Waiting to Take the First Step?
Procrastination Behaviors in the Role Transition from Worker to Manager

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ABSTRACT

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The purpose of this research was to explore predictors of employees' procrastination behaviors when approaching the transition from worker to manager. I drew on the Extended Model of Action Phases and Temporal Motivation Theory to argue that both personal and situational factors are related to career procrastination behaviors. Specifically, I hypothesized that trait passive procrastination, trait active procrastination, and work constraints are positively related to transition procrastination behaviors, whereas trait proactivity and work resources are negatively related to transition procrastination behaviors. I further hypothesized that career self-efficacy and subjective temporal proximity are two mechanisms through which these effects occur. These hypotheses were tested in a correlational study with two on-line surveys separated by one month. Data were gathered from a sample of employees working in various organizations and industries in Canada (N = 282). Consistent with the hypotheses, I found that trait passive procrastination, trait active procrastination, and constraints were positively related to transition procrastination behaviors, whereas resources were negatively related to transition procrastination behaviors. In contrast to my prediction, trait proactivity was not related to transition procrastination behaviors. As expected, career self-efficacy mediated relations between traits (passive procrastination, proactivity), environmental factors (resources and constraints) and transition procrastination behaviors. Subjective temporal proximity mediated relations between traits (passive procrastination, proactivity) and transition procrastination behaviors, but only in cross-sectional and not in time-lagged tests. Based on these findings, companies can reduce employees' career procrastination behaviors by providing more career development resources and mitigating potential organizational constraints, which can build employees' self-efficacy and encourage developmental behaviors.

Keywords: career transition, passive procrastination, active procrastination, proactivity, self-efficacy, subjective temporal proximity, resources, constraints, time management

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INTRODUCTION

Procrastination is a common phenomenon in everyday life and it has a long history in human society. It has been defined as a behavioral disposition to postpone, delay and therefore avoid the initiation or completion of goal pursuits (Solomon & Rothblum, 1984; Tenne & Milgram, 2000). Procrastination behaviors are associated with negative outcomes, such as lower efficiency and impaired mental health (Schouwenburg & Lay, 1995) and occur in at least 95% of the population (Steel, Brothen, & Wambach, 2001). For this reason, I believe it is important and necessary to study procrastination behaviors.

It is important to recognize that procrastination behaviors can happen at different phases of a decision (or action) and are present across different life domains. Scholars have identified procrastination in various areas, such as *academic procrastination* (Milgram, May-Tal, & Levison, 1998; Solomon & Rothblum, 1984), *life routine procrastination* (Lay, 1986; Wrosch & Heckhausen, 1996) and *career procrastination or indecisiveness* (Bańka & Hauziński, 2015). Past research has focused primarily on academic and life-course procrastination behaviors and some scholars have called for more research on procrastination in other life domains, such as work procrastination (Moon & Illingworth, 2005). The primary goal of this research is to conduct such an investigation. To be more specific, the central focus of this research is on the career development processes from subordinates (workers) to supervisors (managers). The reason I chose to study this process is because many people may have the goal to reach a managerial level in their careers, but this desire to become a leader someday in the future may not provide enough motivation for them to make the critical first move. Indeed, many individuals may stay in the same position for long periods of time not knowing what to do next or how to reach the next level, and they may therefore delay their career pursuit actions.

The idea of being in a static position in one's career path is related to the concept of career plateau. Gerpott and Domsch (1987) defined career plateau as the cessation point where a person's career is not going lateral or upward. Similarly, workers who lack the intention to move towards a higher level in their career could be seen as hitting a career plateau. The literature concerning career plateau suggests that numerous factors contribute to the occurrence and prolonging of career plateau, including individual factors such as personality (Tremblay & Roger, 1993), as well as causes from the organization (Near, 1980) and the job (Gerpott & Domsch, 1987).

In this study, I am interested in understanding factors that may hinder workers from taking actions to further their career development. I would like to know if people procrastinate during the transition from worker to manager and how we can understand their procrastination behaviors. I want to know the circumstances under which an employee will be more likely to postpone their (career) goal pursuit actions and how this process works. I am also interested in whether certain people are more likely to procrastinate than others in the context of career development. In order to find out the reasons and mechanisms behind individuals' procrastination behaviors in their transition processes, particularly under the situation of workers transforming into managers, I developed a theoretical model of career procrastination from both personal and situational perspectives. In this research, I plan to conduct an empirical study to test this model and examine the process by which worker-to-manager transition procrastination behaviors occur.

Therefore, the purpose of this research is threefold. First, I aim to develop a theoretical model that identifies personal and situational predictors of worker-to-manager transition procrastination behaviors. Second, I aim to test empirically hypothesized relations between the identified predictors and delaying behaviors. Third, I plan to investigate two mechanisms that may explain why personal and situational predictors act on employees' transition procrastination behaviors during the worker-to-manger transition.

This study will contribute to the literature in the following ways. First, past research has focused primarily on academic and life-course procrastination behaviors and researchers have

called for more research in other life domains (Moon & Illingworth, 2005). This study will expand on the procrastination literature by examining procrastination behaviors in a work context. Second, this study will extend the literature on procrastination by examining the influence of personal factors like personality, in conjunction with situational factors, including organizational and/or industrial resources and constraints, and by combining both passive and active sides of procrastination in the same study. Third, this study adds to research on the Extended Model of Action Phases, which introduces five action and control phases and explains how resources and constraints change as deadlines approach (Wrosch & Heckhausen, 1996), by integrating it with Temporal Motivation Theory and applying both theories to work transitions (Steel & König, 2006).

LITERATURE REVIEW

The Nature of Procrastination

Procrastination can be viewed as a form of self-regulatory failure that makes people keep delaying things unnecessarily (Lay, 1986; Steel et al., 2001). It seldom appears to be a positive phenomenon in terms of individual performance. Several meta-analyses show that procrastinators perform more poorly in academic settings (Kim & Seo, 2015; Steel, 2007; Van Eerde, 2003). There is also some evidence that procrastination is harmful to well-being and mental health in the long-term (Schouwenburg & Lay, 1995).

In the literature, there has been a broad discussion about whether to view procrastination as a systematic and internal trait or as spontaneous behaviors that can be influenced by situational factors. Some have described the tendency to procrastinate as a personality trait when procrastination behaviors become habitual and settled across time (Aitken, 1982; Lay, 1986; Schouwenburg, 2004). Watson (2001) suggested that procrastination should be viewed as a complex disposition instead of a single trait dimension. He investigated some of the antecedents of procrastination proposed by previous studies, such as fear of failure, task aversiveness,

dependency and risk taking, in terms of the Big Five factors of personality (Neuroticism, Extraversion, Agreeableness, Openness and Conscientiousness). It was found that total procrastination was negatively related to conscientiousness and positively related to neuroticism. Consistent with this view, there are numerous scales that have been developed to measure the trait of procrastination in relation with other personality traits. A meta-analysis that included 121 previous studies stated that most studies treated procrastination as a trait that reflects individual differences, so that it was stable across time and contexts within individuals (Van Eerde, 2003).

