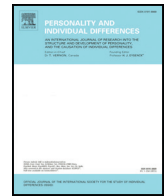




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Measuring procrastination at work and its associated workplace aspects

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ABSTRACT

Procrastination at work can be defined as putting off work-related action by engaging in nonwork-related actions during work hours. This paper (a) introduces and validates a new instrument tapping procrastination behaviours at work, (b) investigates its construct validity (Study 1), and (c) presents empirical evidence on the workplace correlates of procrastination at work, including workplace characteristics, boredom and counterproductive work behaviour in two independent samples (Study 2). Drawing on data from 384 participants and using exploratory and confirmatory factor analysis, Study 1 revealed two subdimensions of the Procrastination at Work Scale (PAWS), namely soldiering and cyberslacking. Moreover, this study demonstrated that procrastination at work can empirically be distinguished from conceptually similar concepts such as counterproductive work behaviour, general procrastination and boredom. Study 2 further validated this instrument by examining its relations with other concepts. Structural equation analyses using data from participants from two culturally different countries (The Netherlands and Turkey, total N = 443) showed that low job demands and resources were associated with boredom and that boredom was associated with procrastination at work and counterproductive work behaviour. We conclude that the PAWS is a valid tool that can be used to assess non-work-related activity during work hours.

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1. Introduction

Procrastination can be defined as the delay that is due to the avoidance of the implementation of an intention (Van Eerde, 2000, p. 375). It is considered to be a common behaviour, as not less than 25% of the adult population considers themselves procrastinators (Ferrari, Diaz-Morales, O'Callaghan, Diaz, & Argumedo, 2007). Although it is a common behaviour, the degree to which people procrastinate could vary across domains, for instance across the academic, work, leisure, and family domains (Klingsieck, 2013). Procrastination at work, referring to a self-regulatory failure of work tasks, is associated with high costs (Nguyen, Steel, & Ferrari, 2013). Studies report that employees spend on average 1.5 to 3 h on personal activities during their working hours (Paulsen, 2015). D'Abate and Eddy (2007) estimated the yearly loss due to personal (home and leisure related) activities during working hours as \$8875 per employee. According to other estimations, 30% to 65% of the time spent on internet surfing during the work day is unrelated to work (Sharma & Gupta, 2004), which leads to a 30–40% productivity loss that may add up to \$85 billion per year in the US only (Lim & Teo, 2006). Briefly, the high costs of off-task behaviour highlight the necessity of understanding this phenomenon.

A growing body of literature has addressed the conceptualization, antecedents and outcomes of general and academic procrastination. However, procrastination behaviour in the workplace has received considerably less attention. One important reason for the small number of empirical studies on workplace procrastination is the absence of an instrument that is specifically developed for covering contemporary workplace procrastination behaviour (Claessens, Van Eerde, Rutte, & Roe, 2007). The current paper addresses this gap by presenting two related studies on procrastination behaviour specifically in the work context. In Study 1, we develop and validate the Procrastination at Work Scale (PAWS). In Study 2, we focus on the nature of this concept by examining its relationships with job demands, job resources, workplace boredom, and counterproductive work behaviour in two culturally different samples from the Netherlands and Turkey. Hence, the present studies contribute to the current literature on procrastination by providing a new scale to measure this relevant and understudied type of behaviour in contemporary work settings, and examining its cross-cultural stability and possible correlates by testing a model across two cultures.

1.1. Towards a comprehensive understanding of procrastination at work

The majority of the procrastination studies in the literature focus on procrastination in the academic and general-life domains. For instance, Claessens et al. (2007) reviewed 32 studies on time management, of which less than half were conducted in the workplace. Similarly, in a

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meta-analysis, Van Eerde (2003a) found only six non-student samples out of 121 procrastination studies. However, this is not to say that idle behaviours at work have never been studied before. Organizational researchers did study irrational delay of work tasks but they used different labels, such as time management at work (Van Eerde, 2003b), task completion at work (Claessens, Van Eerde, Rutte, & Roe, 2010), empty labour (Paulsen, 2015), cyberslacking (Vitak, Crouse, & LaRose, 2011) and presenteeism (D'Abate & Eddy, 2007). These studies all present notable findings related to procrastination of work tasks. For instance, some studies found that procrastination is more common among high-status employees (Hammer & Ferrari, 2003; Vitak et al., 2011). Others showed that engaging in personal activities during work was related to boredom and general procrastination (D'Abate & Eddy, 2007; Wan, Downey, & Stough, 2014). In addition, employees working in jobs that require repetitive activity and less creativity showed a high frequency of personal use of internet during work (Vitak et al., 2011). Lonergan and Maher (2000) found that job enrichment was associated with lower decisional procrastination. Moreover, their results showed that procrastination was the least for those with internal locus of control and high autonomy. In short, previous studies clearly highlight the relevance and significance of studying procrastination within work context.

Despite the valuable knowledge that earlier studies provided to the literature, an important shortcoming of these studies was that they applied general or academic procrastination scales to the work context. As Klingsieck (2013) suggested, procrastination in specific domains, such as workplace, health, leisure, or family, can be better understood with a domain-specific scale that addresses certain aspects of these domains. Thus, workplace procrastination should be studied with a scale that captures explicitly all relevant aspects of work-related idleness. In order to develop a new measure, we must first construe a proper, overarching definition of procrastination at work that aligns with earlier definitions of procrastination in other life domains. Hence, instead of providing a completely new definition, we adapted existing definitions and applied them to the contemporary work context. We define procrastination at work as the *delay of work-related action by intentionally engaging (behaviourally or cognitively) in nonwork-related actions, with no intention of harming the employer, employee, workplace or client.*

In practice, the repertoire of behaviours associated with procrastination at work can be categorized as two fundamentally different types of behaviours. The first type refers to the restriction of output by employees. Taylor (1911) was the first to label such behaviours as *soldiering*. Recently Paulsen (2015) defined soldiering as avoidance from work tasks for more than 1 h a day without aiming to harm others or shifting work onto colleagues. According to Paulsen, soldiering takes place when an employee has a low ethical or identity-grounded relationship with the job and when the work obligations are lower than what one could potentially perform. Examples of soldiering include daydreaming, engaging in more pleasurable activities than working, and taking long coffee breaks. Studies show that this type of work-avoiding behaviour is mostly associated with negative outcomes. For instance, Nguyen et al. (2013) found that trait procrastination was associated with receiving lower salaries, shorter durations of employment and a tendency to be unemployed or underemployed, rather than to have full-time employment. Steel (2007) argued that avoiding execution of work tasks would lower self-efficacy, leading to a vicious cycle of poor performance. Consequently, soldiering arises as an ineffectual behaviour, which might threaten employee well-being.

A second form of procrastination at work emerged with the wide utilization of (mobile) technology at work. This type of online procrastination is labelled as *cyberslacking* (Vitak et al., 2011). Cyberslacking is a recent and extremely prevalent concept (Garrett & Danziger, 2008a). Employees might give the impression of working on their computers, but might actually be shopping online, checking social network sites, gaming, or instant messaging. Studies report massive costs for companies due to cyberslacking (Garrett & Danziger, 2008b). The losses associated with cyberslacking include not only reduced performance, but

also lower network security and slower network performance, costs associated with removing viruses and spyware, et cetera, causing expenses of around \$130,000 per company in the US. Garrett and Danziger (2008a) found that for higher-status employees, higher levels of cyberslacking were associated with higher levels of autonomy, income and education. In terms of productivity the findings are ambiguous. For instance, Meerkerk, Schoenmakers, and Van de Mheen (2014) found no relationship between personal internet usage at work and contextual or task performance. However, there was a positive relationship between counterproductive work behaviour (CWB) and cyberslacking.

