



LUND
UNIVERSITY

DEPARTMENT OF PSYCHOLOGY

The Role of Psychosocial Work Environment and Time Management in Understanding
Perceived Stress and Job Satisfaction in Office Work

Paula E. Lillsjö

Lund University
Master's Thesis
Spring 2015

Supervisor: Eva Torkelson
Examinator: Per Johnsson

Abstract

In recent years an increase in stress and mental strain in the workplace has been reported for instance in office work (Arbetsmiljöverket, 2014). This study examined a model that combines concepts from Karasek and Theorell's (1990) Job Demand-Control-Support model, which has earlier been related to stress, with Macan's (1994) Time Management Behavioral model. The aim of the study was to investigate if perceived demands, control, support and time management were related to stress and job satisfaction. In addition the aim was to investigate if time management behaviors contribute to explaining perceived stress and job satisfaction beyond perceived demands, control, and support. By means of an online survey, responses from 124 office workers employed in nine different companies, were received. Scales measuring demands, control, support, and time management behavior were used. The main finding was that stress was only explained by high demands, low control, and low support. Moreover two types of time management behaviors (setting goals and mechanisms for time management) explained variance in job satisfaction beyond what the demands, control, and support did. The implications of these findings were discussed and directions for future research were proposed.

Key Words: job demand-control-support model, time management, planning, stress, job satisfaction

The Role of Psychosocial Work Environment and Time Management in Understanding Perceived Stress and Job Satisfaction in Office Work

Over the last few decades, work life has changed dramatically (Arbetsmiljöverket, 2014). Organizations' structural transformations and technological innovations have transformed work life to a more individualized labour force with an increase in competition (Allvin, Aronsson, Hagström, Johansson, & Lundberg, 2011). Due to the high competition, the labour market is unpredictable, the conditions are undefined and unclear, the demands on the individual have amplified, and support is limited (Allvin et al., 2011). Previous studies have identified the rise in time pressure and pace of work over the last decades as a result of these changes (Aronsson, 1999; Albertsen, Rafnsdóttir, Grimsmo, Tomasson, & Kauppinen, 2008; Endler, Macrodimitris, & Kocovski, 2000; Häfner & Stock, 2010). According to Allvin et al. (2011) time used to be a frame or outline for work but today has become a struggle and something to fight against. Today's new work life has led to an increase in responsibility as well as intensified work hours with less leisure time. In turn, these changes lead directly to the lack of recovery, thus affecting health outcomes, and have repeatedly been connected to increased worry and stress (Lundberg & Cooper, 2011).

Nearly every fourth person in Sweden (24%) that is working has some kind of disorder related to his or her work (Arbetsmiljöverket, 2014). Applied to both men and women; the most leading cause of work-related disorders in Sweden today is stress and mental strain (Arbetsmiljöverket, 2014). There has been an increase between 2012 and 2014 from 10% to 15% of women and from 6% to 8% of men who stated that stress or mental strain was the cause of their disorder. Several professions where stress and mental strain has been regularly reported are in the teaching domain, healthcare and nursing, counselors, and doctors (Arbetsmiljöverket, 2014). Another profession that has recently been given attention when it comes to stress is office work and administrative assistants (Arbetsmiljöverket, 2014). Expanding our knowledge on the stress phenomenon must involve reaching new cultures, work places, and different perspectives. Administrative office staff would be a suitable population to study perceived stress and job satisfaction in since the rise in stress has mostly occurred in emotional and psychological strain. Administrative office staffs are less physically challenged yet more exposed to mental strain, such as management with computers, phone calls, technical machines, and interactions with people.

Both the Job Demand-Control-Support (JD-CS or Iso-Strain) model (Karasek & Theorell, 1990) and the Time Management Behavioral (TMB) model (Macan, 1994) have

been linked to work-related stress. The JDCS model is one of the most widely used models in occupational stress and is aimed to explain how work characteristics relate to employee health and stress outcomes (Häusser, Mojzisch, Nielsen, & Schultz-Hardt, 2010; Luchman & Gonzáles-Morales, 2013). The JDCS model suggests that an interaction of the work characteristics high demands, low control, and low support predict negative outcomes, such as stress and illness. Moreover, the interaction of high demands, high control, and high support predict positive outcomes at the workplace, such as active learning and motivation. However, the JDCS model does not take into account the role of individual differences (Warr, 1990). Research has shown that employees exposed to the same setting experience different stress levels because of their individual differences (Raemdonck, Gijbels, & Groen, 2014).

The TMB model takes the individual difference in self-management behaviors into account and suggests that planning and structuring ones' work will influence ones' perceived control of time and thus affect perceived stress levels (Macan, 1994). Previous studies on the TMB model have shown supportive results that time management behaviors relate to people's experience of perceived stress and well-being through perceived control of time (Claessens, Van Eerde, Rutte, & Roe, 2004; Häfner & Stock, 2010; Macan, 1994). The TMB model can be seen as part of people's individual coping strategy for how to deal with stress in the workplace. Time management is a common stress management training intervention and strategy to prevent emotional exhaustion (Peeters & Rutte, 2005; Randall & Nielsen, 2010). This strategy is also often used to recover from stress-related outcomes such as burnout (emotional exhaustion) (Randall & Nielsen, 2010).

One purpose of the current research was to investigate if perceived demands, control, support and time management were related to stress and job satisfaction. The second purpose of the current research was to investigate if individual differences in time management behaviors contribute to explaining perceived stress and job satisfaction beyond the psychosocial work environmental characteristics of demands, job control, and support from the JDCS model. No other study, to the best of my knowledge, has combined these two models along with a support component. One such study by Claessens et al. (2004) combined the Job Demand-Control (JDC) model with the TMB model. However, it is possible that the results of Claessens et al.'s (2004) study could have been different if the support component were added. Social support or work-related support means getting help and attention when problems arise and retaining good relations with colleagues at work (Raemdonck et al., 2014).

Previous studies have shown that support moderates the relationship between high work demands and stress (Häusser et al., 2010; Johnson, Hall, & Theorell, 1989; Thompson

& Prottas, 2005) and numerous studies have shown that support is connected to job satisfaction (Fila, Paik, Griffeth, & Allen, 2014; Häusser et al., 2010; Thompson & Prottas, 2005). Therefore, it is plausible that support will be related to both the outcome variables: perceived stress and job satisfaction. Work demands, low job control, and low social support were all found to relate to emotional exhaustion in a study by Verhoeven, Maes, Kraaij, and Joekes (2003). Verhoeven et al., (2003) also found that low demands, high control, and high support related to job satisfaction and personal accomplishment. Other researchers have found similar results where high demands, low decision authority (control), and low support were related to emotional exhaustion (Magnusson Hanson, Theorell, Oxenstierna, Hyde, & Westerlund, 2008). In line with this the first hypotheses are:

Hypothesis 1a: Demands, job control, and support will be related to perceived stress.

Hypothesis 1b: Demands, job control, and support will be related to job satisfaction.

The study by Claessens et al. (2004), which combined the JDC model (demands and job control) with individual differences in time management behaviors showed that demands was positively related to work strain and job satisfaction. Job control and time management behaviors related to perceived control of time, thus in turn they were positively related to job satisfaction and negatively related to work strain. Another study showed that teachers who engaged more in time management behaviors experienced less emotional exhaustion compared to teachers' who did not engage in time management behaviors when autonomy (control) at work was experienced as low (Peeters & Rutte, 2005).

Research by Raemdonck and her colleagues (2014) combined the JDCS model with individual differences in learning orientation to predict workplace learning. The results of the study showed that demands and learning orientation were strong and significant predictors of workplace learning, while job control and support were small but still significant predictors. Learning orientation will not be investigated in this study; however, it is noteworthy that more than one study has combined the JDC or JDCS model with individual differences in personality characteristics because it has been argued that individuals react differently to the same circumstances (Claessens et al., 2004; Mark & Smith, 2012; Raemdonck et al., 2014; Salo & Allwood, 2014). In brief, both internal and external factors might affect stress.

Combining the insight of the psychosocial work environmental characteristics from the JDCS model with the TMB model could lead to a more complete view of work strain and

job satisfaction than looking at work characteristics and time management behaviors separately. By combining the psychosocial work environmental characteristics (demands, job control, and support) with individual time management behaviors, the following hypotheses proposed are:

Hypothesis 2a: Time management behaviors (setting goals and priorities, mechanics for time management, and preference for organization) will be related to perceived stress and explain further variance in perceived stress beyond that which can be explained by the psychosocial work environment factors (demands, job control, and support).

Hypothesis 2b: Time management behaviors (setting goals and priorities, mechanics for time management, and preference for organization) will be related to job satisfaction and explain further variance in job satisfaction beyond that which can be explained by the psychosocial work environment factors (demands, job control, and support).

Research today puts a great emphasis on how to restructure jobs so employees' stress level will decrease but still preserve productivity (Fila et al., 2014). Hence, the results from this study could be relevant to employers in many companies. By joining the variables from the JDCS model with the TMB model, the current study will contribute to a new perspective. First, it will provide further knowledge if perceived demands, job control, and support relate to employees' stress and job satisfaction levels. Second, it will provide further information on if employees' personal differences in time management behaviors will contribute to the understanding of the perceived experience of stress and job satisfaction. The variables from the two models might together provide a more holistic view in explaining perceived stress and job satisfaction, regarding how to avoid a workplace environment related to strenuous situations for employees.