Others suggest that procrastination behaviors are also influenced by situational factors. For example, Steel and König (2006) mentioned environmental cues that had an effect on people's avoidance behavior in their study. Further, several empirical studies (e.g., Blunt & Pychyl, 2005; Milgram et al., 1998; Solomon & Rothblum, 1984) suggest that procrastination is a dynamic behavior that changes over time with the interaction of tasks and contexts. Previous longitudinal studies (Dewitte & Schouwenburg, 2002; Pychyl, Lee, Thibodeau, & Blunt, 2000) of academic procrastination all point out that individuals tend to increase study effort and decrease procrastination behaviors as deadlines approach. A study on decision avoidance, which is a type of procrastination behavior, found that cost-benefit calculations, anticipated regret and selection difficulty explained decision avoidance behaviors (Anderson, 2003).

Although past studies have attempted to examine and measure the relations between procrastination and other variables, most of them view procrastination as a unidimensional concept, which is the passive side. Much of this work has focused on various negative outcomes of procrastination as noted earlier. It is interesting to note, however, that recent work has also pointed to the potential positive aspects of procrastination (Choi & Moran, 2009). Choi and Moran (2009) identified two different types of procrastinators: passive procrastinators (who delay their decisions or fail to complete tasks on time) and active procrastinators (who leverage time pressure and intentionally delay actions to be more effective). Unlike passive procrastinators in the traditional aspect, active procrastinators are more like non-procrastinators in the sense of their control of time,

self-efficacy beliefs and outcomes (Chun Chu & Choi, 2005). Active procrastinators demonstrated more desirable attitudes, such as better time perception, motivation levels and coping styles, than passive procrastinators, even though they reported the same level of procrastination as passive procrastinators did. Chun Chu & Choi (2005) proposed four characteristics of active procrastinators: preference for time pressures, intentionally postponing decision or action, ability to meet deadlines and satisfactory outcomes. Corkin, Shirley, and Lindt (2011) also verified that active delay was more like a self-regulated skill, a different form of procrastination, and that it was associated with positive outcomes. A meta-analysis of 33 relevant studies (Kim & Seo, 2015) found that active procrastination showed a different pattern of relations with academic performance than passive procrastination (i.e., positive rather than negative), which suggests that it is indeed a distinctive form of procrastination.

It is important to note, however, that the passive and active sides of procrastination have not been studied together in the past literature. Although it can be inferred from the meta-analysis of Kim and Seo (2015) that active procrastination should be distinguished as separate from passive procrastination, it is still possible that when we investigate them at the same time, they may be related to each other. The extent to which they are related may also depend on whether one is looking at procrastination traits or procrastination behaviors. This is because the essential difference between trait passive and trait active procrastination lies in the reasons for procrastination, including sense of time, intentions, self-efficacy beliefs, and motivation levels, but the behavior itself of delaying things is the same, regardless of the reasons. It is possible that the behavioral aspect of procrastination could separate into active and passive sides, or they may form one larger factor of procrastination behaviors; there is no evidence in the literature yet to support one way or the other. I reasoned out my hypotheses based on the assumption of a single factor of procrastination behaviors, but I included the two sides of procrastination when designing the scale items and looked empirically at whether or not the items broke down into a single dimension or two dimensions.

Taken together, procrastination is generally viewed as a self-regulated failure that prevents people from starting or completing things within a reasonable time period. It has two dimensions - passive or active, based on whether the delay is intentional or unintentional. Most importantly, procrastination is not solely trait or behavior, it is a complex phenomenon that is influenced by a combination of traits and situational factors.

The Extended Model of Action Phases

Procrastination research is deeply rooted in the motivation literature. Research has shown that procrastinators tend to be inaccurate about time perceptions, typically feeling that goals are too far away, and therefore they underestimate the value of the goal as well as the negative effects associated with delaying actions, all of which causes loss of motivation (Steel & König, 2006). In a study of career indecisiveness, Bańka and Hauziński (2015) found that when people were dealing with life changing goals, such as career goals, procrastinators showed a tendency to delay entering a career path out of the fear of failure; they handicap themselves from approaching the goal and always wait for a point with more favorable conditions. Doing nothing in this context is seen as a self-regulatory mechanism that people can use to reduce the risk of failure. Related to this, self-efficacy and occupational commitment have been found to explain 10% of career indecision behaviors (Bańka & Hauziński, 2015). Both the perception that "it's too early to get started" and the fear of failure (out of low self-efficacy) can reduce motivation, as well as an individual's ability to resist temptations from tasks that are not goal-related (e.g., other alternatives, social engagements); these perceptions can reduce persistence on goals and encourage more procrastination behaviors (Moon & Illingworth, 2005).

As mentioned earlier, procrastination behaviors can happen in various phases of goal pursuits, from making decisions to taking actions. In this research, I adopt a life-course developmental theory, entitled the Extended Model of Action Phases, by Wrosch and Heckhausen (1996), to explain procrastination in the transition from worker to manager. This model was built on

Heckhausen's Rubicon Model, in which he introduced four distinct action phases: the pre-decisional phase (comparing and selecting the goal among alternatives), the pre-actional phase (planning goal-pursuit implementation actions), the actional phase (initiating and keeping goal-pursuit actions) and the post-actional phase (evaluating action results). A critical point in this model occurs when the individual moves from the pre-decisional to the pre-actional phase, which is labelled as the "Rubicon Passage." Labelled by Heckhausen (1989), the "Rubicon" metaphor comes from a story of Julius Caesars's decision to cross the Rubicon river, which was irreversible and caused a civil war. During this passage, the individual selects a particular goal/course of action and moves from deliberating about various choices to implementing the chosen course. According to the model, people evaluate alternatives and try to seek a justification ("why") for the chosen goal during the pre-decisional phase. They come to a decision after the "Rubicon Passage" and then try to figure out a map of "when", "where" and "how" to get closer to the goal during the pre-actional phase. Delay behaviors are most likely to occur during the initiation or implementation of goal pursuit actions.

The Extended Model of Action Phases is a more thorough and complete model, as it combines the original Rubicon Model with the Life-span Theory of Control (Heckhausen & Schulz, 1995). The Extended Model by Wrosch and Heckhausen (1996) also identified "Rubicon" as a critical mark of the intention formation between pre-decisional and pre-actional phases and they further divided the actional phase into two subphases: non-urgent and urgent phases. The non-urgent actional phase is associated with plenty of time and more resources available (e.g., training opportunities in the context of career development), whereas the urgent actional phase is associated with declining resources and little time left for goal attainment. Procrastination behaviors are more likely to occur in the non-urgent actional phase when there is much time left before the goal needs to be achieved. The Extended Model further posits that during the pre-actional (action planning) and non-urgent actional (action initiation) phases, individuals are more prone to invest personal

resources and to search for outside help (e.g., organizational and/or industrial supports) to help themselves achieve their goals.