Summarizing, we propose that workplace procrastination can be observed through two dimensions, namely soldiering (offline off-task activity, such as taking long coffee breaks, gossiping or daydreaming) and cyberslacking (online off-task activity, such as reading blogs for personal interest). Moreover, both forms of workplace procrastination tend to be associated with negative outcomes, especially – but not exclusively – for organizations. The Procrastination at Work Scale (PAWS) will therefore include both dimensions.

1.2. Construct validity of the PAWS

When developing a new measure it is critical to examine its construct validity. In order to establish the convergent validity of the PAWS, this study examines the relationship between the PAWS and several other closely related concepts within its nomological network, namely general procrastination, boredom at work, and CWB. Work engagement is used to examine the divergent validity of the PAWS.

General procrastination is probably the closest analogue to workplace procrastination. Conceptually, it refers to a self-regulatory failure in volitional action and self-discipline, resulting in needlessly and irrationally delaying intended tasks in different walks of life (Hagbin, McCaffrey, & Pychyl, 2012; Steel, 2007). General procrastination is often accompanied by psychological discomfort, stress, and poor health and negative emotions (Ferrari, 1992; Sirois, Melia-Gordon, & Pychyl, 2003). The strong negative link between conscientiousness and general procrastination suggests that chronic procrastinators could also fail to regulate the execution of their tasks at work adequately due to their low levels of conscientiousness (Van Eerde, 2003a).

Counterproductive work behaviour (CWB) encompasses negative organizational behaviours, which were found to be related to decreased organizational justice perception, job satisfaction (Spector et al., 2006), work engagement (Koopmans et al., 2011) and increased burnout (Ansari, Maleki, & Mzreah, 2013). The growing body of research on CWB shows that workers engaging in this behaviour consciously violate organizational norms, thus threatening the well-being of the organization and its members by engaging in acts such as withdrawal (i.e. spending less time on working than is required by the organization), abuse (referring to physically or psychologically harmful behaviours directed towards coworkers), production deviance (engaging in purposeful inefficiency), sabotage (defacing or destroying of organizational property), and theft (stealing property of the organization or others in the organization) (Spector et al., 2006). We conceptualize workplace procrastination as a kind of counterproductive behaviour that does *not* contain a conscious harmful intention. Therefore, we propose that workplace procrastination and CWB are separate, yet related constructs.

A third concept which we expect to be related to procrastination at work is *boredom at work*. Boredom at work can be defined as a cognitive-motivational state of low arousal and dissatisfaction stemming from an understimulating work environment (Loukidou, Loan-Clarke, & Daniels, 2009; Reijseger et al., 2012). Jobs with repetitive tasks or jobs which require less complex skills might be perceived as being monotonous and boring. Procrastination was most strongly associated with the aversive task components of frustration, resentment, and, in particular, boredom (Ackerman & Gross, 2005; Blunt & Pychyl, 2000; Strongman & Burt, 2000). Ferrari (2000) also found that procrastinators

report high boredom scores. Such relationships might also exist at workplaces. Van der Heijden, Schepers, and Nijssen (2012) found that workplace boredom was associated with distraction. Further, Wan et al. (2014) found a moderate correlation ($r = 0.33$) between job boredom and non-work related presenteeism (i.e. surfing on Facebook). These findings show that avoiding to fulfil work tasks could be a behavioural manifestation of state boredom.

To summarize, we intend to explore the construct validity of PAWS. For convergent validity, PAWS is expected to be positively related to general procrastination (Hypothesis 1a), CWB (Hypothesis 1b) and boredom at work (Hypothesis 1c). In addition, we examine the divergent validity of PAWS by relating it to the subdimensions of work engagement. Work engagement is a positive, fulfilling state of mind that is characterized by vigor, dedication and absorption (Bakker, Schaufeli, Leiter, & Taris, 2008). Vigor refers to having high levels of energy and the willingness to invest effort in one's work. Dedication concerns the degree to which a worker is strongly involved in his/her work. Finally, absorption refers to the degree to which workers are fully concentrated and happily engrossed in their jobs. Given our conceptualization of procrastination at work as putting off work tasks, it is unlikely that procrastinators are engaged workers. Therefore, we expect a negative relationship between procrastination and work engagement (Hypothesis 1d).

1.3. Workplace characteristics and procrastination at work

In this study, we also aim to understand the relationships between particular workplace characteristics and workplace procrastination. Linking workplace procrastination to workplace characteristics might yield important input for the development of interventions aimed at preventing or reducing procrastination at work. To examine how job characteristics relate to workplace procrastination, we used the Job Demands-Resources Model (JD-R Model, Bakker & Demerouti, 2007) as a conceptual basis. The JD-R Model is a widely-used framework to examine work stress and motivation in relation to two different domains of work characteristics: job demands and job resources. Job demands refer to aspects of the job that require sustained physical and/or psychological effort or skills and that are associated with physiological and/or psychological costs (Bakker & Demerouti, 2007). Job resources are those job aspects that are functional for facilitating work goals, that stimulate personal growth and development, and that help employees reduce the negative effects of high job demands and the associated physiological and psychological costs.

The JD-R model suggests that boredom at work can originate from tasks that are qualitatively and/or quantitatively undemanding. In other words, low job demands and resources are associated with experiencing low strain, low motivation (Bakker & Demerouti, 2007)

and high levels of boredom (Reijseger et al., 2012) at work. The findings of Wan et al. (2014) supported such a relationship in that having job unclarity, unspecific tasks, little say in decisions, and having few and/or unchallenging tasks was related to low energy and low motivation, in turn leading to boredom. Therefore, on the basis of the JD-R Model, we assume that job resources (Hypothesis 2a) and job demands (Hypothesis 2b) are negatively associated with boredom.

The hypothesized relation between boredom and procrastination of work tasks was discussed in the previous section. Briefly, experienced boredom seems to be associated with employee detachment and irrelevant task activity (e.g. Wan et al., 2014). In addition, boredom appears to have other and arguably more harmful outcomes as well. For instance, Bruursema, Kessler, and Spector (2011) found that job boredom could potentially contribute to all dimensions of CWB (r s ranging from 0.17 to 0.31) and that boredom-prone individuals scored higher on withdrawal behaviours when encountering job boredom. Employees with high levels of boredom might be subject to a certain amount of ego depletion (Reinecke, Hartmann, & Eden, 2014), i.e. an exhausted state of willpower due to impaired cognitive resources and persevered goal attainment (Schmeichel, Vohs, & Baumeister, 2003), leading the self to be easily seduced by appealing stimuli and suffer from decreased volitional control. Thus, we expect boredom to be positively related to both procrastination at work (Hypothesis 3a) and CWB (Hypothesis 3b).

Lastly, Van Eerde (2003a) concluded that procrastination was negatively related to conscientiousness, self-efficacy, and positively to self-handicapping. As regards performance, procrastinators scored high on negative aspects, such as “missing a deadline” and low on “task preparation”, showing that individual performance might be affected negatively by procrastination behaviour. This feeling of inefficacy might lead to mental detachment from work and therefore could be related to different forms of CWB due to low identification with one's job, such as intentionally restricting time on work (withdrawal) or ignoring colleagues (abuse). In short, we expect a positive relationship between procrastination at work and CWB (Hypothesis 4).