Job Demand-Control-Support Model

The workplace environment provides all psychosocial work environmental characteristics, such as work demands, job control, and social support. They all influence the employee's psychological well-being and stress level, which are connected to both strenuous situations and emotional exhaustion (Häusser et al., 2010; Magnusson Hanson et al., 2008; Van Der Doef & Maes, 1999; Verhoeven et al., 2003). The JDCS or Iso-Strain model focuses on the interaction between the psychosocial work environmental characteristics of job

demands, job control, and social support (Karasek & Theorell, 1990). At first, the model only included the demand and control dimension, the social support factor was later introduced in order to widen the original model. Job demands involve mental and physical work demands such as a high work pace, high level of responsibility, or not enough time to carry out the work required (Lundberg & Cooper, 2011). The control dimension refers to workers' control and the actual decision authority, such as choosing one's work pace and work tasks or influencing different work methods (Lundberg & Cooper, 2011). The social support factor involves informational, emotional, and practical support from coworkers and managers within the workplace. Social support is considered social companionship and assistance with work tasks (De Jonge & Kompier, 1997).

By combining the different dimensions (low/high demands, low/high control, low/high social support) the following work situations can be identified: active, passive, low strain, and high strain. All four of these situations indicate different levels of health risks (see Figure 1).

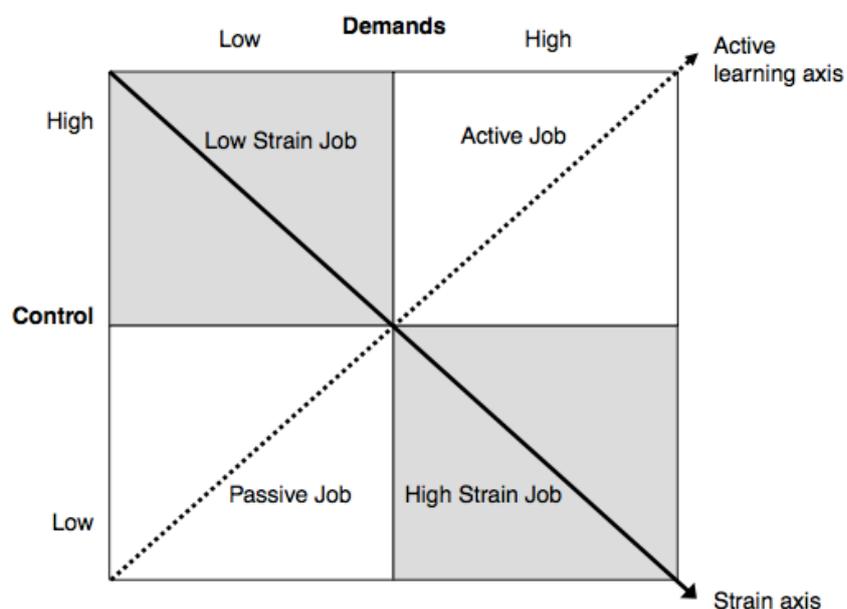


Figure 1: Job-Demand-Control-Support Model retrieved from Karasek and Theorell (1990).

According to the JDCS model, jobs with high demands, low control, and low social support are considered to be the most undesirable job situation that shows an increasing risk of ill health, which plays into the iso-strain hypothesis (Karasek & Theorell, 1990). The active learning hypothesis, on the other hand, is characterized by high demands, high control, and high social support. This work situation provides workers with the possibility to actively learn

and develop (Karasek & Theorell, 1990). The active learning hypothesis is also called the buffer hypothesis because job control and social support are challenged to buffer the negative effects of stress that are caused by the high demands (Karasek & Theorell, 1990).

One of the first studies to examine the JDCS model was made by Johnson et al. (1989), who wanted to attempt to understand if the experience of job characteristics contributed to the development of cardiovascular disease. They examined the effects of the JDCS models strain situation; more specifically the effect of a high demands, low control, and low support situation in relation to cardiovascular disease. Johnson and his colleagues used a subsample consisting of 7,219 male blue-collar workers (production, distribution, and service) and white-collar office and professional workers. Participants were randomly assigned to the study from the national register of births 1976 and 1977 from the Swedish Central Bureau of Statistics. The findings of the study showed that people in a work situation exposed to a high strain situation had an increased progression for cardiovascular morbidity and mortality compared to people in work situations with low to medium strain (Johnson et al., 1989). People in a high iso-strain situation displayed symptoms earlier and developed cardiovascular disease to a more severe extent than people in low iso-strain situations.

In recent decades, an increasing body of literature on the JDCS model has been added and built support for the model. However, there has been some inconsistency in the results. A narrative review of 63 studies using the JDC model or the JDCS model applied to psychological well-being was examined and discussed by Van Der Doef and Maes (1999). They reviewed the iso-strain hypothesis and the buffer hypothesis in an attempt to determine if the literature supported the claims. The review of Van Der Doef and Maes (1999) concerning the iso-strain hypothesis was supported and was associated with greater risk of anxiety, depression, and psychological distress, such as worry, irritability, or frustration. The review showed less support for the negative impact of the iso-strain hypothesis in case of female employees, indicating that males might be more susceptible to high strain situations. Similar results have been found and Warr (1990) also criticized the JDCS model for perhaps being a male model. Nevertheless, the review was less supportive of the buffer hypothesis than the iso-strain hypothesis (Van Der Doef & Maes, 1999). Hence, it was too early to make any conclusions about the buffer hypothesis due to then limited number of studies.

A review by Häusser and colleagues (2010) consisted of 83 studies with additional evidence for the JDCS model that could further determine what the model was contributing to in psychological (impaired) well-being and job satisfaction. When examining the iso-strain situation (additive effects) of the JDCS model on general psychological well-being, results

showed full or partial support in 50%, or 16 out of 32, studies. When Häusser et al. looked at the iso-strain situation on job satisfaction, the results showed full or partial support in 55%, or 17 out of 31, studies. Häusser et al. also reviewed the JDCS model with respect to emotional exhaustion (burnout), as part of the concept of stress. Referring to the iso-strain hypothesis in relation to emotional exhaustion supportive results were found in 39%, or 9 out of 23 studies, and of those, six studies showed full support. The authors of this review also pointed out reasons why inconsistent results were found in some studies. It often had to do with differences in sample size, sample design (cross-sectional or longitudinal design), and sample composition (homogenous or heterogeneous sample), but not due to any measurement instrument inconsistencies (Häusser et al., 2010).

In the reviews both by Van Der Doef and Maes (1999) and Häusser et al. (2010) extensive evidence has supported the iso-strain model and the JDCS model in relation to psychological well-being, job satisfaction, and emotional exhaustion. Although, even ten years after Van Der Doef and Maes' (1999) review, there is little evidence to satisfy a genuine support for the buffer hypothesis with respect to psychological well-being, job satisfaction, and emotional exhaustion (Häusser et al., 2010).

A study by Sanne, Mykletun, Dahl, Moen, and Tell (2005) examined the JDCS model in relation to anxiety and depression in a Norwegian sample of 5,562 workers with several different health service occupations, classified in the study. They found that anxiety levels were greater in women and depression levels were greater in men. Women had greater support levels than men; while men tended to have greater demand and control levels than women. Demands were found to positively correlate to anxiety and depression while control and support were negatively correlated to the two (Sanne et al., 2005). The results also showed that the people exposed to the highest demands and low control and support experienced the greatest anxiety and depression levels, supporting the iso-strain hypothesis. Although, results did not support the buffer hypothesis though the people with moderate support showed to have higher anxiety and depression levels than the people with high support. Overall results showed that psychosocial work environmental factors might identify workers at risk of anxiety and depression (Sanne et al., 2005). One restriction of the study as well as many other studies referred to in this paper is the use of self-reported data. However, studies not using self-reports when measuring the JDCS model have generally found no support, showing that the way people feel and perceive their work environment is fundamental to the effect of their well-being (Van Deer Doef & Maes, 1999).

Another study, in the United Kingdom by Wood et al. (2011) assessed 2,258 mental health workers and their association with job demands, control, and support to five measures of well-being: emotional exhaustion, depression, anxiety, intrinsic satisfaction, and personal accomplishment. The result from the study showed that control and support both had negative relations to anxiety, depression, and emotional exhaustion; while demands had a positive relation to the three. Control and support showed to have positive correlations to intrinsic satisfaction and personal accomplishment; while demands had a negative correlation to the two. The study also tested the two-way and three-way interaction effects between demands, control, and support on well-being, and they found that the two-way interaction between control and support on intrinsic satisfaction was significant. Control showed to be less important for intrinsic satisfaction when support was high. The two-way interaction between control and demands showed that control was important for increasing intrinsic satisfaction and decreasing depression when work demands were high. Three-way interactions were found for demands, control, and support in relation to anxiety and depression. Control and support buffered the negative impact of demands and tend to reduce anxiety and depression produced from high demands. No two-way or three-way interactions were found for emotional exhaustion and personal accomplishment.

With a very large sample from the working population and assessing five whole measures of well-being, the study by Wood et al. (2011) illustrates that the demands on employees, how much control one has at work, and how much support is offered are all important points in understanding well-being at work.

A longitudinal study by Magnusson Hanson and colleagues (2008) examined relations between demands, control, support, and downsizing to emotional exhaustion in men and women, in a Swedish sample of the working population. Participants who partook in the Swedish Work Environmental Survey (SWES) in 2003 were later asked to participate in the Swedish Longitudinal Occupational Survey of Health (SLOSH) in 2006. From the original 9,214 participants, 5,985 participated in the follow-up in 2006. The study found that all independent variables demands, control, support, and downsizing related to emotional exhaustion. High demands were significantly related and imposed a higher risk for developing emotional exhaustion in both men and women. Low decision authority (control) was correlated to emotional exhaustion for both men and women, but showed to be significant only in women. Lack of support was related to emotional exhaustion for both men and women but in different ways. Lack of support from superiors was related to emotional exhaustion in men; whereas lack of support from colleagues was related to emotional exhaustion in women.