A second critical point in the Extended Model occurs when the "Developmental Deadline" passes; this happens when the individual passes the normative time when a goal would normally be reached, after which the individual moves to a post-deadline phase. For example, most individuals will enter the job market within a certain period of time after leaving school and most individuals will have children before they reach a certain age. The Developmental Deadline is noteworthy because the Extended Model posits that there should be more opportunities and social/institutional support to help an individual achieve a goal before the deadline passes, but afterwards there should be more constraints. Therefore, the approaching of a deadline may motivate individuals to increase their efforts of goal pursuit or they will be in a less favorable position once the developmental deadline has passed (Wrosch & Heckhausen, 1996).

Wrosch and Heckhausen (1996) suggested that socio-structural and institutional resources are vital for life-course transitions such as career development, because personal resources are usually limited and at high cost (e.g., higher cost for an individual to take a training course alone than for a group of employees to take the same course together due to the lack of economy of scales). Based on the Extended Model, having an age-appropriate timing and sequence of promotions at work should generate better outcomes for employees in the career transition period. Once developmental deadlines have passed, external resources and opportunities (e.g., staff education funding, critical project opportunities) can turn into external constraints (e.g., lack of education funding and project opportunities) that hinder developmental progress and require more internal resources in order to compensate for the loss of social support (Wrosch & Freund, 2001). This highlights the jeopardizing effect that transition procrastination behaviors may have if individuals do not pursue advancement early in their career paths, when the conditions are most favorable.

In addition to the concept of "developmental deadline", Wrosch and Heckhausen (1996) also borrowed another critical idea from the Life-span Theory, which is the idea of the dual process

conception of primary and secondary control. Rothbaum, Weisz and Snyder (1982) introduced the notion of primary control, which refers to an individual gaining control by actively bringing the environment to their wishes, for example attending training sessions in order to gain a promotion opportunity. Primary control supports goal attainment directly by the person making efforts to change the surrounding situation. On the other hand, secondary control refers to an individual gaining control by adaptively bringing the self in line with the environmental constraints; for example, an individual may change his/her perception of a managerial position as more valuable to keep high motivation level towards reaching it. The function of secondary control is to optimize or justify selective goal-pursuit investment and to compensate for negative emotional consequences of failure. The difference between primary and secondary control is that one is problem-focused or "make do" coping and the other one is emotion-focused or "make believe" coping. Based on Rothbaum's two types of control, Heckhausen and Schulz (1995) further divided them into four types of control strategies according to the two fundamental requirements of human behavior (selectivity and failure compensation): selective primary control (investment of internal resources like time, effort, development of relevant skills), compensatory primary control (active search for external help or detour), selective secondary control (enhancement of goal value and perception of control in order to strengthen individual commitment) and compensatory secondary control (goal disengagement).

The Transition Process

Lewin (1951) defined transitions in his Field Theory as movement across positional or contextual boundaries (e.g., hierarchical level, department, organization). He introduced the idea of transition as a three-stage process from present state to desired state. The three stages – unfreezing, movement, and refreezing – illustrate the process of breaking a fixed state and settling into a new one. "Unfreezing" corresponds to role exit and "Refreezing" corresponds to role entry;

the middle stage of movement, is the transition state itself where people start to make movements, which is the central focus of the present paper.

Before the transition state (or during the unfreezing stage), people may receive signals, such as an unwanted change in the current job position or peer pressure about social status, as motivation for them to create desire of jumping out of current equilibrium toward a new equilibrium. After accumulating enough reasons to make the decision of leaving one's present state, what further motivates people to make the critical first move in the transition process?

The focal situation that will be studied in the present research is the career transition process from worker-level to management-level. This is usually a major turning point in one's career path. In this particular situation, procrastination behaviors during the beginning stages of planning or initiating goal-pursuit actions could be extremely destructive to one's career progress, because they may lead to increased feelings of time pressure and fewer opportunities for advancement. This can leave the person with unhealthy emotions, such as self-doubt and low self-confidence, which can lead to more procrastination behaviors. This vicious circle may be associated with problems, such as career plateau, as described earlier.

Linking back to the Extended Model of Action Phases, after the pre-decisional phase during which people may set their career goals of going for managerial positions, they enter the pre-actional (planning) and the following non-urgent actional (initiating) phases. This is the time when procrastination behaviors are most likely to happen because there is still a distance to the developmental deadline. As indicated by the model, people in these two phases may invest their personal or internal resources (e.g., time, money and skills), or try to leverage outside resources (e.g., resources provided by their organization), to get closer to the goal.

DETERMINANTS OF TRANSITION PROCRASTINATION BEHAVIORS

In the particular context of the worker-to-manager transition process, I propose both personal and situational determinants in the explanation of transition procrastination behaviors. With respect to personality, I identified two personality traits (i.e., trait procrastination and proactivity) that show opposing influences on procrastination behaviors. In trait procrastination, I further identified two different types of procrastination personality – passive procrastination and active procrastination. The situational factors I identified for inclusion are developmental resources and constraints within the institution or the profession of the subject. I elaborate on each of these factors below.

Personality

Personality is an innate and deeply rooted explanation of human behaviors, and much research shows that personality traits are related to behaviors and performance at work (Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991). In the study of procrastination behaviors in the working context, trait procrastination should be included. I also include trait proactivity, which refers to the tendency to take initiative to enact effects on one's situation instead of passively receiving things and doing nothing in response. These two traits made sense to me because, generally speaking, some people prefer to drag things down till the last minute (procrastinators), whereas other people cannot wait for even one second and want to get things started immediately (proactivators).

Procrastination

As noted earlier, procrastination is considered a personality trait mostly. Research suggests that there is a biological or genetic component to procrastination that results in temporal and situational stability for this kind of behavior (Steel, 2007). Other relevant individual characteristics, like poor self-regulation, lack of persistence and poor time management skills are also perceived to be associated with procrastination behaviors (Schouwenburg, 2004). In Steel's (2007) meta-

analysis, procrastinators were found to react more negatively to stress and to be more sensitive about the enjoyment of tasks. The reason is that procrastinators are easily bored and bad at dealing with stress, making the enjoyment of tasks critical in the decision making process for procrastinators. As mentioned earlier, procrastination is related to other personality traits, such as conscientiousness (Steel, 2007), and it is also related to self-discipline and task aversiveness (Costa & McCrae, 1995).