To sum up, based on earlier research, we propose a set of hypotheses that when integrated, form the research model of the present study (Fig. 1). Fig. 1 shows that we expect an understimulating work environment (low demands and low resources) to be associated with high levels of boredom. In turn, this bored state should be associated with high levels of procrastination and CWB. We base our model on the core assumption of JD-R Model that workplace characteristics (such as a resourceful environment) are related to occupational outcomes (i.e. organizational citizenship behaviour) through affective-motivational states (for instance work engagement). In our heuristic model, we propose that boredom mediates the relationship between workplace characteristics and negative outcomes. Presumably, insufficient job

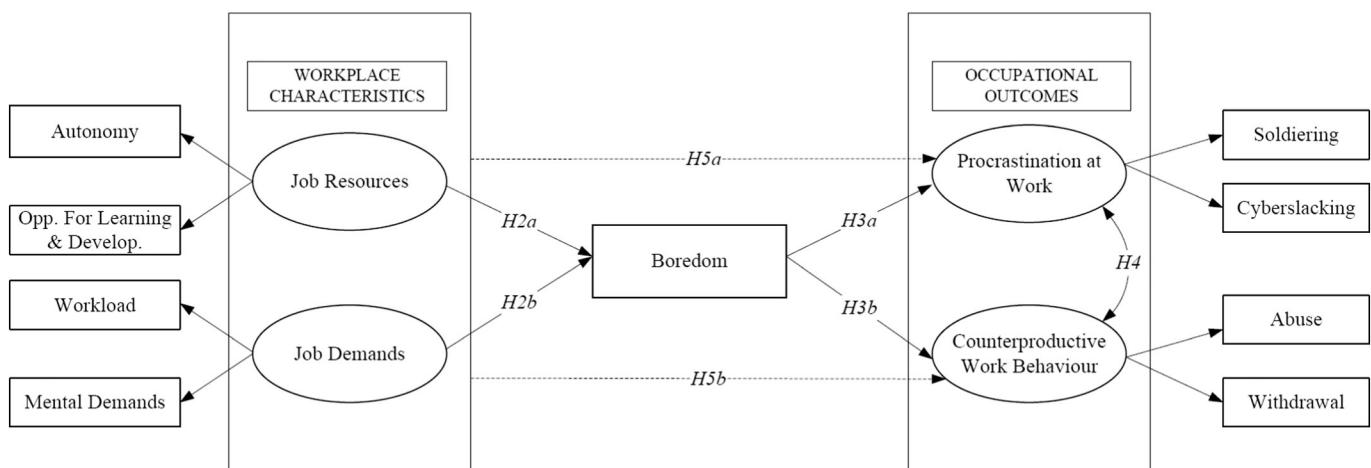


Fig. 1. Proposed model for the associations between procrastination at work and other variables (M_1).

demands and resources would induce a feeling of understimulation and understimulated employees would experience a sense of mental detachment from work, which could show itself in engaging in non-work related behaviour. Hence, the impact of workplace aspects on procrastination and counterproductive behaviours would be better explained through boredom. Therefore, we formulate our final hypothesis as follows: Boredom mediates the relationship between job demands and resources on the one hand and procrastination (*Hypothesis 5a*) and CWB (*Hypothesis 5b*) on the other hand.

1.4. A cross-cultural comparison of procrastination at work

When developing a scale, the influence of culture could be overlooked and scales may grasp the dynamics of a single culture only. In order to tackle this potential limitation, we aim at gathering items which could be applied in different cultures. This aim is set as mandatory criteria of our item inclusion, alongside with the correspondence of the items to our definition of workplace procrastination, their applicability to a wide range of occupations, and their theoretical and empirical separation from related concepts. Therefore, we will test our hypotheses across a Dutch and a Turkish sample in order to explore whether culture plays a role in the functioning of procrastination at work. The reason for selecting these two cultures is due to their distinct classification according to different indexes. For instance, Hofstede (2001) characterized the Turkish culture as being high on collectivism and low on uncertainty avoidance, whereas the Dutch culture was classified as being high on both individualism and uncertainty avoidance. According to the Global Leadership and Organizational Behavior Effectiveness (GLOBE) research program (a long-term program designed to conceptualize, operationalize, test, and validate a cross-level integrated theory of the relationship between culture and societal, organizational, and leadership effectiveness), Turkey and the Netherlands differ significantly in performance orientation score (i.e. social values and practices). In this index, Turkey is classified in the Middle East cluster, whereas the Netherlands belongs to the Germanic Europe cluster (House, Hanges, Javidan, Dorfman, & Gupta, 2004) stating that these two specific cultures could have different characteristics. OECD indexes also reveal major differences between these two countries. Per year, Turkish employees work on average 400 h more than Dutch employees. Moreover, Turkish employees report the longest working hours by far (41% of the Turkish sample work very long hours) among 36 OECD countries, while few Dutch employees report working very long hours (0.4%). Lastly, 37% of the Dutch employees hold a part-time job whereas only 8% of the Turkish individuals work part-time (OECD, 2014). In short, Turkish and Dutch employees could arguably differ in terms of their work environment representations. Therefore, by testing the PAWS in samples that represent different organizational and cultural environments, we aim to fulfil an important requirement of the development of the PAWS, i.e. its applicability in different cultures; as well as to observe the (in)variation of workplace procrastination in terms of its functioning, manifestation and outcomes, without any specific expectation.

2. Study 1: development and preliminary validation of the Procrastination at Work Scale (PAWS)

Study 1 aimed to develop and assess the construct validity of a scale for assessing procrastination at work. In Phase 1 of this study an item pool was generated, including existing and self-generated procrastination items. These items were evaluated in terms of their suitability for measuring procrastination at work. In Phase 2, the resulting preliminary scale was included in a survey study. Exploratory and confirmatory factor analyses were conducted to assess the factorial structure of the instrument, leading to the final version of the Procrastination at Work Scale (PAWS). In Phase 3, the construct validity of the PAWS was examined by relating the scale to several other concepts. Regarding its

convergent validity we expected strong and positive correlations between the PAWS and theoretically similar concepts, such as general procrastination (*Hypothesis 1a*), counterproductive work behaviour (*Hypothesis 1b*), and boredom at work (*Hypothesis 1c*). As regards its divergent validity we expected negative and/or relatively weak relationships between the PAWS and the subdimensions of work engagement (*Hypothesis 1d*).

2.1. Method

2.1.1. Phase 1: questionnaire development

In the process of developing the PAWS, we followed four steps (cf. Geurts et al., 2005). Firstly, we provisionally defined workplace procrastination as the *delay of work-related action by engaging (behaviourally or cognitively) in nonwork-related actions, with no intention of harming the employer, employee, workplace or client*, in order to search the literature for relevant items. As for the second step, we generated an item pool that included 76 items from 7 previously developed scales that could tap aspects of workplace procrastination: the *Decisional Procrastination Scale* (Mann, 1982); the *General Procrastination Scale* (Lay, 1986); the *Adult Inventory of Procrastination* (McCown & Johnson, 1989); the *Susceptibility to Temptation Scale* (Steel, 2002); the *Irrational Procrastination Scale* (Steel, 2002); the *Time Management Scale* (Van Eerde, 2003b); and the *Avoidance Reaction to a Deadline* (Van Eerde, 2003b). Preliminary inspection of these items indicated that many of these were unlikely to be useful since in terms of their wordings they were clearly developed for assessing academic and general procrastination. Therefore, 19 self-generated items were added in order to fully cover the definition of procrastination at work.