One weakness, which makes the study's results to be interpreted with caution, is that emotional exhaustion was not measured in SLOSH, 2003. The possibility that some workers were already emotionally exhausted in 2003 and could have inflated the associations is a discomfort. Nevertheless, after the 2006's data showed that physical and emotional exhaustion were moderately correlated to one another the study reduced the problem by eliminating physical exhaustion and sick leave from baseline (2003).

Research by Mark and Smith (2012) investigated work characteristics and individual differences in coping styles related to stress and job satisfaction. The study examined the connections between demands, control, and support, as well as effort and rewards, coping, and attribution style when trying to predict anxiety, depression, and job satisfaction. The study had a sample of 307 university employees and 120 participants from the general population in UK. The results of the two populations were then compared to each other. The results of Mark and Smith (2012) concerning the variables from the JDCS model job demands, control, and support showed that high demands were related to higher anxiety; while control (decision authority) and social support were related to lower anxiety. Job demands were correlated to higher depression while social support and control (skills discretion) were correlated to lower depression. Job demands were correlated to lower job satisfaction while high social support and control (decision authority) were correlated to higher job satisfaction (Mark & Smith, 2012).

Other research done with university employees have found similar results as Mark and Smith (2012). When also investigating work characteristics and their relation to job satisfaction and well-being (McClenahan, Giles, & Mallett, 2007), found that demands positively related to psychological distress and burnout, and negatively related to job satisfaction. Control and support were both found to negatively relate to psychological distress and burnout, and positively relate to job satisfaction. Yet, except for Mark and Smith (2012), who found that control buffered the effects of demands in the depression analysis, neither of the results by Mark and Smith (2012) nor McClenahan et al., (2007) revealed any two-way or three-way interaction effects. The study by Mark and Smith (2012) is highly applicable and generalizable to the current study's investigation though the sample comprised of a large number of workers with administrative responsibilities in their work. However, the university employees did show to have higher anxiety and depression levels than the employees from the general population.

A recent study on the JDCS model by Fila and colleagues (2014) investigated the job characteristics from the model to determine if they related to nine different facets of job

satisfaction. The study sample consisted of 343 employees in a large public sector human services organization. The sample contained social service caseworkers, supervisors, and administrative personnel whose jobs consisted of protecting children from neglect and abuse and help families take care of their children. The focus of the study was to test facet differences within a stress context and to see how job demands, job control, and support related to nine different facets of job satisfaction (fringe benefits, communication, rewards, nature of work, operating conditions, pay, promotion, supervisory support, and coworker support). The study used a self-report survey to conduct the data. Results supported that job demands such as role overload were negatively related to all nine facets of job satisfaction. Job control and task variety was positively related to all nine facets of job satisfaction (Fila et al., 2012). Supervisory support was also positively related to all facets of job satisfaction, and coworker support was positively related to all but fringe benefits and coworkers. Taken together, all these articles mentioned above provide robust support for the JDCS model and its relation to job satisfaction and stress research.

Time Management Behavioral Model (TMB)

The TMB model is based on the theory that individual time management behaviors will influence perceived control of time and thus affect perceived stress levels (Macan, 1994). Increasing perceived control is found to reduce perceived stress and will in turn affect job induced tension, somatic tension, job satisfaction, and job performance (Macan, 1994). The TMB model of planning behavior consists of three different subcategories: setting goals and priorities, mechanics for time management, and preference for organization. Setting goals and priorities includes: making plans, coming up with short-term and long-term goals, and allocating tasks and resources after a prioritizing schedule (Claessens et al., 2004). Mechanics for time management includes making lists and taking notes. Preference for organization includes the maintenance of an organized (structured) or disorganized (messy) work environment (Macan, 1994). Time management behaviors involve individual differences in self-managing and coping with their work. It determines how people set up goals, prioritize and decide in what order tasks should be handled, evaluate and make possible changes when problems arise, and differences in peoples' workplace patterns. Macan's (1994) TMB model is displayed in Figure 2.

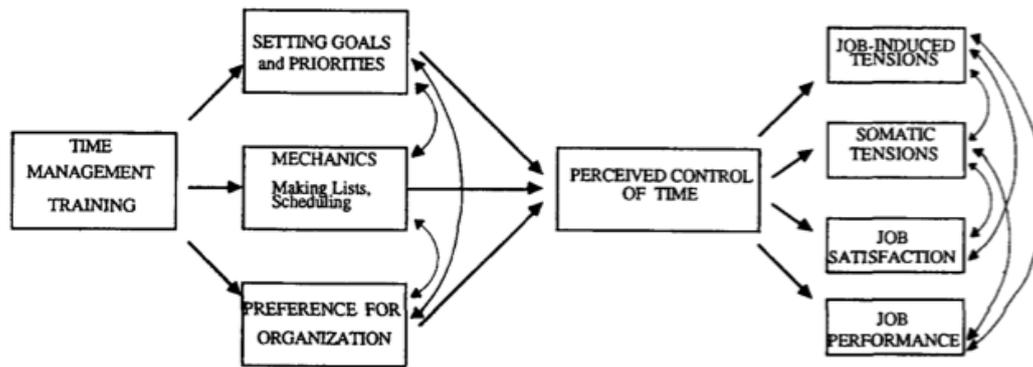


Figure 2: Time Management Behavioral model retrieved from Macan (1994).

Previous research has shown that time management and structuring ones' work has become a prominent issue in today's work environment (Häfner & Stock, 2010). As mentioned in the beginning of this paper, the restructuring of today's work has amplified the pressure of mental and emotional demands on the individual, often leading to stress and resulting in emotional exhaustion and burnout (Allvin et al., 2011).

Stated by the American psychologist Richard Lazarus, there is an interaction between the individual and the environment, and the behavior of the individual is dependent on the appraisal of a threatening or challenging situation (Allvin et al., 2011). Lazarus acknowledged that stress could arise and be coped with differently in individuals depending on external or internal demands (Allvin et al., 2011). When the individual sees the demands as exceeding the personal resources a stress reaction will arise and, according to Lazarus, individuals will act upon the situation and choose strategies to cope with the stress (Lundberg & Cooper, 2011). Time management and planning behaviors can be used as a form of coping strategy. Stated by Claessens et al. (2004) planning might help to prevent and avoid overload of work, and to allocate energy more successfully and efficiently. Planning behavior is thought to enhance the individual factor of perceived locus of control (Macan, 1996). High internal locus of control is the belief that employees can influence what is happening to them by their own actions, leading to reduced feelings of stress at work (Lundberg & Cooper, 2011). High external locus of control, on the other hand, makes employees believe that they cannot influence what is happening to them, leading to increased feelings of stress at work (Lundberg & Cooper, 2011).

For example, a study by Macan (1994) found that planning behaviors had a positive relation to perceived control of time and that perceived control of time further had a positive correlation to job satisfaction, as well as a negative relationship towards somatic tension.

Adam and Jex (1999) also found that time management behaviors related to job satisfaction and health through perceived control of time but in different directions. Setting goals and priorities and preference for organization were positively related to health and job satisfaction through perceived control of time; while mechanics for time management was negatively related to health and job satisfaction through perceived control of time (Adam & Jex, 1999).

Results from more recent research by Chang and Nguyen (2011) found the same result as Adam and Jex (1999) when examining Macan's TMB model, except for mechanics for time management, which they found no relation to perceived stress or job satisfaction.

Time management behaviors can also be seen as a form of goal setting, where goals are clarified, monitored, and altered into strategies of how to use time in an effective manner (Macan, 2004). In a more ecologically valid study by Häfner and Stock (2010), they wanted to look into if participating in time management training would lead to greater perceived control of time, that in turn would result in better well-being. Häfner and Stock (2010) examined this in an intervention study by using an experimental group that received training in time management with a control group that did not receive any training. There were 71 employees in a trading company located in Germany that partook in the experiment with 34 participants in a training group and 35 in a control group. All participants did a pretest and a posttest so the researchers later could compare the groups' changes in the results. The findings revealed that the experimental group, after receiving time management training, experienced greater control of time and less stress. Furthermore, the control group showed no change in the perception of control over time or stress. However, the sample size was fairly small in this study and the response-rates from the different measures were low, meaning that all measures were not fully completed. Thus limiting the reliability of the study.

Other intervention studies on time management behaviors have been made but in academic settings. Both Häfner, Stock, Pinneker, and Ströhle (2014) and Häfner, Stock, and Oberst (2015) examined if time management training would affect perceived control of time and perceived stress (demands and tension), but used slightly different methodological designs. Häfner et al. (2014) used one experimental and one control group when testing them on measurements of perceived control of time, and perceived stress (demands and tension). A pretest was completed before intervention and a posttest two weeks after intervention. Häfner et al. (2015) tested the same measurements and used an experimental group only but used a pretest before intervention, one posttest two weeks and another four weeks after intervention. Both studies used rather short intervention versions where time management training lasted for two, respectively four hours. Häfner et al. (2014) used a larger sample with 177 college

freshman (89 for the experimental group and 88 for the control group) compared to Häfner et al. (2015) who used 23 undergraduate students. The results of both studies showed that participating in time management training decreased perceived stress and increased perceived control of time, emphasizing the practical bearing of time management skills. In the study by Häfner et al. (2014), the results revealed that the control group showed an increase in tension from pretest to posttest, while the experimental group did not. Perceived control of time showed an increase from pretest to posttest in the experimental group, but not in the control group. Results from Häfner et al. (2015) revealed that compared to the pretest, after two and four weeks after the time management training, participants still felt less stress. Perceived control of time was significantly enhanced after four weeks, but not after two weeks, indicating perceived control of time has a time delay effect.