The tendency to delay or postpone (procrastination behavior) in the specific context of career development is likely related to the trait of procrastination that keeps some people wanting to delay things constantly. In this study, I include both passive and active trait procrastination. Active procrastinators approach procrastination behavior as a strategy to generate more effective and positive outcomes, whereas passive procrastinators suffer from self-regulatory failure and subconsciously engage in procrastination behaviors that negatively influence the outcomes. In the setting of worker-to-manager transition, employees who possess high trait active procrastination may intentionally postpone engaging in behaviors that will help them transition from worker to manager because they have positive estimates of their abilities and thus are confident that the goal will still be obtained even if they strategically allocate some time for other things in the meantime. In contrast, passive procrastinators may postpone their actions of pursuing career development because they are distracted, and this tendency is likely to be reinforced by negative self-assessment from past experience, fear of failure and other negative feelings. I propose that:

H1a: Trait passive procrastination is positively related to transition procrastination behavior.

H1b: Trait active procrastination is positively related to transition procrastination behavior.

Proactivity

People with proactive personality are perceived to take initiative in improving current situations or creating new circumstances, which usually involves challenging the status quo instead of accepting current conditions passively (Crant, 2000). This does not, however, make it the

opposite of, or a substitute for, the personality trait of procrastination. The emphasis of procrastination is on the irrational delay of the initiation of action, whereas the emphasis of proactivity is on the active, initiation of performance instead of the use of passive and reactive gestures (Seibert, Crant, & Kraimer, 1999). Bateman and Crant's empirical study (1993) on the relationships between proactivity and the Big Five personality domains (neuroticism, extraversion, openness, agreeableness and conscientiousness) found that proactive personality was positively correlated with conscientiousness and extraversion. They found that highly proactive people show initiative to identify opportunities and act on them, and also receive more peer nominations of transformational leadership. A 2-year longitudinal study on the relationship between proactive personality and career success suggested that proactivity was positively related to innovation and career initiative, leading to higher levels of career progression (both salary growth and promotion) as well as satisfaction (Seibert, Kraimer, & Crant, 2001). Another study also confirmed the positive relationship between proactive personality and the Big Five and their predictive power of motivation to learn and involvement in developmental activities (Major, Turner, & Fletcher, 2006).

It seems reasonable to suggest that proactive personality would be negatively correlated to procrastination behaviors in the career development process. The most significant characteristic of proactive individuals is their initiative in exercising influence on the environment. They do not passively wait for things to happen, they take active moves to change the situation. Once they identify the opportunity to advance in their careers, they will take actions on it right after. Even if they have a negative calculation of results, they are likely to drop the process and seek other goals instead, as opposed to passively doing nothing. The point is that they do not hesitate or avoid making decisions or taking actions; no matter what, they are determined to do it or drop it. Though little research has explored procrastination and proactivity together, Beleaua and Cocoradă (2016), in their research on procrastination, stress and coping among students and employees, found that passive procrastinators were less prone to use proactive coping methods and engaged in more avoidance coping. In contrast, Chun Chu and Choi (2005) found that active procrastinators used

more proactive coping strategies. These studies, however, focused on proactive behaviors as a consequence of trait procrastination, rather than the trait of proactivity as a cause of procrastination behaviors. Although this evidence is not a direct indication, it seems reasonable to suggest that people with trait proactivity are less likely to engage in procrastination behaviors.

H1c: Trait proactivity is negatively related to transition procrastination behavior.

Situational Factors

Having proposed a link between procrastination traits and behaviors, it is important to remember that trait procrastination and procrastination behaviors are not the same thing. Trait procrastination might enact a more general effect, but procrastination behaviors will also be influenced by environmental factors, as noted earlier. The effects of situational factors such as developmental resources or constraints on procrastination have been largely neglected (Blunt & Pychyl, 2005). Going back to the selective and compensatory primary control from the Extended Model of Action Phases that was discussed earlier (Wrosch & Heckhausen, 1996), it was noted that compensatory primary control will be needed when internal resources are insufficient for goal attainment. This means that people may be actively searching for external resources as back up fuel to help achieve their goals. Unlike other personal goals such as "developing good habits", "traveling around the world" or "losing some weight", career goals are closely related to the organization and industry of the focal employee, where there could exist plenty of resources to be leveraged. A study on academic procrastination conducted by Schraw, Wadkins and Olafson (2007) pointed out that context-specific factors could help students promote motivation and beat procrastination by introducing detailed planning routines, social control and support (by peers, professors or institutions), as well as reward and punishment systems.

As Pychyl et al. (2000) suggested, the percentage of a task to be externally structured, resources and autonomy, should not be ignored when we are studying procrastination. I believe that organizational and/or industrial resources and constraints are likely to play an important role in

providing employees with necessary information or support in their career transition process. Therefore, in the transition from worker to manager, I include resources and constraints of development in my model.

Resources for Development

Organizational and/or industrial resources for career development may be considered as external help that can be utilized by individuals to further their career advancement intentions. For example, Tansky and Cohen (2002) found that perceptions of outside support, such as tuition reimbursement, job rotation and career counseling, were positively related to the satisfaction with employee development and organization commitment (Tansky & Cohen, 2002). Also related to this, Bańka and Hauziński (2015) pointed out in their research on career indecisiveness that a lack of environmental resources leading to higher level of self-criticism could be one of the sources of career procrastination behaviors, like career indecisiveness.

Based on the support from past research, I believe that organizational and/or industrial resources can encourage people to take action in their career path by playing both an intrinsic motivational role that increases people's perceptions of self-efficacy or competence, and an extrinsic motivational role that actually foster employees' growth, learning and development. I believe that more resources will reduce people's procrastination behaviors.

H2a: Organizational and/or industrial resources for development are negatively related to transition procrastination behavior.

Constraints

Constraints or barriers put people in unfavorable positions, preventing them from further progress. Swanson and Woitke (1997) defined career barriers as events or conditions that make career progress difficult. Organizations can impose career barriers by limiting access to skill development programs based on certain demographic characteristics, such as gender, ethnicity or

age (Murtagh, Lopes, & Lyons, 2007), bias in offering critical resources and opportunities (Lent, Brown, & Hackett, 2000), or even social capital-based networking structures (Seibert, Kraimer, & Liden, 2001). When individuals feel that there are barriers to their career development in their current organization, the perceived chances of achieving the goal (of becoming a manager) may decrease. This could be even worse if the barriers exist at the industry level. In that case, people may engage in more procrastination behaviors as a self-defense mechanism to reduce the risk of failure or they may also leave the current organization and/or industry. If there is a high cost of leaving one's organization, which could be even higher for leaving a profession than a company, this could be an additional force that may increase employees' procrastination behaviors in the face of high barriers. This is because people may simply stay in the same position and delay focusing on advancement if they think that the chances of success are low and they cannot afford to leave.