In the third step we specified four criteria for evaluating the total of 95 items: (1) The item should fit well with our definition of procrastination at work (content validity to be examined by judges); (2) the item should not overlap conceptually with possibly related antecedents or consequences of procrastination (concurrent validity to be examined via correlation and CFA); (3) the item should be applicable to a wide range of occupations and individuals (generalizability to be ensured through convenience sample); and (4) the items should be free from cultural bias and it should be possible to translate the items to other languages (to be analysed via cross-cultural multi-group analysis). There was an additional box where the raters could indicate whether an item might be considered for inclusion if it were rephrased (e.g. by adding that a particular procrastination behaviour should be displayed in the work context).

In the last step, 5 researchers in the field of social and organizational psychology were asked to evaluate the items on the basis of these four criteria and their evaluations were analysed. Items were retained if at least two of the five judges indicated that the items did not violate any criterion. If only two judges evaluated an item favourably, we required that at least one more judge suggested that this item could be retained for inclusion after amending it (i.e. at least three of the five judges should indicate that a particular item held some potential as a useful item, possibly after rephrasing). By doing so, we intended to yield the approval of the majority of the judges and also to improve our final item pool with their suggestions. This procedure resulted in 27 items that were selected as corresponding to every required criteria by the majority of judges. Ten of these items showed substantial overlap to the degree that it was not useful to retain both (e.g., “I spend more than half an hour on the social network websites” and “I log on to social network sites at work”) One item was dropped after further discussion as it suggested a harmful intention on the side of the employee, might overlap with the concept of absenteeism and was not applicable to a wide variety of occupations, violating 3 out of our 4 criteria (i.e. “I leave work early even though I still have tasks to finish”). Table 1 presents the 16 items retained for use in Phase 2. The instruction presented to participants before they completed the questionnaire was as follows: “The following statements concern various sorts of behaviors at work.

Table 1
Items and factor loadings of the Procrastination at Work Scale (first estimate: principal component analysis with promax rotation, $N = 184$; second estimate: confirmatory factor analysis, $N = 200$).

Item	Factors	
	Soldiering ($\alpha = 0.84$)	Cyberslacking ($\alpha = 0.69$)
1. When I work, even after I make decision, I delay acting upon it. ^a	0.70/0.52	
2. I delay before starting on work I have to do. ^b	0.84/0.70	
3. At work, I crave a pleasurable diversion so sharply that I find it increasingly hard to stay on track. ^c	0.80/0.60	
4. When a work task is tedious, again and again I find myself pleasantly daydreaming rather than focusing. ^c	0.81/0.59	
5. I give priority to the lesser tasks, even if there is something important I should do at work. ^d	0.70/0.52	
6. When I have excessive amount of work to do, I avoid planning my tasks, and find myself doing something totally irrelevant.	0.60/0.45	
7. I take long coffee breaks.	0.56/0.51	
8. I delay some of my tasks just because I do not enjoy doing them.	0.74/0.76	
9. I use Instant Messaging (MSN, Skype, GTalk, WhatsApp...) at work.		0.77/0.69
10. I spend more than half an hour on social network sites (Facebook, Myspace, Twitter etc.) on work per day.		0.84/0.81
11. I read news online at work.		0.68/0.59
12. I do online shopping during working hours.		0.62/0.41
13. I overwork because I spend my time with irrelevant work activities.	0.48	
14. I play computer games at work.	0.23	
15. I have another sweet/cigarette/cup of coffee instead of beginning the task. ^e	0.33	
16. I let the time go by without getting any work task being done. ^e	0.58	0.28

Note. Items 13–16 were omitted from the final scale due to low loadings (<0.45) or double loadings. The remaining items were self-generated.

^a Item taken from Mann (1982).

^b Item taken from Lay (1986).

^c Item taken from Steel's (2002) Susceptibility to Temptation Scale.

^d Item taken from Steel's (2002) Irrational Procrastination Scale.

^e Item taken from Van Eerde (2003b).

Please read all statements carefully and then select how often you exhibit these behaviours at work. Please use the following response scale". A 7-point Likert-type scale was used with scale anchors 0 ("Never") and 6 ("Always").

2.1.2. Phase 2: factorial structure of PAWS

2.1.2.1. Procedure and sample. The data used in phases 2 and 3 of Study 1 were collected in an online questionnaire study. A consent form, including a link to the questionnaire, was distributed among 514 Dutch white-collar employees who worked in an office setting with computers. Participants were contacted via the first author's social network (Facebook and LinkedIn groups) and via the intranet of one insurance company. In total, 384 questionnaires were completed and returned (74%). About half (51%) of the participants were male and the mean age of the total sample was 40.1 years, ranging from 21 to 74 years ($SD = 12.8$ years). On average participants worked 32.9 h per week ($SD = 10.6$ h) with an average of 5 h overwork ($SD = 1.1$), and they had worked for their current employer for on average 8.4 years ($SD = 10.4$). Most of the participants worked in the communication (18%), finance (17%) and transportation sectors (12%). Fifty percent of the sample held a college or university degree. The high level of education in the sample was probably due to our focus on white-collar employees.

When the data collection process was finalized, the sample was randomly divided in two subsamples, with the purpose of analysing the factorial structure of the procrastination at work scale. Since we had 16 items for this particular variable, a minimum of 160 subjects was required for the exploratory factor analyses (Kass & Tinsley, 1979). Eventually, 184 subjects were randomly allocated to the sample used for the exploratory factor analyses (sample A). The rest ($N = 200$) was used for the confirmatory factor analyses and the convergent and divergent validity analyses (sample B).

2.1.2.2. Results: exploratory and confirmatory factor analyses. Sample A was used for the exploratory principal component analysis (PCA) using a promax rotation. Bartlett's test ($\chi^2 (N = 184, df = 66) = 821.47, p < 0.001$) and the Kaiser-Meyer-Olkin Measure ($KMO = 0.87$) showed that the data was adequate for PCA. Four eigenvalues exceeded 1.00, with values of 5.85, 1.56, 1.23 and 1.07, respectively,

showing that the final solution could potentially have one, two, three or four factors (Raïche, Walls, Magis, Riopel, & Blais, 2013). In the 4-factor model, only one item loaded on the fourth factor; in the 3-factor model, six items loaded on both the third factor and on one of the other two factors (with weaker loadings on the third factor). Apparently, the three- and four-factor solutions where theoretically and/or empirically of less interest. Therefore, only the one- and two-factor solutions were evaluated.

In the 2-factor solution, one item loaded highly on two factors and three other items loaded lower than 0.50 on both factors. Thus, these four items were excluded from the initial PAWS (Table 1). The remaining 12 items were retained for further analyses. According to the 2-factor PCA solution, an 8-item soldiering subscale accounted for 40.6% of the total variance and a 4-item cyberslacking dimension accounted for a further 12.9% of the variance (Table 1).

Sample B ($N = 200$) was utilized for the confirmatory factor analysis (CFA). Two models were compared. In the one-factor model, all twelve items that had been retained on the basis of the exploratory analyses using sample A loaded on a single latent factor. In the second factor the eight items of the Soldiering subscale loaded on one latent factor, while the four items of the Cyberslacking scale loaded on the second latent factor. As both subscales were presumed to correlate, both latent factors were allowed to correlate as well. As shown in Table 2, CFA results indicated a better fit for the 2-factor model ($\chi^2 (N = 200, df = 51) = 96.1, GFI = 0.93, CFI = 0.93, NFI = 0.87, RMSEA = 0.07$) compared to a single-factor solution ($\chi^2 (N = 200, df = 51) = 175.72, GFI = 0.86, CFI = 0.82, NFI = .76, RMSEA = 0.11; \Delta AIC = 50.93$). The internal consistency for the Soldiering subscale was $\alpha = 0.84$ (8 items) and $\alpha = 0.69$ (4 items) for the Cyberslacking subscale.