Nonis, Hudson, Logan, and Ford (1998) looked at perceived time management as a coping strategy for stress and investigated 164 college students on academic stress, well-being, problem-solving ability, and academic performance. Not mentioned in the two academic intervention studies above is that students in college are exposed to many stressors when moving away from home for the first time. Students need to be aware of those new stressors of studying and academic performance, making food, doing their laundry, being on their own, making friends, finances, and so on. It is important for students to learn different stress coping strategies to better alleviate academic stress and to cope with college life (Nonis et al., 1998). The results of Nonis et al.'s (1998) study showed that perceived control of time did influence academic stress, health, and problem-solving ability. Both academic stress and perceived control of time, however, did not influence academic performance. These findings were in line with Häfner and Stock's (2010), Häfner et al.'s (2014), and Häfner et al.'s (2015) results and provide further evidence for that time management influence feelings of being in control, which can decrease stress and increase psychological well-being.

Important to mention here is that the three latest studies discussed used students as their sample and students really have not had any full time jobs before so maybe they are not the best samples to generalize from these results.

Alternatively a study examining the TMB model taken from the working population originated from a variety of organizations and was done by Jex and Elacqua (1999). The sample consisted of 525 participants who were full-time employed and studied part-time for an undergraduate or graduate degree. They investigated in the TMB model and if workers who engaged in time management behaviors experienced less strain than workers that did not. These relations would be mediated by feelings of control. Jex and Elacqua also examined if

time management behaviors would moderate the relationships between stressors (role conflict, role overload, work-family conflict, family-work conflict). The results revealed that feelings of control showed to have a strong negative correlation with strain but the three time management behaviors also had direct negative correlations with strain, though small correlations. Two out of the seven measures in the study had low cronbach alpha values and reliability linked with work-family conflict and feelings of control over time and therefore restricted the investigation. However, the findings of this study provide support for that time management behaviors relate to employee's well-being.

One study that has combined the JDC model with the TMB model is Claessens and colleagues (2004) where they examined if perceived control of time would fully mediate the relationship between planning behaviors, workload (demands), and job autonomy to job satisfaction, work strain, and performance. Participants consisted of 124 engineers from an international company in manufacturing of advanced technology systems for the semiconductor industry. The results of the study found that a full mediation model of planning behaviors, workload, and job autonomy did relate through perceived control of time to job satisfaction, work strain, and performance to some extent but not strongly (Claessens et al., 2004). Hence, when they also incorporated partial mediation to the model with direct relations to planning behavior on job satisfaction, for workload on strain, and for workload on job satisfaction, the model highly improved and showed a significant result. This showed that planning behaviors and workload are both directly related to employee well-being and through perceived control of time; while autonomy only through perceived control of time.

Reviewing the time management literature, there are results supporting that time management behaviors are related to perceived control of time and thus perceived control of time in turn is related to job satisfaction, stress, and well-being (Chang & Nguyen, 2011; Claessens et al., 2004; Claessens, Van Erde, Rutte, & Roe, 2007; Häfner & Stock, 2010; Macan, 1994; Nonis et al., 1998). Although, the relation between time management behaviors and performance is unclear and scarce results have been found that planning affects performance (Claessens et al., 2004; Claessens et al., 2007; Macan, 1994; Nonis et al., 1998).

Proposed Model

The aim of this study was to investigate if the work characteristics' demands, job control, and support, together with the time management behaviors setting goals and priorities, mechanics for time management, and preference for organization, are related to perceived stress and job satisfaction. The purpose was to see if individual time management

behaviors would contribute to and further explain stress and job satisfaction beyond what the work characteristics demands, job control, and support would explain. Therefore, the following model was proposed:

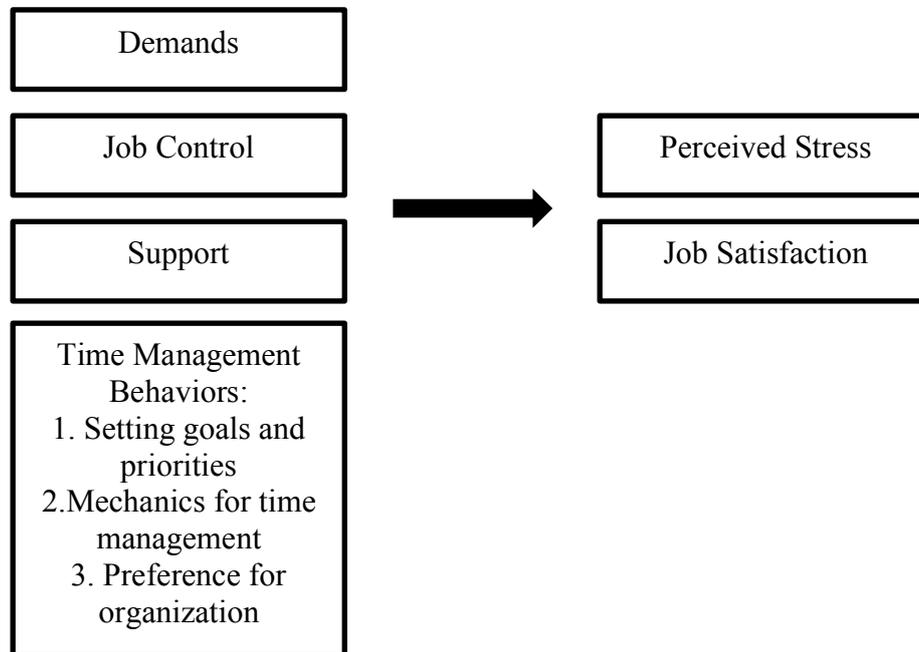


Figure 3: Proposed model

Stress has been a major concern in these last decades since we, today, live in a time of accelerating expectations (Lundberg & Cooper, 2011). Reports on tiredness, insomnia, worry, and anxiety have been collected since the 1980s and through the twentieth century increased both in Europe and North America (Allvin et al., 2011). The justification for the problem of these changes and increase in demands was overstrain and exhaustion (burnout) caused by an incapacity to cope with the expectations (Allvin et al., 2011). Hence, it is important that we examine the work-related stress subject and what underlying factors that might influence and contribute to those increased amounts of stress levels.

Method

Sample

In the current study, a systematic sampling method was adopted to investigate and reach white-collar, administrative office workers. Responses from online surveys were collected from administrative office workers that originated from nine different companies. Questionnaires were distributed to 315 employees and 124 individuals completed the

questionnaire, issuing a 39% response rate. The sample consisted of 56 females and 68 males. Participants consisted of 3.6% between the ages 18 and 24 years of age, with 17.3% between the ages 25 and 34 years of age, with 24.5% between the ages 35 and 44 years of age, with 31.6% between the ages 45 and 54 years of age, and with 23% between the ages 55 and 65 years of age. Among the participants 56.5% were married, 28.2% were cohabitant, 4.8% were single parents, and 10.5% were single.

Measures

The study consisted of an online-based self-report questionnaire that measured perceived experiences of demands, job control, support, time management behaviors, stress and job satisfaction. Additionally, some demographic variables were allocated consisting of age, gender, and marital status.

The five variables; demands, job control, support, perceived stress and job satisfaction all derived from different subscales of The Copenhagen Psychosocial Questionnaire II (COPSOQ II) (Pejtersen, Kristensen, Borg & Bjorner, 2010) in a Swedish version (Berthelsen, Westerlund, & Kristensen, 2014). The COPSOQ II was established to measure the psychosocial work environment. The COPSOQ II has been translated into several languages and used internationally, becoming a widely used measure of psychosocial work environment in many countries (Berthelsen, Westerlund, & Kristensen, 2014).

Demands were measured with a seven-item scale derived from the subscale “quantitative demands”, indicating work demands at the workplace. Furthermore, whether a person thinks that there is a lot of work to do and if the work pace is high. Responses were made on a five-point scale ranging from *never/hardly ever* (1) to *always* (5). Sample item: “Is it necessary that you work overtime?” The Cronbach alpha was .84.

Job Control was assessed using a 5-item scale derived from the subscale “influence at work.” Responses are made on a five-point scale ranging from *never/hardly ever* (1) to *always* (5). Sample item: “Do you have a large degree of influence concerning your work?” The Cronbach alpha was .79.

Support was assessed with a four-item scale derived from the subscales “support” and “feedback.” It is representing both co-workers and supervisory support. Responses were made on the same five-point scale used for assessing demands and job control ranging from *never/hardly ever* (1) to *always* (5). Sample item: “How often do you get help and support from your immediate superior?”. The Cronbach alpha was .78.

Perceived Stress was measured using a fourteen-item scale derived from the subscales

“vitality, somatic stress, behavioral stress and cognitive stress”. Responses were made on a five-point scale ranging from *not at all* (1) to *all the time* (5). Sample item: “During the last four weeks how often have you had problems concentrating?” The Cronbach alpha was .82.

Job Satisfaction was assessed with a four-item scale derived from the subscale “job satisfaction”. Responses were made on a five-point scale ranging from *not satisfied* (1) to *very satisfied* (4). Sample item: “How pleased are you with the people you work with?” and. The Cronbach alpha was .79.