According to the Extended Model of Action Phases described earlier, opportunities for development change from plentiful to scarce, whereas constraints change from minor to major, when people cross the developmental deadlines (Wrosch & Heckhausen, 1996). Brown, Lent and Hackett (2002) also addressed barriers, such as social and economic conditions, that can hinder people's choice, change and growth in their career development. Environmental factors, such as constraints, can shape self-efficacy in a negative way by intervening in learning experiences, and thus can have an impact on people's career interest and behavior. Constraints at work are also often associated with age. For example, some people may want to devote themselves to other important life domains before entering a career advancement path, only to find that the opportunities are forgone, being allocated to younger workers with more updated skills and potential to become critical and loyal human resources of the company. This may also be linked to passage of the developmental deadline. I propose that:

H2b: Organizational and/or industrial constraints are positively related to transition procrastination behavior.

MEDIATING EFFECT OF SUBJECTIVE TEMPORAL PROXIMITY AND CAREER SELF-EFFICACY

Returning to the definition of procrastination, it is a behavioral disposition to postpone, delay and avoid the initiation or completion of goal pursuits in a timely manner. I extracted two key aspects of this definition, which are "motivation" and "time," to make predictions about how the proposed predicting variables act on employees' transition procrastination behaviors. Linking back to the Extended Model of Action Phases is the notion of selective secondary control, which includes enhancing the perception of control in order to strengthen individual commitment to goal pursuit. According to the model, secondary control is an essential coping mechanism during pre-actional, non-urgent and urgent pre-deadline actional phases, which include adapting one's perception of goal importance and possibilities of achieving the goal to increase one's motivation. This also points to the importance of individuals' perceptions impacting their behaviors.

To further understand the mechanisms underlying procrastination behaviors, I introduce a well-established motivation theory, entitled Temporal Motivational Theory (TMT; Steel & König, 2006), that includes time as a fundamental term. In this theory, people's motivation can be understood in terms of the effects of expectancy and goal value, where goal value is weakened by delay; this is denoted through the following formula: Utility=Expectancy*Value/Delay. In the formula, utility refers to the overall attractiveness of the goal, which is critical in influencing the level of motivation of people reaching the specific goal. Expectancy refers to individuals' perception of probability that the goal can be reached by efforts; value indicates the perceived amount of rewards from achieving the goal and delay represents the time interval until achieving the goal (Ainslie, 1992).

Temporal motivation theory highlights that motivation is affected by both expectancy and goal value, adding the notion that utility or total attractiveness of the goal may be weakened by delay. In my model, expectancy is represented by self-efficacy, which is a broader but closely related

concept and is typically assessed in the procrastination literature for academic and work domains. The effect of delay on goal value follows the temporal discounting rule, which suggests that the reward will be devalued by time (Ainslie, 1992).

I draw on this theory to propose two mechanisms through which personal and situational factors may influence transition procrastination behaviors: subjective temporal proximity, which refers to an individual's perception of the time distance to achieving the goal, and self-efficacy, which refers to the belief (or confidence) about individuals' abilities to mobilize motivation, cognitive resources and courses of action required to perform a specific task successfully within a given context (Bandura, 1977).

Subjective Temporal Proximity

Dewitte and Schouwenburg (2002) proposed that passive procrastination results from the discounting principle: the further a reward is located on the time line, the less valuable the reward is and the less attractive are the efforts to achieve it. As noted earlier, passive procrastinators tend to perceive the time-lag between their current position and their desired goals to be longer than do other people. Particularly, according to the Extended Model of Action Phases, during the non-urgent phases, where there is still a long time left, passive procrastinators will not feel that their goals are close and appealing enough to move and, hence, they keep being distracted and postponing their goal pursuit actions. As the deadlines approach, the value of the goals suddenly magnifies, pushing people to increase their efforts to meet the goals before the deadlines. In order to compensate for past delays, people will drop (passive) procrastination behaviors at an exponential rate as the deadline approaches (Moon & Illingworth, 2005). Compared to people who are low in active procrastination, active procrastinators tend to have more accurate time perceptions. Proactivators even perceive their time left to be shorter than the actual time length.

Indeed, several studies have found that a hyperbolic or curvilinear trajectory is more accurate in describing patterns of procrastination behaviors (passive) over time (Bashir, Wilson, Lockwood,

Chasteen, & Alisat, 2014; Lay & Schouwenburg, 1993; Zauberman, Kim, Malkoc, & Bettman, 2009). It is important to note that there is a difference between objective temporal proximity or the duration itself (linear) and subjective estimates of time or the perceived duration (non-linear). Individuals' perceptions of how far away an event is do not always map onto the actual amount of time that remains. The discrepancy between objective and subjective time was found to be related to people's lack of sensitivity to time, which is more likely to happen for passive procrastinators. For this reason, Zauberman et al. (2009) argued that it is more appropriate to use subjective temporal proximity in the calculation of goal utility than the objective time horizon.

Bashir and his colleagues examined whether making remote goals feel subjectively closer motivated people to engage more in goal-pursuit actions (Bashir et al., 2014). Their model, which was supported by their data, suggests that higher subjective temporal proximity brings out more goal pursuit behaviors. Further, this relationship can be explained by goal construal level, such that when people perceive goals as temporally close, the goals become more concrete and easier to get started, which consequently reduces procrastination behaviors. These results are consistent with Construal Level Theory, which proposes that low or concrete construal-level focus is associated with high temporal proximity, which increases people's motivation (Trope & Liberman, 2010).

Based on these, I expect a negative relation between subjective temporal proximity and procrastination behaviors. I also expect that trait passive procrastination is negatively related to subjective temporal proximity while trait active procrastination and proactivity are positively related to subjective temporal proximity. Furthermore, I believe that subjective temporal proximity mediates the relation between trait passive procrastination and career procrastination behavior, and the relation between trait proactivity and procrastination behaviors. However, I think subjective temporal proximity is unlikely to explain the positive relation between trait active procrastination and procrastination behaviors since the overall effect of trait active procrastination on procrastination behaviors is positive while the indirect effect through subjective temporal

proximity suggests negative relation. Rather, it seems more likely that the positive relation of trait active procrastination with subjective temporal proximity, combined with the negative effect of subjective temporal proximity on procrastination behaviors may add an effect in the opposing direction to the positive effect that trait active procrastination has on procrastination behaviors. Therefore, instead of acting as a mediator, I believe that subjective temporal proximity acts as an intervening variable in the relation between trait active procrastination to transition procrastination behaviors, reducing the overall positive effect that trait active procrastination has on procrastination behaviors. Therefore, I hypothesize that:

H3a: Trait passive procrastination is negatively related to subjective temporal proximity.

H3b: Trait active procrastination is positively related to subjective temporal proximity.

H3c: Trait proactivity is positively related to subjective temporal proximity.

H4: Subjective temporal proximity is negatively related to transition procrastination behavior.