2.1.3. Phase 3: construct validity

Sample B ($N = 200$) was used in order to examine the convergent validity of our measure with theoretically similar constructs.

2.1.3.1. Measures

2.1.3.1.1. Boredom. Boredom at work was measured with the six items of the Dutch Boredom Scale (DUBS; Reijseger et al., 2012). An example item is "I daydream during my work", 0 = "never", 6 = "always". Its reliability (Cronbach's alpha) was good ($\alpha = 0.89$).

Table 2

Comparison of various factor models examining the distinction between the procrastination at work scale (PAWS) and boredom at work, counterproductive work behaviour, and general procrastination.

	χ^2	df	NFI	CFI	GFI	RMSEA	$\Delta\chi^2_{a-b}$
2-Factor PAWS vs. 1-factor PAWS (Phase 2)							79.59*
a) 1-Factor	175.72	52	0.76	0.82	0.86	0.11	
b) 2-Factor	96.13	51	0.87	0.93	0.93	0.07	
PAWS vs. DUBS (Phase 3)							257.66*
a) 1-Factor	908.60	132	0.74	0.76	0.73	0.12	
b) 2-Factor	650.94	131	0.81	0.84	0.83	0.10	
PAWS vs. CWBC							117.83*
a) 1-Factor	1360.68	321	0.63	0.69	0.74	0.09	
b) 2-Factor	1182.85	320	0.68	0.74	0.78	0.08	
PAWS vs. ARDS							376.34*
a) 1-Factor	762.27	132	0.69	0.73	0.76	0.11	
b) 2-Factor	385.93	131	0.85	0.89	0.89	0.07	
PAWS vs. DUBS, CWBC and ARDS							1036.38*
a) 1-Factor	3285.97	699	0.54	0.59	0.61	0.10	
b) 4-Factor	2249.59	693	0.68	0.75	0.74	0.08	

Note. PAWS: Procrastination at Work Scale; DUBS: Dutch Boredom Scale; CWBC: Counterproductive Work Behaviour Checklist; ARDS: Avoidance to Reactions Scale.

* The difference between these models is significant at $p < 0.001$.

2.1.3.1.2. Counterproductive work behaviour (CWB). CWB was measured by the Dutch translation of the 15 items of Counterproductive Behaviour Checklist (CWBC; Spector et al., 2006). Only the withdrawal and abuse subdimensions were used as these were expected to have the strongest correlations with boredom (cf. Bruursema et al., 2011). Four items measured withdrawal ($\alpha = 0.60$), such as “I’m late for work without permission” whereas 11 items measured abuse ($\alpha = 0.76$), e.g. “I purposely failed to follow instructions”. All items were answered on a 5-point scale (1 = “never”, 5 = “every day”).

2.1.3.1.3. General procrastination. Six items of the Avoidance Reactions to Deadline Scale (ARDS; Van Eerde, 2003b) were used ($\alpha = 0.83$) to assess general procrastination, since the remaining two items were included in the PAWS. The items (such as “I say to myself: ‘start now’. And I still don’t start”) were rated on a scale ranging from 1 (“(almost) never”) to 5 (“(almost) always”).

2.1.3.1.4. Work engagement. The 9-item version of the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006) was used to measure employee work engagement. Each subdimension, *Vigor* (i.e. “When I get up in the morning, I feel like going to work”, *Dedication* (e.g., “I am enthusiastic about my job”) and *Absorption* (for example, “I feel happy when I am working intensely”) had 3 items each (0 = ‘never’, 6 = ‘always’), and the internal consistencies of these scales were 0.90, 0.93, and 0.84, respectively.

2.1.3.2. Results. As expected, procrastination at work showed moderate correlations with general procrastination ($r = 0.46$, $p < 0.001$; supporting *Hypothesis 1a*), CWB ($r = 0.52$, $p < 0.001$; supporting *Hypothesis 1b*), and boredom ($r = 0.62$, $p < 0.001$; supporting *Hypothesis 1c*). The PAWS also showed low-to-moderate negative correlations with the subdimensions of work engagement, ranging from -0.27 (absorption) to -0.29 (vigor), supporting *Hypothesis 1d*. In order to examine the possible overlap of the PAWS with CWB, boredom at work, and general procrastination, three two-step CFAs were conducted (Table 2) in AMOS 17 (Arbuckle, 2013). We examined overall model fit through the chi-square goodness-of fit statistic, Goodness of Fit Index (GFI), Root Mean Squared Error of Approximation (RMSEA), Normed Fit Index (NFI) and Comparative Fit Index (CFI). RMSEA values smaller than 0.08; as well as GFI, NFI and CFI values higher than 0.90 indicated acceptable model fit (Hu & Bentler, 1999). In the first step of each of these CFAs a one-factor structure, with all items of the PAWS as well as the items tapping either CWB, boredom or general procrastination loading on a single latent variable was fitted to the data. In the second

step a two-factor structure was fitted to the data, with the items of the PAWS loading on one factor and the items tapping either CWB, boredom or general procrastination loading on the second factor. In all three cases, the two-factor model was significantly superior to the one-factor model (see Table 2 for fit indices). Finally, a 4-factor model (procrastination at work, boredom, CWB, and general procrastination) had a better fit than a 1-factor model with all items loading on one latent procrastination variable ($\Delta M_{4factor} \times M_{single\ factor} = \chi^2$ ($N = 200$, $df = 6$) = 1036.38, $p < 0.001$). These results show that procrastination at work can empirically be differentiated from general procrastination, counterproductive work behaviour, and boredom.

2.1.3.3. Discussion. The purpose of Study 1 was to develop a generic scale to measure workplace procrastination, the Procrastination at Work Scale (PAWS). In three phases, the items of the PAWS were developed, the factorial structure of the scale was examined and replicated and its construct validity evidence was investigated. Consistent with our expectations, the analyses showed that the PAWS consisted of two related dimensions, namely soldiering (8 items) and cyberslacking (4 items). As expected, procrastination at work correlated low to moderately highly with theoretically related concepts (boredom at work, counterproductive work behaviour, general procrastination and work engagement), supporting its convergent and discriminant validity. Thus, these findings support the notion that the PAWS is a valid instrument to measure workplace procrastination. However, in order to better understand the concept of workplace procrastination, it is crucial to examine its possible workplace antecedents and consequences. Hence, Study 2 investigates the associations among the PAWS and possible associated workplace characteristics and outcomes in two separate samples.

3. Study 2: the correlates of procrastination at work

In Study 1, we developed and validated a questionnaire to assess procrastination at work and empirically supported its distinction from general procrastination, CWB, and boredom at work. In Study 2, we test a model for investigating the correlates of procrastination at work (Fig. 1). Drawing on the JD-R Model, we expect an understimulating work environment with low resources (*Hypothesis 2a*) and demands (*Hypothesis 2b*) to lead to low arousal (energy) and motivation among employees, triggering high levels of boredom. Previous studies report that boredom-prone employees score low on job involvement, satisfaction, commitment and high absenteeism, turnover intention, and deactivation (Kass, Vodanovich, & Callender, 2001; Reijseger et al., 2012). Therefore, we expect high levels of state boredom to be associated with negative workplace behaviours, such as procrastination at work (*Hypothesis 3a*) and high levels of CWB (*Hypothesis 3b*), particularly withdrawal and abuse. In addition, we expect a strong relationship between procrastination at work and CWB (*Hypothesis 4*). Last but not least, we expect low job demands and resources to be related to increased procrastination (*Hypothesis 5a*) and counterproductive work behaviours (*Hypothesis 5b*), but we expect that this relationship will be mediated by boredom. The expected relationships among the study variables are illustrated in Fig. 1.