Time Management is indicating that individuals plan their behavior by setting goals and priorities, making lists and schedules to accomplish their tasks, and how to organize the workspace. It was measured with a twenty-nine-item scale derived from the subscales “Setting Goals and priorities, Mechanics of Time Management, and Preference for Organization” of the Time Management Behavior (TMB) Scale (Macan, 1994) in a Swedish version (translated by the author). Responses were made on a five-point scale ranging from *do not agree at all* (1) to *completely agree* (5). The Sample items: “I make lists of things to do”, “I evaluate my daily schedule”, and “I get some of my most creative ideas when I am disorganized.” Cronbach alpha were .80, .81, and .71 for the setting goals and priorities, mechanics of time management, and preference for organization scales respectively.

Procedure

The present study was a quantitative cross-sectional study and data was collected from the participants in one wave. All measures were self-administered using a web-based online survey questionnaire provided through www.surveymonkey.com. Using self-report questionnaires is suitable for measuring psychological perceptions (Fila et al., 2014). Questionnaires are particularly useful in finding out people’s opinions about their work and what their personal experiences are (Fila et al., 2014). The survey questionnaire asked about the participants experience with job demands, job control, and support, time management behaviors, perceived stress and job satisfaction. The participants received an e-mail from their company’s HR-department that contained a cover letter with information about the study’s aim and what questions the survey questionnaire contained, the instructions for completion, the assurance of confidentiality, the link to the survey, and contact information if further questions arose. Emphasis was also put on voluntary participation and the opportunity to withdraw at any time if wanting to. All respondents who completed the survey questionnaire did so on company time and completion of the survey was considered consenting to partake in the study. A week after participants first were sent an e-mail they received a reminder e-mail

about the study with the same information as in the initial e-mail. The demographic questions were first presented followed by the scales described earlier. On the last page, participants were notified that they had completed the survey and were thanked for their contribution. The survey took roughly between 8 to 12 minutes to complete.

To my knowledge, this study is the first in conducting information on the TMB scale of planning behavior in Sweden so a translation was made into Swedish specifically for this investigation. To do this, permission from the original author of the scale Macan (1994) was needed, and later approved. The translation of the scale included, first a translation from English into Swedish, and then a back-translation (Hulin, 1987) from Swedish into English of the original 32-item version of the TMB Scale. Two bilingual Swedish and English speaking people translated the scale into Swedish independently. Then a language expert in both Swedish and English did a back-translation of the scale back to English. The back-translation revealed differences in three items, which were discussed and resolved. This back-translation was done to ensure that the translated scale was a reliable and an accurate translation of the original scale (Hulin, 1987). The Swedish version of the scale can be seen in *Appendix 1*.

An exploratory factor analysis was also conducted of the twenty nine-items to see how well they fitted to the three factors of the scale (see Table 1). The factors were rotated with Varimax Rotation and three factors were retained that together accounted for 44.76% of the common variance. The three factors comprised 11, 10, and 8 items, respectively. Table 1 presents the basic descriptors of the items and the results of the factor analysis. Factor 1 (mechanics for time management) accounted for 27.66% of the variance with an eigenvalue of 7.6. Factor 2 (setting goals and priorities) accounted for 9.86% of the variance with an eigenvalue of 2.9. Factor 3 (preference for organization) accounted for 7.23% of the variance with an eigenvalue of 2.1. Items seven and twenty-one did not present acceptable communality values and were far below .30 and were therefore excluded in additional analyses. Furthermore, six items showed significant saturation in more than one factor, items 4, 5, 9, 10, 21, and 25. However, all contained higher values in the factor they were intended to be references to before the analysis, and were therefore kept in later analyses. Even though the Swedish scale had not been tested before, the Swedish translation of the scale showed good reliability and alpha values. Moreover, the factor analysis revealed similar results to that of the original scale by Macan, (1994) and the Swedish scale was upholding the psychological dimensions intended by Macan.

Table 1

Factor loadings for exploratory factor analysis with varimax rotation of the TMB scale.

Item	Mean	SD	Factor			Communality
			1	2	3	
Keeps long-term goals (1)	2.85	.830		.72		.52
Reviews goals (2)	3.27	1.021		.78		.61
Breaks down tasks (3)	3.56	.973		.61		.44
Set short-term goals (4)	3.36	1.005	.39	.52		.42
Sets deadlines (5)	3.60	.970	.35	.57		.54
Increasing task efficiency (6)	3.52	.858		.58		.37
Completes priority tasks (7)	4.02	.765		.24	.23	.11
Reviews activities (8)	2.72	.940		.58		.37
Evaluates daily schedule (9)	2.42	1.018	.31	.52		.44
Set Priorities (10)	3.17	1.085	.32	.37		.30
Carries notebook (11)	2.73	1.393	.64			.45
Schedules events weekly (12)	3.27	1.075	.50			.29
Practices recordkeeping (13)	2.71	1.336	.55			.31
Schedules time daily (14)	2.99	1.127	.67			.47
Write reminder notes (15)	3.75	.968	.75			.58
Makes list of things to do (16)	3.11	1.238	.76			.62
Carries appointment book (17)	2.72	1.517	.67			.49
Keeps daily log (18)	2.04	1.136	.63			.40
Organizes paperwork (19)	2.39	1.446	.42			.32
Avoids interruptions (20)	2.56	1.038	.24			.10
Uses waiting time (21)	2.93	1.117	.42	.31		.29
Leaves clean workspace (22)	3.46	1.251			.52	.31
Forgets lists made (23)	3.60	1.019			.55	.35
Is disorganized (24)	4.05	1.111			.66	.49
Schedules wasted time (25)	3.97	.901	.38		.45	.43
Believes days to be unpredictable (26)	3.09	.911			.34	.30
Is disorganized (27)	3.45	1.014			.65	.48
Has messy workspace (28)	3.50	.924			.75	.57
Organizes tasks by preference (29)	3.80	.908			.55	.32

Note. $N = 124$. *Factor 1* = Mechanics for Time Management; *Factor 2* = Setting Goals and Priorities; *Factor 3* = Preference for Organization. (Saturations above .28 are incorporated)

Analytical Considerations

All analyses were performed using the statistical Package for Social Sciences (SPSS) version 22. Data was screened for data entry errors, missing values and outliers. From the original 129 participants, five participants were deleted from further analyses though they had no data entry on any of the variables, leaving 124 participants in our sample. Running a Missing Value Analysis, the less than 5% missing data were revealed to be Missing Completely at Random (MCAR)(sig level .97) and scattered across variables. Therefore, a total of 37 missing values were substituted with the mean, which according to Tabachnick and Fidell (2013) is the most conservative way to deal with missing values. Data was also checked for normality, linearity, homoscedasticity, along with multicollinearity and singularity. The job satisfaction variable was found to violate the normal assumption on skewness (-1.10) and was transformed using Logarithm to the value (-1.78), thus the transformation did not improve the skewness but made it worse. Therefore we kept the original value even though it differed moderately but significantly from the normal curve. According to Tabachnick and Fidell (2013) it is common within large sample sizes that the null hypothesis of normality is likely to be rejected. This is true even with minor deviations and therefore not a threat to the later analyses. Perceived stress was also found to have abnormal skewness (1.05) and was transformed with Log10 (.40), and thus met the normal assumption.

Results

The relationships between perceived stress, job satisfaction, demands, control, support, setting goals and priorities, mechanics for time management, and preference for organization were explored using Pearson correlation coefficient (see Table 2). Perceived stress was significantly related to demands, control, and support ($r = .43, -.25, -.18$). Thus, fully supporting hypothesis 1a that demands, control, and support would be related to perceived stress. Nonetheless, perceived stress was unrelated to all three time management behaviors; setting goals and priorities, preference for organization, and mechanics for time management. Job Satisfaction was significantly related to control, support, setting goals and priorities, and preference for organization ($r = .47, .47, .37, \text{ and } .21$ respectively). Hence, partly supporting hypothesis 1b that demands, control, and support would be related to job satisfaction. Conversely, job satisfaction was not related to demands or mechanics for time management.

Table 2

Means, standard deviations, and person correlation coefficients among the study variables

	1	2	3	4	5	6	7	8	Mean	SD
1. Perceived Stress	-								1.42	0.10
2. Job Satisfaction	-.37**	-							15.00	2.50
3. Demands	.43**	-.15	-						20.40	4.38
4. Control	-.25**	.47**	.01	-					15.34	3.48
5. Support	-.18*	.47**	-.20*	.30**	-				14.61	2.89
6. Setting Goals and Priorities	-.14	.37**	.08	.28**	.31**	-			28.46	5.50
7. Mechanics for Time Management	-.07	.17	.28**	.31**	.10	.54**	-		28.92	4.76
8. Preference for Organization	-.12	.21*	-.11	-.04	.05	.21*	.13	-	28.64	7.70

Note. ** $p < .01$ level, * $p < .05$ level (2-tailed); $N = 124$

Multiple hierarchical regression analyses were used to test the proposed model and the hypotheses 2a and 2b. Two multiple hierarchical regression analyses were performed separately to determine relationships between demands, job control, support, and time management behaviors on each of the dependent variables, perceived stress and job satisfaction. The first analysis tested demands, job control, support, and time management behaviors in relation to perceived stress. The independent variables were entered in three steps (see Table 3). The first step controlled for demographic variables and contained gender and age. The second step added the independent variables demands, job control, and support to the model. The third step added the independent variables setting goals and priorities, mechanics for time management, and preference for organization to the model. In the second analysis (see Table 4) the independent variables were entered in the same three steps but the dependent variable perceived stress was substituted for job satisfaction.