H5a: Subjective temporal proximity mediates the relation between trait passive procrastination and transition procrastination behavior.

H5b: Subjective temporal proximity has a negative intervening effect in the relation between trait active procrastination and transition procrastination behavior.

H5c: Subjective temporal proximity mediates the relation between trait proactivity and transition procrastination behavior.

Career Self-Efficacy

As discussed earlier, fear of failure is one important source of procrastination behaviors. Heckhausen and Schulz (1995) identified self-handicapping in their three-dimensional model of secondary control as one thing that could lower down the expectancy of the goal and thus, cause dysfunctional motivation mechanisms and procrastination behaviors. Also, as noted earlier, a study focusing on decisional procrastination found that career self-efficacy and occupational commitment together explained 10% of career indecision variance (Bańka & Hauziński, 2015). They pointed out that procrastination was one of the self-regulatory mechanisms triggered to protect individuals from negative consequences of the possible failure, which is usually

accompanied by unpleasant (negative) affect. In the meta-analysis of Van Eerde (2003), eleven studies were found to support the negative relation between self-efficacy and (passive) procrastination. Therefore, people with low self-efficacy are likely to procrastinate more in avoidance of possible failure.

Self-efficacy, as a cognitive mechanism, has a large influence on the initiation of coping behaviors, the amount of effort expended, and the time spent on tasks, even in the face of obstacles and aversion (Bandura, 1977). According to Bandura's (1977) Self-Efficacy Theory, behavioral changes (e.g., action or inaction) are determined by the level of personal efficacy, and performance accomplishments are identified as the most important source of information from which efficacy is derived. Successful past experiences work as positive feedback that brings up personal self-efficacy whereas failures cut back people's perception of their abilities to accomplish similar tasks. Bandura's self-efficacy theory was later applied to career development research. However, Betz and Hackett (2006) addressed the issue of researchers ignoring the context of self-efficacy and the importance of specifying the domain when assessing self-efficacy. They argued that self-efficacy should be measured against a behavioral domain and it would be meaningless if the concept of self-efficacy was not linked to a specific realm of functioning, because self-efficacy is a cognitive appraisal of future behaviors that can vary with occupations instead of a personality trait that is rather stable. My study is set in the work context, and therefore, I believe that career-related self-efficacy may be a more appropriate construct than general self-efficacy to investigate behaviors at work. Indeed, past research has found that career-related self-efficacy is related to career indecision, which is in line with transition procrastination behaviors.

In the previous discussion about traits, it was noted that passive procrastinators generally perform less well than active procrastinators and proactivators. Therefore, passive procrastinators are more likely to receive negative feedback from past experiences, which stands to lower self-efficacy whereas active procrastinators and proactivators tend to have higher levels of self-efficacy.

Based on this, I believe that trait active procrastination and proactivity will be positively related to career self-efficacy whereas trait passive procrastination will be negatively related to career self-efficacy. I also believe that career self-efficacy will be negatively related to procrastination behaviors. Career self-efficacy should mediate the relation between trait passive and career procrastination behaviors as well as the relation between trait proactivity and career procrastination behaviors so that passive procrastinators are expected to engage in more procrastination behaviors due to low career self-efficacy, whereas on the other hand, proactivators are less likely to do so because they believe in their abilities to achieve the career goals and therefore are not afraid and hesitate to act on them. As was the case with subjective temporal proximity, career self-efficacy is unlikely to explain the positive relation between trait active procrastination and procrastination behaviors, but career self-efficacy adds an opposing, negative effect to the positive effect that trait active procrastination has on procrastination behaviors. Thus, I believe that career self-efficacy acts as an intervening variable in the relation between trait active procrastination and transition procrastination behaviors so as to reduce the overall positive effect of trait active procrastination on procrastination behaviors.

H6a: Trait passive procrastination is negatively related to career self-efficacy.
H6b: Trait active procrastination is positively related to career self-efficacy.
H6c: Trait proactivity is positively related to career self-efficacy.
H7: Career self-efficacy is negatively related to transition procrastination behavior.
H8a: Career self-efficacy mediates the relation between trait passive procrastination and transition procrastination behavior.
H8b: Career self-efficacy has a negative intervening effect in the relation between trait active procrastination and transition procrastination behavior.
H8c: Career self-efficacy mediates the relation between trait proactivity and transition procrastination behavior.

Resources are a powerful backup that can be leveraged for accelerating individual development in the career advancing process; because of this, they can increase individuals' expectancies of successfully transforming into the desired role. Krause and Freund (2014) figured out that resources helped establish high self-efficacy resulting from increasing perception of probability to succeed and decreasing fear of failure. Another point of view from the construal-level theory states that a more concrete level of focus increases the feasibility of a task and hence decreases procrastination behaviors (Trope & Liberman, 2010). Organizational and/or industrial resources can help individuals map out the path to go up the ladder by providing individuals with detailed instruments for the realization of their career goals. On the other hand, constraints within the institution or profession should decrease individuals' self-efficacy of achieving their career goal. In Lent et al.'s Social Cognitive Career Theory (SCCT, 2000), the mediating effect of self-efficacy in the relationship between contextual support/barriers and people's choice of action was supported by their data. They found that contextual factors influenced people's behaviors through self-efficacy. Therefore, it seems reasonable to suggest that organizational and industrial resources will help build up individuals' career self-efficacy to achieve their career goals and motivate them to get started, whereas constraints will decrease individuals' career self-efficacy to do so and lead to more procrastination behaviors.

H9a: Resources are positively related to career self-efficacy.
H9b: Constraints are negatively related to career self-efficacy.
H10a: Career self-efficacy mediates the relation between resources and transition procrastination behavior.
H10b: Career self-efficacy mediates the relation between constraints and transition procrastination behavior.

The proposed model to be tested in this research is shown in Figure 1. A summary of hypotheses is provided in Table 1.