In a time of globalization, recent occupational scales should be applicable among wide range of cultures for having a broader understanding of relevant concepts. Studies need to provide cross-cultural evidence for their assessment in order to strengthen the pertinence of their measurements. To respond this concern, the proposed model will be tested across two independent samples that represent two culturally distinct work contexts. Using data from Dutch and Turkish full-time white-collar employees, we aim to address a crucial feature of the development of PAWS, which is its usability in different cultures. Moreover, we aim to observe if the functioning or the manifestation of procrastination differs across cultures.

3.1. Method

3.1.1. Sample and procedure

The Dutch sample consisted of all participants included in Sample B used in Study 1, and the characteristics of this sample are reported there. Since Sample A had been used for exploratory purposes, we felt it was inappropriate to include it in Study 2. As regards the Turkish sample, the data were collected via online questionnaires, similar to Study 1. The Turkish sample consisted of 243 white-collar employees (56% female). Participant age varied from 24 to 73 years ($M = 36.3, SD = 10.34$). Similar to the Dutch sample, 95% of the Turkish participants held a college (or higher) degree. On average the Turkish employees worked 8 h more than the Dutch sample ($M = 41.15 \text{ h}, SD = 9.70$). The Turkish sample reported 6.4 h of overwork per week ($SD = 8.83$), and 13% worked in tourism and 8% in academic jobs.

3.2. Measures

3.2.1. Job Resources and job demands

Two job resources (*autonomy and opportunities for learning and development*) and two job demands (*workload and mental demands*) were measured using scales developed by Van Veldhoven and Meijman (1994). All items were rated using a five-point Likert-type scale (1 = “never”, 5 = “always”), with higher scores referring to higher levels of job resources/job demands. Internal consistencies of the subdimensions for both samples are reported in Table 3. Autonomy was measured by 3 items, such as “Can you decide how to conduct your tasks”. Opportunities for personal development were also assessed via 3 items, i.e. “Does your job give you the opportunity for learning new things?”. The two job demands were *workload* and *mental demands*. Workload was measured with five items, including “Do you have too much work to do?”. Mental demands were also measured with five items, such as “Does your work require too much concentration?”.

3.3. Results

As regards the Turkish sample, the PAWS was translated into Turkish by using the translation-back translation method (Triandis & Brislin, 1984) by six Turkish work and organizational psychologists who were proficient in the English language. CFA showed that the 12-item and

2-factor structure of the PAWS was supported by the Turkish data as well ($\chi^2 (N = 243, df = 50) = 121.56, GFI = 0.93, AGFI = 0.89, CFI = 0.94, RMSEA = 0.08, AIC = 177.56$) compared to a single-factor structure ($\chi^2 (N = 243, df = 53) = 241.56, GFI = 0.85, AGFI = 0.77, CFI = 0.84, RMSEA = 0.12, AIC = 291.58, \Delta AIC = 114.02$). In order to examine the cross-cultural generalizability of the PAWS, a multigroup CFA analysis was conducted, comparing an unconstrained model in which the factor loadings could vary across the Dutch and Turkish samples to a constrained model in which the loadings, covariances and residuals were constrained to be equal. The unconstrained model showed good fit, $\chi^2 (102) = 241.14, NFI = 0.88, CFI = 0.93, TLI = 0.90, RMSEA = 0.06$. The constrained factor loadings model also showed good fit, $\chi^2 (112) = 277.13, NFI = 0.88, CFI = 0.91, TLI = 0.90, RMSEA = 0.06$. Although the chi-square difference test was significant ($\Delta\chi^2 (df = 10) = 35.98$), in other respects the constrained model did not show a major improvement compared to the unconstrained model (CFI and NNFI values decreased 0.01 and RMSEA increased 0.01 or less). Therefore, we conclude that from a practical point of view the 2-factor CFA model was equivalent across the two cultures (Cheung & Rensvold, 2002).

Table 3 shows the means, standard deviations, reliabilities and correlations among the study variables across the Dutch and Turkish samples. In the Dutch sample, neither the job demands nor the job resources showed a significant relationship with the PAWS. A small negative correlation was found between procrastination at work and mental demands in the Turkish sample ($r = -0.17, p < 0.05$). Procrastination at work was positively related to boredom ($r_{dutch} = 0.62, p < 0.01; r_{turkish} = 0.54, p < 0.01$), withdrawal ($r_{dutch} = 0.50, p < 0.01; r_{turkish} = 0.46, p < 0.01$) and abusive ($r_{dutch} = 0.55, p < 0.01; r_{turkish} = 0.54, p < 0.01$) behaviours, and general procrastination ($r_{dutch} = 0.46, p < 0.01; r_{turkish} = 0.55, p < 0.01$). The Turkish sample scored higher than the Dutch sample on both delay, $F(1, 441) = 48.31, p < 0.001$, and cyberslacking, $F(1, 440) = 366.57, p < 0.001$.

SEM analyses showed that M_1 (cf. Fig. 1) did not have acceptable goodness-of-fit indices, $\chi^2 (N = 200, df = 20) = 58.161, p < 0.001, CFI = 0.92, TLI = 0.86, GFI = 0.94, \text{ and } RMSEA = 0.10$) for the Dutch sample. After examining the modification indices, a new model (M_2) without the direct paths to CWB and with direct paths to procrastination at work from workplace characteristics was tested, resulting in improved model fit ($\chi^2 (N = 200, df = 20) = 59.23, p < 0.001, CFI = 0.96$,

Table 3
Correlations, reliabilities, means and standard deviations for the Dutch and Turkish samples.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Proc. at work	0.83/0.85	0.90	0.74	-0.12	-0.10	0.01	-0.17	0.54	0.46	0.54	-0.27	-0.28	-0.26	0.55
2. Soldiering	0.91	0.80/0.89	0.38	-0.20	-0.12	0.11	-0.17	0.53	0.39	0.54	-0.31	-0.30	-0.31	0.63
3. Cyberslacking	0.77	0.42	0.71/0.70	0.04	-0.03	-0.17	-0.11	0.33	0.37	0.33	-0.08	-0.13	-0.08	0.21
4. Autonomy	-0.06	-0.02	-0.10	0.76/0.76	0.43	-0.19	0.14	-0.34	0.00	-0.19	0.49	0.46	0.33	-0.21
5. OPD	0.05	0.05	0.02	0.34	0.80/0.86	-0.01	0.33	-0.36	-0.11	-0.22	0.57	0.62	0.41	-0.07
6. Workload	0.05	0.13	-0.09	0.11	0.27	0.85/0.81	0.36	-0.03	-0.09	-0.09	-0.12	-0.01	0.01	0.02
7. Ment. demands	-0.10	-0.06	-0.11	0.16	0.35	0.48	0.81/0.85	-0.12	-0.29	-0.29	0.25	0.34	0.25	-0.21
8. Boredom	0.62	0.55	0.49	-0.26	-0.28	-0.23	-0.35	0.90/0.90	0.22	0.53	-0.55	-0.50	-0.40	0.37
9. Withdrawal	0.50	0.50	0.32	-0.02	-0.11	-0.11	-0.25	0.49	0.60/0.69	0.51	-0.15	-0.26	-0.20	0.46
10. Abuse	0.55	0.52	0.38	-0.18	-0.09	-0.04	-0.17	0.49	0.54	0.76/0.83	-0.32	-0.34	-0.35	0.58
11. Vigor	-0.29	-0.31	-0.14	0.34	0.37	0.11	0.27	-0.59	-0.31	-0.34	0.90/0.91	0.87	0.71	-0.27
12. Dedication	-0.28	-0.28	-0.18	0.35	0.50	0.23	0.40	-0.64	-0.27	-0.30	0.83	0.93/0.92	0.70	-0.28
13. Absorption	-0.27	-0.27	-0.17	0.33	0.39	0.20	0.37	-0.56	-0.29	-0.31	0.79	0.85	0.84/0.79	-0.29
14. Gen. procrast.	0.46	0.49	0.23	-0.01	0.10	0.10	0.08	0.21	0.27	0.30	-0.12	-0.10	-0.09	0.83/0.82
M (Dutch)	1.18	1.17	1.22	3.89	3.17	2.98	3.59	1.10	1.63	1.40	1.46	4.21	2.48	2.49
SD (Dutch)	0.77	0.78	1.16	0.79	0.95	0.85	0.76	1.03	0.51	0.39	0.38	1.21	0.74	0.74
M (Turkish)	2.10	1.70	2.91	2.67	2.44	2.32	3.17	1.62	0.80	0.40	0.50	4.23	2.07	2.07
SD (Turkish)	1.08	1.17	1.50	0.73	0.96	0.79	0.67	1.38	0.63	0.40	0.40	1.25	0.74	0.74