Multiple Hierarchical Regression Analysis Predicting Perceived Stress

For Step 1 in the model, demographic variables (age and gender) explained 5.5% of the variance in perceived stress $F(3,120) = 2,345$ $p = .076$, $\Delta R^2 = .06$. Still, the demographic variables were not significant predictors of stress. In Step 2, after adding demands, control, and support, the total variance explained by the model was 36%, $F(6,117) = 7.911$ $p < .001$, $\Delta R^2 = .31$, F change (3,117) = 12,786 $p < .001$. β -values were significant for demands ($\beta =$

.46, $p < .001$), control ($\beta = -.25$, $p < .05$), and support ($\beta = -.18$, $p < .05$). Demands was positively related to perceived stress in the model. On the contrary, control and support were negative significant predictors, showing that higher demands predict perceived stress and that higher control and support predicts less perceived stress. In Step 3, after adding setting goals and priorities, preference for organization, and mechanics for time management, the total variance explained by the model was 39%, $F(9,114) = 5,889$ $p < .001$, with an $\Delta R^2 = .03$, F change (3,114) = 1.601 $p = .193$. However, none of the three time management behaviors setting goals and priorities, mechanics for time management, or preference for organization entered in Step 3 were significant predictors to perceived stress in the model. Thus, not supporting hypothesis 2a that the time management behaviors setting goals and priorities, mechanics for time management, and preference for organization would add further explained variance in perceived stress beyond what the work characteristics demands, control, and support would.

Table 3

Multiple hierarchical regression predicting perceived stress

		Perceived Stress	
Predictor		ΔR^2	β
Step 1		.06	
	Gender		-.14
	Age		-.09
Step 2		.31**	
	Demands		.46**
	Control		-.25*
	Support		-.18*
Step 3		.03	
	Setting Goals and Priorities		-.07
	Mechanics for Time Management		-.11
	Preference for Organization		-.07
Total R ²		.39	

Note. $N = 124$. ** $p < .001$, * $p < .05$. Demographics were coded as, gender (*female* = 1, *male* = 2), age (*between 18-24 years* = 1, *between 25-34 years* = 2, *between 35-44 years* = 3, *between 45-54 years* = 4, *between 55-65 years* = 5).

Multiple Hierarchical Regression Analysis Predictors of Job Satisfaction

For Step 1 in the model, demographic variables explained 4.9% of the variance in job satisfaction $F(3,120) = 2,053$ $p = .110$, $\Delta R^2 = .05$. Still, the demographic variables were not significant predictors of job satisfaction. In Step 2 in the model, after adding demands, control, and support, the total variance explained by the model was 37%, $F(6,117) = 11.658$ $p < .001$, $\Delta R^2 = .32$, F change (3,117) = 20.274 $p < .001$. β -values were significant for control ($\beta = .37$, $p < .001$) and support ($\beta = .35$, $p < .001$), but not for demands ($\beta = -.11$, $p < .166$). Control and support were positive significant predictors in the model, meaning that the greater the control and support offered the higher job satisfaction level. However, demands was not a significant predictor to job satisfaction in the model. In Step 3 in the model, after adding setting goals and priorities, mechanics for time management, and preference for organization, the total variance explained by the model was 43%, $F(9,114) = 9.606$ $p < .001$, with an $\Delta R^2 = .06$, F change (3,114) = 3.816 $p = .012$. β -values were significant for setting goals and priorities ($\beta = .19$, $p < .05$) and preference for organization ($\beta = .16$, $p < .05$), but not for mechanics for time management ($\beta = -.07$, $p < .469$) Setting goals/priorities and preference for organization were positive significant predictors in the model, showing that the more individuals set goals/priorities and organizing their workspace the higher the job satisfaction level. Though, mechanics for time management was not a significant predictor to job satisfaction in the model. Thus, partly supporting hypothesis 2b that the time management behaviors setting goals and priorities, mechanics for time management, and preference for organization would add and further explain variance in job satisfaction beyond what the work characteristics demands, control, and support would.

Table 4

Multiple hierarchical regression predicting job satisfaction

		Job Satisfaction	
Predictor		ΔR^2	β
Step 1		.05	
	Gender		.02
	Age		.16
Step 2		.37**	
	Demands		-.11
	Control		.37**
	Support		.35**
Step 3		.06*	
	Setting Goals and Priorities		.19*
	Mechanics for Time Management		-.07
	Preference for Organization		.16*
Total R ²		.43*	

Note. $N = 124$. ** $p < .001$, * $p < .05$. Demographics were coded as, gender (*female* = 1, *male* = 2), age (*between 18-24 years* = 1, *between 25-34 years* = 2, *between 35-44 years* = 3, *between 45-54 years* = 4, *between 55-65 years* = 5).

Discussion

The JDCS model has been argued to be an overly simplistic model and that the model accounts for three job characteristics but no personal individual differences (Warr, 1990). Therefore, this study combined concepts from the JDCS model with time management behaviors from the TMB model to increase the knowledge about individual aspects that can contribute to explain perceived stress and job satisfaction. The purpose of the study was to investigate if perceived demands, control, support and time management were related to stress and job satisfaction on a Swedish sample of office workers. A further purpose was to investigate if time management behaviors contribute to explaining perceived stress and job satisfaction beyond the variance explained by perceived demands, control, and support.

The results showed full support for hypothesis 1a, meaning that demands, control, and support all related to perceived stress. Demands was positively related and control and support were negatively related to perceived stress. The findings indicate that the greater the demands the higher perceived stress levels, and the more control and support provided at the

workplace the lower perceived stress levels, in line with what Verhoeven et al (2003) and Wood et al. (2011) found.

Demands was the strongest predictor ($\beta = .46$) of perceived stress. Having an exceedingly high demands and countless work tasks could be challenging but it could also be threatening if demands exceed the personal resources to cope with them. People could feel that they will not be able to complete all their work tasks and responsibilities on time, which is linked to higher perceived stress levels. The results were in line with and expand on previous findings from Claessens et al. (2004) and McClenahan et al. (2007), who found that demands was positively related to work strain and distress.

Control and support accounted for small but still significant explained variance in perceived stress ($\beta = -.25$, $\beta = -.18$). This suggests that control and freedom at work might enhance the feelings of being in control and thereby reduce perceived stress levels. Obtaining support from colleagues and superiors might increase feelings of belongingness and being secure in ones role, which could contribute to less perceived stress. This is supported by former research by Wood et al. (2011), which found that control and social support had negative correlations to anxiety, depression, and emotional exhaustion. Moreover, Mark and Smith (2012) found similar results that control (decision authority) and social support were related to lower anxiety and emotional exhaustion with a large number of the sample coming from workers with administrative office responsibilities.

The results only partially confirmed hypothesis 1b, meaning that demands, control, and support were not all related to job satisfaction. Control and support were found to have a positive relation to job satisfaction, while demands unexpectedly did not reveal any connection. Yet, this showed that the more control and support perceived at the workplace the higher the job satisfaction levels. In contrast to the study by Claessens et al. (2004) which found demands to be positively related to job satisfaction, the present study found no support for such relation. Claessens et al.'s results suggested that people might not always experience negative consequences from high demands. People might feel a sense of accomplishment and growth from being challenged at their work. The current study nonetheless, showed to have a negative, yet insignificant relation to job satisfaction, suggesting that having high demands were not always rewarding, challenging, and brought feelings of accomplishment. Having high demands might not essentially lead to growth. People might have high demands and finish all their tasks on time while being stressed, but even though the tasks might be countless they are not necessarily challenging or fun. Tasks could also just be repetitive, dull, and tiresome, not enhancing feelings of satisfaction. For example, Mark and Smith (2012) and

McClenahan et al. (2007) both found that higher demands were associated with lower job satisfaction.

Another possibility that demands was not related to job satisfaction in the present study could be that when high demands is present and individuals still complete their tasks, they are not given enough time or chance to be creative. Individuals might not challenge themselves to come up with innovative ideas or new ways to complete tasks. They only do just enough to finish their tasks because they do not have enough time to complete them in an outstanding manner. Hence, this could lead to that individuals will not feel job satisfaction when the demands are high.

Control and support stood for moderate significant roles in job satisfaction ($\beta = .37$, $\beta = .35$). Control as in autonomy and freedom to take decisions, make mistakes, and verify ones skills add to an individuals experience and personal growth, hence increased job satisfaction. Getting support from colleagues and superiors could increase the thoughts that one is not alone but relates to and belongs to a group, which could enhance job satisfaction. Receiving support from colleagues and superiors might also increase courage and confidence, which could contribute to higher job satisfaction. These results support research by Wood et al. (2011) which found control and support to have positive relations to intrinsic satisfaction and personal accomplishment. Additionally, Fila et al. (2012) found autonomy and supervisory support to be positively related to nine different facets of job satisfaction; while coworker support showed to be positively related to seven of the nine facets. Furthermore, Thorsteinsson, Brown, and Richards (2014) found perceived organizational support and supervisory support to be related to job satisfaction in a sample of office workers.

The results regarding hypotheses 2a showed no support. The time management behaviors (setting goals and priorities, or preference for organization, mechanics for time management) were not related to perceived stress and did not explain any further variance in perceived stress beyond the variance that was explained by demands, control, and support. This implies that planning and time management behaviors do not add in feelings of control from what autonomy already added.

It might be possible however, that time management behaviors could have a postponed effect on perceived stress, at a later stage. If tasks are fulfilled and accomplished after structuring and managing time, then individuals might feel less stressed, but if tasks are not completed on time after serious planning then individuals might feel more stressed. This suggests that a time delay exists between time management and perceived stress, which might be a reason for why significant relationships were not found in the current study. For

example, Häfner et al. (2015) found in their longitudinal study that after receiving time management training participants felt less stressed and more in control after four weeks of training, but no such effect was found after only two weeks of training.