Figure 1

A Mediated Model of Predictors of Career Transition Procrastination Behaviors

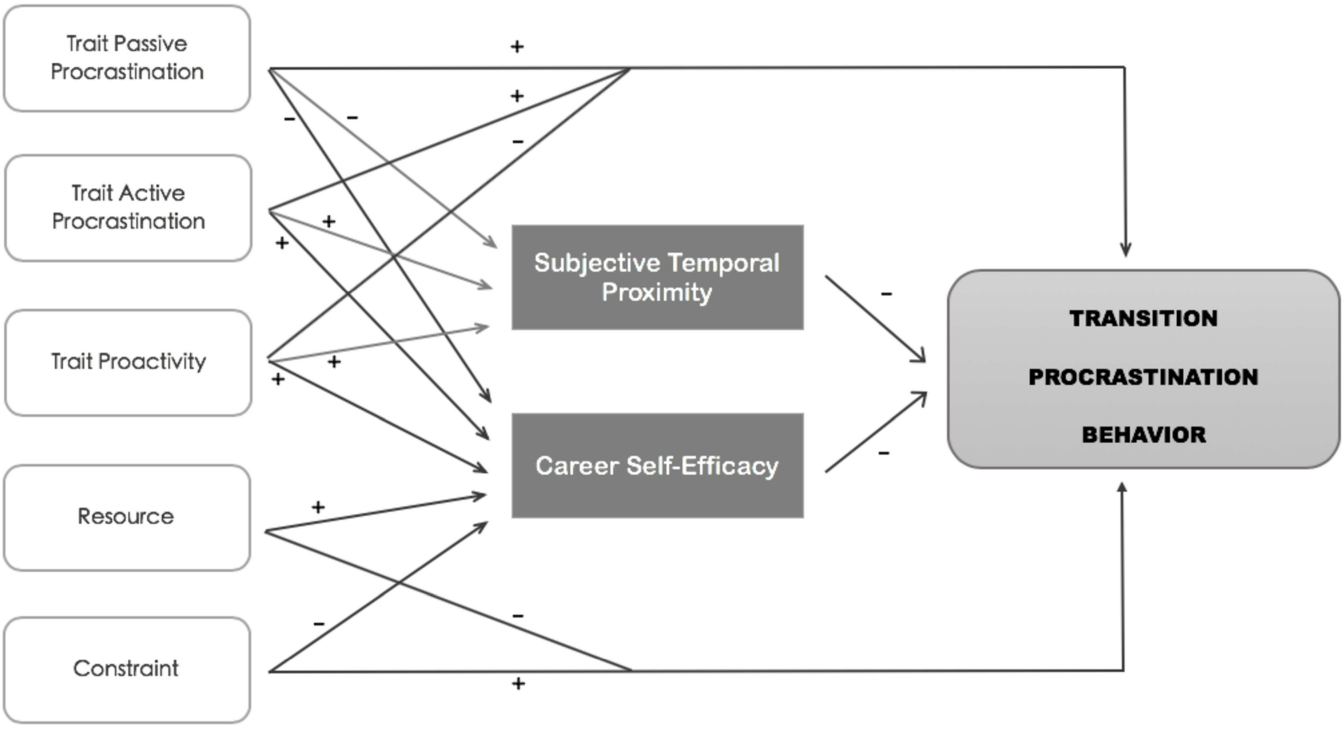

Table 1

List of Hypotheses

Path	Hypotheses
IV (traits) → DV	H1a: Trait passive procrastination is positively related to transition procrastination behavior. H1b: Trait active procrastination is positively related to transition procrastination behavior. H1c: Trait proactivity is negatively related to transition procrastination behavior.
IV (situational factors) → DV	H2a: Organizational and/or industrial resources for development are negatively related to transition procrastination behavior. H2b: Organizational and/or industrial constraints are positively related to transition procrastination behavior.
IV (traits) → MED (subjective temporal proximity)	H3a: Trait passive procrastination is negatively related to subjective temporal proximity. H3b: Trait active procrastination is positively related to subjective temporal proximity. H3c: Trait proactivity is positively related to subjective temporal proximity.
MED (subjective temporal proximity) → DV	H4: Subjective temporal proximity is negatively related to transition procrastination behavior.
Mediation and Intervening (subjective temporal proximity) Relations between IV (traits) and DV	H5a: Subjective temporal proximity mediates the relation between trait passive procrastination and transition procrastination behavior. H5b: Subjective temporal proximity has a negative intervening effect in the relation between trait active procrastination and transition procrastination behavior. H5c: Subjective temporal proximity mediates the relation between trait proactivity and transition procrastination behavior.
IV (traits) → MED (career self-efficacy)	H6a: Trait passive procrastination is negatively related to career self-efficacy. H6b: Trait active procrastination is positively related to career self-efficacy.

	H6c: Trait proactivity is positively related to career self-efficacy.
MED (career self-efficacy) → DV	H7: Career self-efficacy is negatively related to transition procrastination behavior.
Mediation and Intervening (career self-efficacy) Relations between IV (traits) and DV	H8a: Career self-efficacy mediates the relation between trait passive procrastination and transition procrastination behavior. H8b: Career self-efficacy has a negative intervening effect in the relation between trait active procrastination and transition procrastination behavior. H8c: Career self-efficacy mediates the relation between trait proactivity and transition procrastination behavior.
IV (situational factors) → MED (career self-efficacy)	H9a: Resources are positively related to career self-efficacy. H9b: Constraints are negatively related to career self-efficacy.
Mediation and Intervening (career self-efficacy) Relations between IV (situational factors) and DV	H10a: Career self-efficacy mediates the relation between resources and transition procrastination behavior. H10b: Career self-efficacy mediates the relation between constraints and transition procrastination behavior.

PILOT STUDY

Pilot data were collected from 180 psychology undergraduate students to validate the transition procrastination scales and to ensure that the construct of career procrastination behavior is distinct from trait procrastination. This data collection was part of a larger study on the experience of graduating from University, and this survey was the second of four surveys in that study. This survey was completed within a few months of participants graduating with their University degrees. Participants completed the survey online. Among the 180 participants, 53 skipped all the questions after they entered the web survey and filled out personal information. Therefore, the final sample size was 127. Data were analyzed with SPSS.

Method

Participants and procedure

Participants ranged in age from 18 to 43 years, with an average of 23.78 years old (*SD* = 3.17). In terms of gender, 31% were man and 69% were women. The sample included individuals who were white (60%), Asian (32.8%), Black (7.2%), Latin American (6.1%), Aboriginal (0.6%), and other ethnicities (6.7%)[1]. The sample was comprised of 85% international students and 14.4% local/Canadian students[2], 81.1% were full-time students and 18.3% were part-time students[3]. The majority of participants (64%) reported that they were currently working; of those, the average hours worked per week was 16.17 (*SD* = .83). For annual income, 8.3% people reported incomes of less than $5,000, 8.9% in the range of $5,000-9,999, 9.4% in the range of $10,000-14,999, 15% in the range of $15,000-24,999, 12% in the range of $25,000-34,999, 10% in the range of $35,000-49,999, and 8.4% in the range of $50,000- 124,999[4]. Participants in the pilot study worked in various industries, including retail trade, finance and insurance, educational services, health care

[1] Note: Total adds to more than 100% due to multiple options checked by some people.
[2] Note: 0.6% of people did not report.
[3] Note: 0.6% of people did not report.
[4] Note: 10.5% of people reported “Don’t know” or “No response” and 17.2% of people did not respond to the question.

and social assistance, and arts, entertainment and recreation. Job titles varied, including administrative assistant, bank clerk, analyst, research coordinator, sales agent, and cashier, with 3.3% of the sample indicating that they were currently in a managerial position.

Measures

All scale items can be found in Appendix 1.