Note. For the Dutch sample ($N = 384$, lower diagonal) correlations higher than 0.08; for the Turkish Sample ($N = 243$, upper diagonal), correlations over 0.11 are significant at $p < 0.05$. Proc. at work: Procrastination at work; OPD: opportunities for personal development; Gen. procrast.: general procrastination; Ment. demands: mental demands. Alphas are presented on the diagonal. The first estimate refers to the Dutch sample, the second estimate to the Turkish sample.

TLI = 0.93, GFI = 0.97, RMSEA = 0.07, $\Delta\chi^2 = 46.6, p < 0.01$). For the Turkish sample, the same model was run; however, for workload we found a negative error variance of -59.89 , leading to model misspecification (Kolenikov & Bollen, 2012). A reason for this could be the perception of difference among these cognitive and physical job demands within Turkish sample. Therefore, in both samples the indicator of mental demands was omitted from the model. This trimmed model – with only work load as an indicator of job demands – showed marginally acceptable fit ($\chi^2 (N = 234, df = 17) = 63.83, p < 0.001, CFI = 0.95, TLI = 0.90, GFI = 0.96, \text{ and } RMSEA = 0.08$).

Multi-group analyses were conducted on M_2 in order to examine whether the parameters of this particular model were invariant across the Dutch and the Turkish samples (Byrne, 2004). The model without including equality constraints showed acceptable fit indices, $\chi^2 (30) = 152.95, p < 0.001, CFI = 0.90, NFI = 0.88, IFI = 0.90, \text{ and } RMSEA = 0.08$. In stage one, the model with equality constraints of factor loadings did not differ from the non-constrained model, $\chi^2 (34) = 160.59, CFI = 0.90, NFI = 0.88, IFI = 0.90; \Delta\chi^2 (4) = 7.63, p = 0.11$. However, for the structural paths there was a strong and significant difference across samples, $\chi^2 (41) = 1283.01, CFI = 0.48, NFI = 0.47, IFI = 0.48; \Delta\chi^2 (7) = 1122.42, p < 0.001$. Hence, the paths among the variables were examined in order to interpret possible differences between samples.

Fig. 2 presents the standardized regression estimates for the final model (M_2) for both samples. Hypothesis 2a, stating that job resources were negatively related to boredom, was supported in both samples ($\beta_{Dutch} = -0.39/\beta_{Turkish} = -0.54, ps < 0.01$). However, workload showed a significant negative path to boredom only for the Dutch employees ($\beta_{Dutch} = -0.15, p < 0.01$), supporting Hypothesis 2b only for this sample. According to Hypothesis 3, boredom would be linked positively to a) procrastination at work and b) CWB. Our results supported both Hypothesis 3a ($\beta_{Dutch} = 0.74/\beta_{Turkish} = 0.77, ps < 0.01$) and 3b ($\beta_{Dutch} = 0.65/\beta_{Turkish} = 0.57, ps < 0.01$) across both cultures. Hypothesis 4, stating that procrastination at work and CWB would be associated, was also supported in both samples ($r_{Dutch} = 0.79/r_{Turkish} = 0.76, ps < 0.01$). Lastly, in order to check our mediation hypotheses, the bootstrapping method was applied (Preacher & Hayes, 2008). Whereas in the Dutch sample the indirect effects of job resources on the study outcomes were not mediated by boredom ($\beta = -0.21, SE = 0.13, 95\% CI [-0.29, 0.23]$), boredom did mediate the indirect effects of workload ($\beta = -0.28, SE = 0.13, 95\% CI [-0.47, -0.09]$). In the Turkish sample workload was unrelated to boredom and job resources were unrelated to procrastination at work, therefore no mediation analyses were performed. In terms of the direct links from demands to workplace procrastination, a positive relationship emerged in both samples ($\beta = 0.22/0.14, p < 0.01$). The only significant relationship between resources and procrastination was found in the Dutch sample ($\beta = 0.34, p < 0.01$).

Hence, Hypothesis 5a was only partly supported. Hypothesis 5b was rejected as no direct relationship was found between workplace characteristics and CWB.

3.4. Discussion

The primary aim of Study 2 was to further investigate the behavioural (boredom and counterproductive work behaviour) and workplace correlates (job demands and resources) of procrastination at work across two cultures. In general, our expectations were supported as an understimulating work environment was associated with workplace boredom, and boredom was positively associated with negative outcomes. These findings complement the findings of Reijseger et al. (2012) as boredom is not only associated with low job satisfaction, low organizational commitment and high turnover intention, but also with procrastination and CWB dimensions. Moreover, similar to the flow in the JD-R Model (which suggests that workplace characteristics are related to positive behaviour, such as performance, through a positive state, which is work engagement), job demands and resources were indirectly related to procrastination (behaviour) through boredom (state), at least in the Dutch sample. This finding is interesting, as situational factors could be related to a certain state of mind to postulate behaviour. The PAWS showed similar characteristics in both the Turkish and Dutch sample, showing that this scale can be employed in countries that represent different work environments. However, Turkish participants scored significantly higher on both dimensions of procrastination at work and lower on autonomy, as compared to the Dutch sample. This finding contradicts Ferrari, Özer, and Demir (2009) as they did not find significant differences between the level of general procrastination of Turkish adults, as compared to North and South American, European, and Australian samples. In addition, workload was not related to boredom among Turks. The influence of behavioural (workload) job demands does not seem to be significant for the boredom level of Turkish employees. However, low job resources were related to increased boredom, suggesting that increasing job resources could be more effective in addressing procrastination than increasing job demands. Hence, managers may consider investing in increasing job resources to eliminate boring aspects of workplaces.