Finally, the results partially supported hypothesis 2b, showing that two types of time management behaviors (Setting goals and priorities as well as preference for organization) correlated with job satisfaction and explained variance in job satisfaction beyond what demands, control, and support did. Although, mechanics for time management did correlate with job satisfaction it did not explain variance beyond demands, control, and support. Setting goals and priorities and preference for organization were both positively related to and explained variance in job satisfaction ($\beta = .19$, and $\beta = .16$). Other research (Adam & Jex, 1999; Chang & Nguyen, 2011; Macan, 1994) has also shown positive relations between setting goals and priorities and preference for organization to job satisfaction. When being disorganized the perception or feelings of having more to do than what one actually has can arise because one does not have control over how many tasks that are to be performed. Therefore, setting goals and prioritizing together with an organized workspace makes individuals feel more in control and more satisfied.

Mechanics for time management did correlate with job satisfaction but did not explain variance beyond the variables demands, control, and support in the current study. Other researchers, in contrast, have found significant negative relations for mechanics for time management in relation to job satisfaction (Adam & Jex, 1999; Chang & Nguyen, 2011). It has been proposed that unfinished tasks or a missed schedule might lead to the feelings of being unsatisfied and out of control (Chang & Nguyen, 2011). Additionally, if individuals with personalities of being highly spontaneous are forced to plan and make lists they might feel less satisfied with their work situation. This might be due to that they feel uncomfortable and less like them. On the other hand, individuals that do like to plan suggest that structuring might make individuals feel more productive and efficient, regardless of the outcome (finished or unfinished tasks), thereby enhancing feelings of job satisfaction. These two aspects might have counter acted each other, which could have been why the present study did not show a significant relationship between mechanics for time management and job satisfaction.

Limitations and Future Research

One limitation of this study is the use of cross-sectional data and because of this no causal relationships between work characteristics and time management behaviors and

perceived stress and job satisfaction can be determined. Future research should consider examining more in longitudinal studies to tackle the question about causality and the possibility that structure and planning might have a delayed effect on stress and job satisfaction.

This study used a self-report online-questionnaire to measure the constructs. The social desirability bias suggests that people might not always do what they actually say they do (Lundberg & Cooper, 2011). Hence, they may not be willing to admit to their real behavior, threatening the reliability of the results. Also, it is important to mention that some individuals may be sensitive to answering questions about stress and potential dissatisfaction at the workplace, and they may feel uncomfortable in reporting negative activities about their coworkers and superiors, also threatening the reliability of the results. There is no way of knowing exactly how this might have affected the study's results. However, one of the reasons for why I chose online surveys in my research design was that it might lessen the threat of social desirability since observing the participants was not possible and thus they can answer confidentially and anonymously. Studies in the future should consider combining self-report measures with other measures and not only relying on self-reported data to assure receiving reliable accurate answers and results, plus measure a more complete view about peoples stress levels. Although, monitoring stress could be done with biological measures like blood pressure and heart rate among others, but the construct of perceived stress is defined through the self and our experiences. Thus, our feelings and impressions can only be measured by self-reports. Reality and perception is not always the same and the physiological functions, the psychological feelings, and the mind are all aspects of importance when it comes to peoples stress levels.

The diversity of the sample should also be considered here though the target group was concentrated on administrative office workers. The results displayed from this study might be prevalent to this type of work only and it is not possible to know how other groups or samples behave, or what type or level of stress they are exposed to. Therefore, this research can only be generalized to office work and not to other work settings that consist of other or additional work tasks and demands. Future research should investigate in more diverse groups, nationalities, divisions, and workplace settings. Previous research has been limited to and focused on the western part of Europe and United States, where the models were born and where the most studies have been conducted. Verhoven et al. (2003) in their article questioned whether the JDCS model was valid outside of the Western Europe and United States. Therefore, it would be interesting to investigate in African, Asian, and Latin American

countries where social support might be different than what it is in Europe and the United States.

The response-rate from the sample was at 39%, meaning that a great number of individuals did not partake in the study. It is impossible for us to know the reasons why they did not participate, but it might be due to several reasons. For example, individuals might be reluctant to unveil the nature of their work life or that they actually might be highly stressed and prioritized other exceedingly important tasks. It might also simply be that they were not interested in the investigated topic or even read the emails. This could have hurt the reliability and content validity of the study though it is possible that the utmost stressed office workers might not have been a part of the sample in the study. Another possible issue jeopardizing the external validity of the study was what day and what hour during the day the participants received the e-mail with the study. If it was a Monday or a Friday at work it could have impacted the response-rate. Usually Mondays, which is right after the weekend, people have more work to do than on Fridays. Also, participating in the study right before lunchtime or right before packing up and going home for the day could have made people read less carefully when responding to the survey questionnaire.

Other possible issues with this study concerns one of the scales used. There was no previously existing scale in Swedish measuring time management behaviors so a translation of Macan's Time Management Behavioral Scale was done. However, as mentioned in the method section that even though the Swedish scale had not been tested before, the qualities of the Swedish scale showed good reliability (alpha) values. Moreover, the factor analysis revealed similar results to that of the original scale (Macan, 1994), showing that the Swedish scale was upholding the psychological dimensions intended by Macan. Additionally, self-ratings on the TMB scale is reported by Macan (1994) to have converged well with coworker ratings, postulating construct validity for the measure. Yet, more testing of the Swedish version of the scale is still warranted. The declared aspects above might have limited the current investigation and should be reflected when interpreting the results of this study.

Other suggestions for possible future investigations are to examine the JDCS model together with personality traits such as self-doubt. Referring to Salo and Allwood, (2014) self-doubt is to what extent or level individuals mistrust their own capacity to make correct judgments and decisions. Individuals who are high in self-doubt are reluctant to making decisions themselves and prefer others to make decisions for them. In turn, those individuals may not be very efficient and thereby might accomplish less than others, making them feel less happy and satisfied with their work.

A final suggestion for future research is to look at the JDCS model together with positive psychology and self-confidence. Positive psychology would be interesting to observe because it deals with how individuals mentally perceive themselves, and in particular, focuses on the positives rather than the dysfunctional (Luthans, 2002). Positive psychology and confidence might lead to buffer the negative consequences such as anxiety and worry. Thinking in a positive manner might provide the strength to proceed in order to achieve goals.

Conclusion

Unpredictable changes, time pressure, increasing demands, and accelerating expectations are major concerns for many employees today (Allvin et al., 2011). The question that needs to be addressed is how we encounter these problems and what can be done to decrease perceived stress to prevent emotional exhaustion and burnout. The present work tried to present some insight to these questions and it clearly adds to and builds upon what has been learned from previous studies. The study supports previous studies relating high demands, low control, and low social support to perceived stress. However, the results showed that neither of the time management behaviors were related to stress. The results revealed that control and social support were related to job satisfaction. Moreover, two time management behaviors setting goals and prioritizing and preference for organization did explain variance in job satisfaction, beyond demands, control, and support.

References

- Adam, G. A., & Jex, S. M. (1999). Relationships between time management, control, work-family conflict, and strain. *Journal of Occupational Health Psychology, 4*(1), 72-77.
- Arbetsmiljöverket, (2014). Rapport om arbetsorsakade besvär (Report on work-related disorders) (Report, 2014:4). Retrieved from arbetsmiljöverkets homepage: <http://www.av.se/statistik/officiellt/>
- Albertsen, K., Rafnsdóttir, G. L., Grimsmo, A., Tomasson, K., & Kauppinen, K. (2008). Workhours and worklife balance. *Scandinavian Journal of Work, Environment & Health, 34*(5), 14.
- Allvin, M., Aronsson, G., Hagström, T., Johanson, G., & Lundberg, U. (2011). *Work without boundaries: psychological perspectives on the new working Life*. Oxford: Wiley-Blackwell.

- Aronsson, G. (1999). Influence of worklife on public health. *Scandinavian Journal of Work, Environment & Health*, 25(6), 597-604.
- Berthelsen, H., Westerlund, H., & Kristensen, T. S. (2014). COPSQ II-en uppdatering och språklig validering av den svenska versionen av en enkät för kartläggning av den psykosociala arbetsmiljön på arbetsplatser (COPSQ II- an updated och linguistic validation of the Swedish version of a survey for an exploration of the psychosocial workenvironment in workplaces). Stressforskningsrapport 326. Retrieved from Stockholms Universitet, Stressforskningsinstitutet website: www.stressforskning.su.se
- Chang, & Nguyen (2011). The mediating effects of time structure on the relationships between time management behaviour, job satisfaction, and psychological well-being. *Australian Journal of Psychology*, 63(4), 187-197.
- Claessens, B. J., Van Eerde, W., Rutte, C. G., & Roe, R. A. (2004). Planning behavior and perceived control of time at work. *Journal of Organizational Psychology*, 25(8), 937-950.
- Claessens, B.J., Van Erde, W., Rutte, C.G., & Roe, R. A. (2007). A review of the time management literature. *Personnel Review*, 36(2), 255-276.
- De Jonge, J., & Kompier, M. A. (1997). A critical examination of the demand-control-support model from a work psychological perspective. *International Journal of Stress Management*, 4(4), 235-258.
- Endler, N. S., Macrodimitris, S. D., & Kocovski, N. L. (2000). Controlability in cognitive and interpersonal tasks: is control good for you? *Personality and Individual Differences*, 29(5), 951-962.
- Fila, M. J., Paik, L. S., Griffith, R. W., & Allan, D. (2014). Disaggregating job satisfaction: effects of perceived demands, control, and support. *Journal of Business and Psychology*, 29(4), 639-649.
- Hulin, C. L. (1987). A psychometric theory of evaluations of item and scale translations fidelity across languages. *Journal of Cross-Cultural Psychology*, 18(2), 115-142.
- Häfner, A., & Stock, A. (2010). Time management training and perceived control of time at work. *The Journal of Psychology*, 144(5), 429-447.
- Häfner, A., Stock, A., Pinneker, L., & Ströhle, S. (2014). Stress prevention through a time management training intervention: an experimental study. *Educational Psychology*, 34(3), 403-416.

