive their own psychological state as positive. Especially, given a sample that is comparably well educated, the strong direct relationship between those variables and cynicism indicate that given the responsibility to conduct numerous distinctive and challenging study tasks raises individual well-being among higher education students. Contrary to expectations, task significance is not associated with less exhaustion, less cynicism and more professional efficacy – going in line with Bremner & Carrière (2011). A possible explanation might be the fact that such job characteristic is not desirable by the respondents of this study: In accordance with Hackman and Oldham (1976) individuals with low growth need strength may feel high task significance is an undesirable side effect of their job. Therefore, students who perceive their studies as having severe impacts on their environment may find this characteristic to increase psychological distress.

Those associations were the basis to further link the way jobs are designed with work-related outcomes – by using burnout (as one severe form of psychological distress) as mediator. Hence, this paper has hypothesized burnout to explain the relationship between job design, affective commitment and workplace boredom among higher education students. The results indicate burnout to partially mediate such relationship. This research, therefore, further supports previous studies (Leitner & Maslach, 2009) and aligns with earlier literature on job design (Morgeson & Humprey, 2006), by emphasizing the mediating role of burnout (Koeske & Koeske, 1991; Laughman, Boyd & Rusbasan 2016), to explain the relationship between job characteristics and work-related outcomes. This research has found that task autonomy, variety, significance and social characteristics that are experienced throughout a study program correlate with students' affective commitment, explained by cynicism. Indeed, cynical students are more likely to be less committed to their educational institution, agreeing with previous findings that associated a similar mediating relationship of burnout between educational input and individual outputs (ibid.). In accordance with the stress-strain-outcome model, this research traces psychological strain among

students back to stress-promoting study design, resulting in less commitment and more workplace boredom. Besides, task autonomy, variety, significance and social characteristics that are experienced throughout a study program can be associated with students' workplace boredom, through both cynicism and professional efficacy. As concluded before, cynicism supports an anti-organizational citizenship attitude and egoistic working behaviours. Altruistic employees generally experience more work excitement and show higher levels of organizational loyalty (James, Ferris & Hochwarter 2005). Hence, it can be further assumed to positively foster engagement in students by ensuring positive psychological well-being which results in less long-term workplace boredom. Literature on the effects of professional efficacy neglects the positive role job design plays in positive work-related outcomes and rather sheds light on the fact that professional inefficacy decreases engagement and that it leads to burnout (Schaufeli & Salanova, 2007). This study states that professional efficacy, de facto, can explain the relationship between positively perceived study design and less workplace boredom.

In conclusion, this study highlights the importance of the psychological effects that job characteristics have on individual well-being and underlines the notion that the way studies are designed can be a major determinant of well-being for students. Thereby, this research suggests that students are more affectively committed and less bored in regards to their working environment, not only because they perceive their study characteristics as positive, but also due to the fact that those perceptions cultivate psychological well-being which in turn can be associated with less burnout. This paper highlights the need to understand work-related outcomes, attitudes and consequences arriving from job design and, hence, underpins the notion that burnout is an important factor to determine overall organizational excellence. Students perceive positive job design characteristics to be closely tied to their psychological well-being, resulting in a smaller likelihood to feel burned out. This finding goes in line with recent developments among higher

education institutes aiming to provide more personalized learning to their students, suggesting customized study programs can increase their satisfaction and well-being levels (Soares, 2011).

6. LIMITATIONS AND FURTHER RESEARCH

Although this study contributes to prevalent literature, this paper has several procedural and contextual limitations that shall now be examined and addressed in further research.

Procedural limitations can be characterized by constraints that concern the research's data, sample and methodology. First, to further increase the reliability of this research it is essential to capture developmental trends across a longer period of time. It is shown that longitudinal studies or a time-series cross section analysis allow for more reliable results. Second, as MacCallum & Austin (2000) describe, results of a single study are not generalizable. Using a random sample of higher education students (n=203) does not indicate shellproof replication for other groups of students; generalizations can only be made by conducting additional studies with a distinct population. Third, data on the variables were obtained by self-reported questionnaires, leading to a possible common method variance. In order for students to not exaggerate or understate their emotions the survey was anonymous. Although such questionnaires may be biased by the respondents' feelings at the time of reporting, in seeking to understand students' emotional reaction to their educational context this self-reported data was identified as the most appropriate tool for capturing their psychological well-being, antecedents and consequences of such. Future research, therefore, could use a multi-level approach to allow for more reliable data. Fourth, by only surveying higher education students, this study only focuses on one specific group of people, indicating a possible difference in results for individuals involved in another type of educational setting. Hence, it would be interesting to repeat the research by surveying pupils pursuing primary education, for instance, to see whether the tested model would also hold there.

Contextual limitations directly refer to the results of this research. First, as aforementioned, exhaustion was not established to be significant in explaining the relationship between job design, affective commitment and workplace boredom. It would be interesting to see how much the collection period influenced this finding. The data was collected during the summer months/break and it can be assumed that students did not feel as exhausted as they would have felt during another period of the year. Thus, it would be interesting to see whether conducting the same survey during exam period would confirm our assumption that exhaustion can, de facto, be used to explain the anticipated relationship. Second, this study uses well-being to explain levels of organizational affective commitment and workplace boredom and assumes that positive work-related outcomes are due to good psychological health and well-being. Although this association is valid, it must be recognized that there might be other factors that influence how much students are committed to and how bored they become with their studies. Financial rewarding being tied to a certain GPA, for instance, may influence students overall organizational commitment which then could decrease workplace boredom. Further research should also consider other input variables in explaining the tested relationship. Third, it becomes apparent that task autonomy, task variety and social characteristics can be associated with less exhaustion, less cynicism and more professional efficacy. Additional studies should consider the impact of other job design attributes, such as work context and interdependence, on burnout. Work conditions and feedback, for instance, could differently be associated with work-related outcomes. Fourth, this paper traces burnout back to negatively perceived job design, whereas there may be other sources for such psychological unwell-being. Parental pressure or certain personal traits of students, for instance, can be valuable variables to assess burnout and the effects of such on affective commitment and workplace boredom.

7. PRACTICAL IMPLICATIONS

The study's findings demand educational institutes, nationally and internationally, to: (I) minimize burnout proneness among current student as well as to (2) prioritize the well-being of their future students as primary educational policy goal.

These suggestions have an enormous impact on the way higher education institutes should design their studies in the future because positive perceived study characteristics foster students' affective commitment and reduce workplace boredom. It is therefore highly advisable to invest in healthy study design and conducive study work environments. Higher education must ensure to facilitate learning in the most customized, personalized and professional way. By that, students' perception on their acquired knowledge, skills, value, beliefs and habits can positively impact their overall well-being. As long as such institutions are committed to create study environments that (I) foster autonomous learning, (II) support getting acquainted with a variety of academic disciplines, (III) are significant to the students' self and environment and (IV) aim at building social contacts, students will reciprocate with positive psychological well-being, less burnout and an increasingly productive working behaviour. Individual curriculum development, for instance, can be identified as a helpful method to create such a constructive and healthy study environment.

All things considered, healthy students are *the* essence to foster favourable organizational outcomes for each and every school. Especially in times where 17,605 higher education institutes are officially registered (WHED, 2016), an excellent reputation is key to academic long-term success. In that respect, having students that 'feel well' makes a good start.

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