4. General discussion

The present paper had two major goals. Firstly, as acknowledged by Klingsieck (2013), we consider procrastination as a concept that could take different forms in different domains. Hence, we aimed to develop and validate an original questionnaire (the PAWS) to measure procrastination behaviour in the work context. Secondly, we intended to test a model to investigate the physical (workplace) and cognitive (boredom)

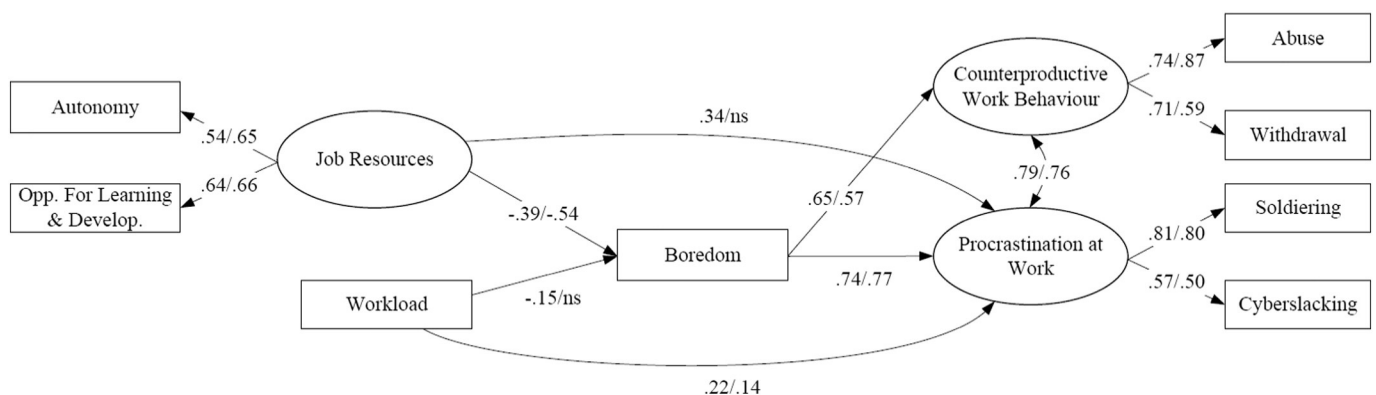


Fig. 2. Final model (M_2) and standardized coefficients among the study variables. Note. First estimate: Dutch sample ($N = 200$), second estimate: Turkish sample ($N = 243$).

correlates of workplace procrastination, as well as associated counter-productive work behaviours. To address the first goal, items from a comprehensive item pool were derived after a thorough selection process and the validity of the generated scale was explored. Our findings indicated that workplace procrastination could be distinguished empirically from general procrastination CWB and boredom, suggesting that the PAWS is a valid tool to measure workplace idleness. In addition, the invariance of the PAWS across the Dutch and Turkish samples emphasized the applicability of this scale in disparate cultures.

As regards to our second goal, our findings showed that an understimulating work environment, which is characterized by low job demands and job resources, was linked to procrastination at work through boredom. Such a state may induce job-related stress and may cause psychological detachment from work during work hours, which may lead employees to engage in non-work related pleasurable behaviours. These results support the findings of Eastin, Glynn, and Griffiths (2007) who reported that as workplace boredom increases, so does engaging in non-work related use of communication technology (cyberslacking). Also, the positive link between boredom and procrastination might be explained due to pleasure seeking activity, such as taking longer coffee breaks (Reinecke et al., 2014). Last but not least, although earlier studies did not provide clear evidence for a relationship between task performance and procrastination (Meerkerk et al., 2014), the strong relationship between procrastination and CWB was notable. The significant relationship between procrastination and CWB indicates that employees' detachment from work tasks might have hazardous outcomes. However, note that this pattern of workplace procrastination was not entirely supported among the Turkish participants as here only low job resources were related to boredom, showing no significant relationship with procrastination. It is possible that Dutch participants perceived higher autonomy in and feel more responsibility for their jobs, thus engaging to a lower degree in procrastination behaviour (Cem Ersoy, Born, Derous, & van der Molen, 2012). Moreover, Turkish employees scored significantly higher on both subscales of the PAWS. Organizations in collectivistic cultures – such as that of Turkey – tend to rely on high levels of supervision and provide low levels of autonomy to their employees, whereas the level of power distance is high in such cultures. This could mean that in such cultures on the one hand employees cannot take decisions about their tasks, whereas on the other hand they are unable to report any problems resulting from this lack of autonomy to their supervisor due to the high power distance, resulting in procrastination at work.

We believe these findings contributed to procrastination literature in several ways. Previous studies have construed employee procrastination as a harmful activity that is associated with high costs (especially monetary) for employers. From a scientific point of view, our study is the first to offer a measure that specifically assesses contemporary procrastination behaviours at work, and it is among the few studies to examine procrastination in the work context. Specifically, we have presented a generic, reliable and valid scale (the PAWS) that can be used to assess employee procrastination and to detect possible correlates of workplace procrastination. By doing so, possible workplace correlates of procrastination could be detected, potentially pointing to ways to handle this slippery concept and providing more insight in the functioning of procrastination at work. From a practical point of view, the PAWS can be used in workplace surveys to detect possible problems and solutions related to procrastination. Our results suggest that it may be possible to diminish workplace procrastination. For example, boredom seems to be an important correlate of workplace procrastination and appears to stem from low job demands and resources. Diminishing the degree of procrastination in the workplace could therefore be a matter of increasing both demands and resources. Job crafting, a bottom-up strategy initiated by employees to actively shape the boundaries of their jobs and obtain a work environment which fits their preferences, skills, and competences, could be a useful strategy to diminish the boring aspects of jobs and thus limit

procrastination (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012). Another useful intervention to reduce non-work related activity appears to be organizational time-management trainings (Van Eerde, 2003b).

4.1. Limitations and future direction

There are four important limitations to this study. Firstly, the cross-sectional design of this study prevents us from establishing causal or long-term effects of procrastination at work and other study variables. However, the major aim of this study was to develop and validate the procrastination at work scale, rather than to examine the long-term antecedents and outcomes of procrastination. Although causal relationships cannot be confirmed, our results show that the newly developed procrastination at work scale is reliable and largely relates to other concepts in the expected way, supporting its validity. More rigid longitudinal research is desirable and needed to study the causes and the outcomes of procrastination at work.

Secondly, the data was collected via self-report questionnaires, thus common-method variance might have influenced the results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, procrastination can hardly be assessed by objective measures, and this also applies to the other concepts studied in this paper. Further, Spector (2006) argues that the assumption that common-method variance automatically leads to an overestimation of the association among variables is an oversimplification. For example, Table 3 shows that some of the variables in our study are virtually unrelated to the other concepts, which discredits the reasoning that common method effects have uniformly inflated the associations among the study variables.

Third, although our analyses showed that the PAWS is a reliable and valid measure, it is still possible that some of its items can be improved in terms of their content. For instance, for a journalist the item “I read news online at work” might not necessarily impose procrastination. Likewise, instant messaging could be an internal communication tool among coworkers and can be used for work purposes. Hence, in future studies, it may be desirable to strengthen these items by adding a “for non-work purposes” statement.

Last, the data used in this research were convenience samples. Therefore, we cannot speculate about the effects of having a certain job type or being in a particular sector on procrastination behaviour at work. Researchers are encouraged to conduct job-specific studies in the future to examine the differences among certain job types or sectors. For instance, people in jobs that require more internet and mobile technology usage, such as ICT, might be more frequently engaging in cyberslacking than others.

5. Conclusions

Procrastination appears to be a type of behaviour, which is associated with negative outcomes in different walks of life. With this study, we provided empirical results for procrastination behaviour in an understudied context – the work environment – by presenting a new scale. Work environments that contain insufficient resources and demands, may increase boredom, which might eventually lead employees to engage in irrelevant or even harmful behaviours. Researchers and practitioners can apply the PAWS to assess employee idle behaviour and investigate its correlates in some detail. Therefore, future research should consider more comprehensive models including possible determinants (i.e. motivation, personality) and consequences (i.e. performance, turnover intention) of this understudied concept.

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