- Häfner, A., Stock, A., & Oberst, V. (2015). Decreasing students' stress through time management training: an intervention study. *European Journal of Psychology Education, 30*(1), 81-94.
- Häusser, J. A., Mojzisch, A., Nielsen, M., & Schultz-Hardt, S. (2010). Ten years on: a review of recent research on the job demand-control (-support) model and psychological well-being. *Work and Stress, 24*(1), 1-35.
- Jex, S. M., & Elacqua, T. C. (1999). Time management as a moderator of relations between stressors and employee strain. *Work and Stress, 13*(2), 182-191.
- Johnson, J. V., Hall, E. M., & Theorell, T. (1989). Combined effects of job strain and social isolation on cardiovascular disease morbidity and mortality in a random sample of the Swedish male working population. *Scandinavian Journal of Work Environment and Health, 15*(4), 271-279.
- Karasek, R. T., & Theorell, T. T. (1990). *Healthy work—stress, productivity and the reconstruction of working life*. US: Basic books.
- Luchman, J. N., & Gonzáoes-Morales, M. G. (2013). A meta-analytic review of work characteristics interrelationships. *Journal of Occupational Psychology, 18*(1), 37-52.
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior, 23*(6), 695-706.
- Lundberg, U., & Cooper, C. (2011). *The science of occupational health: stress, psychobiology and the new world of work*. Oxford: Wiley-Blackwell.
- Macan, T. (1994). Time Management: Test of a process model. *Journal of Applied Psychology, 79*(3), 381-391.
- Macan, T. (1996). Time-management training: effects on time behaviours, attitudes and job performance. *Journal of Psychology, 130*(3), pp.229-236.
- Magnusson Hanson, L. L., Theorell, T., Oxenstierna, G., Hyde, M., & Westerlund, H. (2008). Demand, control and social climate as predictors of emotional exhaustion symptoms in working Swedish men. *Scandinavian Journal of Public Health, 36*(7), 737-743.
- Mark, G., & Smith, A. P. (2012). Effects of occupational health, job characteristics, copying, and attributional style on the mental health and job satisfaction of university employees. *Anxiety, Stress, and Copying, 5*(1), 63-78.
- McClenahan, C. A., Giles, M. L., & Mallett, J. (2007). The importance of context specificity in work stress research: a test of the demand-control-support model in academics. *Work & Stress, 21*(1), 85-95.

- Nonis, S. A., Hudson, G. I., Logan, L. B., & Ford, C. W. (1998). Influence of perceived control over time on college students stress and stress-related outcomes. *Research in Higher Education*, 39(5), 587-607.
- Peeters, M. A., & Rutte, C. G. (2005). Time management behavior as a moderator for the job-demand-control interaction. *Journal of Occupational Health Psychology*, 10(1), 64-75.
- Pejtersen, J. H., Kristensen, T. S., Borg, V., & Bjorner, J. B. (2010). The second version of the copenhagen psychosocial questionnaire. *Scandinavian Journal of Public Health*, 38(3), 8-24.
- Raemdonck, I., Gijbels, D., & Groen, W. (2014). The influence of job characteristics and self-directed learning orientation on workplace learning. *International Journal of Training and Development*, 18(3), 188-203.
- Randall, R., & Nielsen, K. (2010). Interventions to promote well-being at work. In S, Leka., & J, Houdmont. (Eds.), *Occupational Health Psychology* (pp. 88-123). Oxford :Wiley-Blackwell
- Salo, I., & Allwood, C, M. (2014). Decision-making context and stress: administrative office and investigators in three Swedish public authorities. *Journal of Workplace Behavioral Health*, 29(2), 175-193.
- Sanne, B., Mykletun, A., Dahl, A. A., Moen, B. E., & Tell, G. S. (2005). Testing the job demand-control-support model with anxiety and depression as outcomes: the hordaland health study. *Occupational Medicine*, 55(6), 463-473.
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*, 6th ed. Boston: Allyn and Bacon.
- Thorsteinsson, E. B., Brown, R. F., & Richards, C. (2014). The relationship between work-stress, psychological stress and staff health and work outcomes in office workers. *Psychology*, 5(10), 1301-1311.
- Thompson, C. A., & Prottas, D. J. (2005). Relationships among organizational family support, job autonomy, perceived control, and employee well-being. *Journal of Occupational Health Psychology*, 10(4), 100-118.
- Van der Doef, M., & Maes, S. (1999). The job demand-control (-support) model and psychological well-being: a review of 20 years of empirical research. *Work & stress*, 13(2), 87-114.
- Verhoeven, C., Maes, C., Kraaij, V., & Joekes, K. (2003). The job demand-control-social support model and wellness/health outcomes: a european study. *Psychology and Health*, 18(4), 421-440.

Warr, P. B. (1990). Decision latitude, job demands, and employee well-being. *Work and Stress*, 4(4), 285-294.

Wood, S., Stride, C., Threapleton, K., Wearn, E., Nolan, F., Osborn, D., Paul, M., & Johnson S. (2011). Demands, control, supportive relationships and well-being amongst British mental health workers. *Social Psychiatry and Psychiatric Epidemiology*, 46(10), 1055-1068.

Appendix 1

Swedish version of the TMBQ applied in the study

TIME MANAGEMENT BETEENDE SKALA (TMB)

I VILKEN UTSTRÄCKNING AV DE FÖLJANDE PÅSTÅENDENA PÅ DE KOMMANDE SIDORNA BESKRIVER BÄST DINA AKTIVITETER OCH ERFARENHETER INOM DITT ARBETE?

Ange hur korrekt varje påstående beskriver dig genom att välja EN av de följande alternativen på skalan nedan och skriv den motsvarande siffran i den tomma raden bredvid varje påstående. DETTA ÄR INGET TEST. DET FINNS INGA RÄTT OCH FEL SVAR. Var snäll och svara på alla frågor.

(1)	(2)	(3)	(4)	(5)
Aldrig/nästan aldrig	Sällan	Ibland	Ofta	Alltid

Sätta upp Mål och Prioriteringar

_____ När jag bestämmer mig för vad jag ska försöka uppnå på kort sikt så har jag mina långsiktiga mål i åtanke.

_____ Jag ser över mina mål för att fastställa om de behöver ändras.

- _____ Jag bryter ner komplexa och svåra projekt till mindre hanterbara uppgifter.
- _____ Jag sätter kortsiktiga mål för vad jag vill uppnå inom några dagar eller veckor.
- _____ Jag sätter deadlines för mig själv när jag bestämmer mig för att fullborda en uppgift.
- _____ Jag letar efter sätt att öka effektiviteten på hur jag utför mina arbetsuppgifter.
- _____ Jag avslutar högt prioriterade uppgifter innan jag fortsätter med mindre viktiga uppgifter.
- _____ Jag ser över mina dagliga aktiviteter för att se var jag slösar bort tid.
- _____ Under en arbetsdag utvärderar jag hur väl jag följer det schema jag har satt upp för mig själv.
- _____ Jag sätter upp prioriteringar för att fastställa i vilken ordning jag ska utföra uppgifter varje dag.

Strategier för Time Management

- _____ Jag bär med mig ett anteckningsblock för att kladda ner anteckningar och idéer.
- _____ Jag planerar in aktiviteter åtminstone en vecka i förväg.
- _____ När jag märker att jag frekvent kontaktar någon så dokumenterar jag personens namn, address, och telefonnummer i en speciell fil.
- _____ Jag reserverar tid i mitt dagliga schema för vanligtvis schemalagda händelser.
- _____ Jag skriver anteckningar för att påminna mig själv om vad jag behöver göra.
- _____ Jag gör en lista på saker att göra varje dag och bockar av varje uppgift när den är utförd.
- _____ Jag bär med mig en mötes-bok.
- _____ Jag för ett dagligt protokoll över mina aktiviteter.
- _____ Jag använder mig av en inkorg och utkorg för att organisera pappersarbete.
- _____ Jag hittar ställen att jobba på som tillåter mig att undvika avbrott och störningsmoment.
- _____ Om jag vet att jag måste spendera tid och vänta tar jag med mig något jag kan jobba på.

Preferens för Organisation

- _____ Vid slutet av arbetsdagen lämnar jag en städad, välorganiserad arbetsplats.
- _____ När jag gör en saker-att-göra lista i början av dagen så är den bortglömd eller lagd åt sidan vid slutet av dagen. (R)
- _____ Jag kan hitta sakerna jag behöver till mitt arbete mycket lättare när min arbetsplats är stökig och oorganiserad än när den är snygg och organiserad. (R)
- _____ Tiden som jag spenderar på att schemalägga och organisera min arbetsdag är bortkastad tid. (R)

_____ Mina arbetsdagar är för oförutseende för mig att planera och handhålla min tid i större utsträckning. (R)

_____ Jag får några av mina mest kreativa idéer när jag är oorganiserad. (R)

_____ När jag är något oorganiserad är jag bättre på att kunna justera till oväntade händelser. (R)

_____ Jag tycker att jag kan göra ett bättre jobb om jag skjuter upp uppgifter som jag inte känner för att göra än om jag försöker att få dem gjorda i ordningen efter deras betydelse. (R)