Trait Passive Procrastination: Lay's General Procrastination (GP) Scale (Lay, 1986) was used to measure trait passive procrastination. A sample item is: "Even with tasks that require little else except sitting down and doing them, I rarely get them done right away". Ratings for this scale were made on a 5-point Likert scale with "1" representing "strongly disagree" and "5" representing "strongly agree". The scale originally had 20 items, among which 7 items were included to measure trait passive procrastination in this study.

Trait Active Procrastination: The Active Procrastination (AP) Scale (Choi & Moran, 2009) was used to measure trait active procrastination. A sample item is: "In order to make better use of my time, I intentionally put off some tasks". Ratings for this scale were made on a 5-point Likert scale with "1" representing "strongly disagree" and "5" representing "strongly agree". The scale originally had 16 items measuring four factors – outcome satisfaction, preference for time pressure, intentional decision, and ability to meet deadlines, which could be summed to create an overall active procrastination score. For the pilot study, eight items were selected to measure trait active procrastination (the remaining eight items were adapted to measure procrastination behaviors, described below).

Career Transition Procrastination Behaviors: The Tuckman Procrastination Scale (TPS, Tuckman, 1991) was adapted to measure passive career transition procrastination behaviors. A sample item is: "How often did you delay making tough decisions about advancing in your career?" Ratings for this scale were made on a 5-point frequency scale with "0" representing "never" and "4" representing "always". The scale originally had 35 items measuring passive procrastination; six items were selected and adapted for inclusion to measure passive career transition

procrastination in this study. Items from the Active Procrastination Scale (Choi & Moran, 2009) were adapted to measure active career transition procrastination behaviors. A sample item is: "How often did you feel that you would prefer to have a deadline by which you had to get promoted at work?" Participants were asked to indicate their frequency of engagement in each behavior over approximately the past six months on a 5-point scale with "0" representing "never" and "4" representing "always". The AP scale has 16 items and the eight items that were not being used in the measurement of trait active procrastination were revised to reflect career active transition procrastination behaviors. Items from both scales were combined together to make one 14-item scale of procrastination behaviors. Prior to their combination, I double checked the number of dimensions of this scale by running exploratory factor analysis (as described in the Results section).

Results

To explore whether trait procrastination and procrastination behaviors were distinct and whether active and passive procrastination were distinct, I conducted exploratory factor analyses. The initial unrotated results showed six components with Eigenvalues greater than one, explaining a total 63.26% of the variance, but according to the scree plot, there were only four components above the elbow. I then conducted an analysis with an oblique rotation, setting the number of factors to four, but the factor loadings of the four components did not map onto clear constructs; the first component covered both passive and active behaviors and the last component included items from the behavioral, trait passive, and trait active procrastination scales. I then examined a 2-factor solution, but it also did not lead to factors that were easily interpretable. The final analysis was a three-factor solution, with an oblique rotation. This solution explained 48.69% of the variance. Based on the factor loadings, trait passive procrastination and trait active procrastination were separate factors, but passive and active procrastination behaviors loaded on a single dimension, although a few items still had cross-loadings on multiple factors or low loadings on all factors. Next, I conducted internal consistency reliability analyses for trait active procrastination,

trait passive procrastination and procrastination behaviors, based on these 3 factors. The results showed good reliability for the procrastination behavior scale, and acceptable reliability for trait active procrastination, but low reliability for trait passive procrastination. In the end, some items (1 item for trait passive procrastination and 2 items for trait active procrastination) were deleted due to low factor-loadings, cross factor-loadings, or low Cronbach's alphas. After deletion, I ran the exploratory factor analysis again with three factors and re-calculated the Cronbach's alphas. Results of the final factor analysis are presented in Table 2 and the alphas, which were all acceptable are presented in Table 3.

I then computed scale scores for Trait Passive Procrastination, Trait Active Procrastination and Procrastination Behaviors. The correlations among variables as well as means and standard deviations are presented in Table 3. As shown, procrastination behavior was positively related to both trait passive procrastination and trait active procrastination. Trait passive procrastination and trait active procrastination were also positively correlated. It is noteworthy, however, that correlations between behaviors and traits are only moderate, with less than 15% of the variance being shared between trait procrastination (either active or passive) and procrastination behavior.

Table 2

Pilot Study: Three-Factor Exploratory Factor Analysis of Procrastination Items

Item	Factor Loadings		
	1	2	3
1. How often did you purposely wait until the last minute to do what it would take to get a promotion at work?	**.874**	.106	-.131
2. How often did you manage to find excuses for not doing anything to get a promotion at work?	**.850**	.042	-.008
3. How often did you wait until the last minute to do things to get a promotion at work, but still get them done on time?	**.820**	-.001	.003
4. How often did you put off doing things that would help you get a promotion at work?	**.802**	.013	.036
5. How often did you feel that time pressure to advance in your career was making you upset and reluctant to act?	**.737**	.017	-.017
6. How often did you promise yourself that you would do something to advance in your career, but then delay taking actions?	**.724**	.261	-.015
7. How often did you think that you would be more likely to get a promotion at work because you were starting to work on it at a slower pace and long before it was going to happen?	**.712**	-.127	-.101
8. How often did you struggle to finish activities that you had started to help you advance in your career?	**.704**	.219	.010
9. How often did you waste time rather than trying to advance in your career?	**.661**	.347	-.095
10. How often did you deliberately postpone activities that would help you to advance in your career in order to use your time more efficiently?	**.520**	-.115	.400
11. How often did you delay making tough decisions about advancing in your career?	**.505**	-.029	.207
12. How often did you feel that you would prefer to have a deadline by which you had to get promoted at work?	**.452**	-.065	.287

Table 2

Three-Factor Exploratory Factor Analysis of Procrastination Items from Pilot Data (continued).

13. How often did you feel that your efforts to advance at work were benefitting because you were racing to meet a deadline for promotion?	**.449**	-.389	.087
14. I usually accomplish all the things I plan to do by the time I plan to do them.	-.008	**-.741**	.173
15. I generally delay before starting on work I have to do.	-.047	**.719**	.172
16. I am continually saying "I'll do it tomorrow."	.130	**.694**	.036
17. In preparing for some deadline, I often waste time by doing other things.	-.004	**.664**	.292
18. I often fail to meet deadlines that I set for myself.	.113	**.643**	.028
19. I often finish things I have to do sooner than necessary.	-.167	**.610**	.238
20. Even with tasks that require little else except sitting down and doing them, I rarely get them done right away.	.126	**.482**	.180
21. I often run late, but I always get things done.	-.057	**.455**	.448
22. How often did you follow a plan of action to advance in your career?	.198	**.435**	-.049
23. I am usually happier with the way things turn out when I have to rush to get them done.	.028	.021	**.819**
24. I work better when I have to rush to meet a deadline.	.042	.065	**.770**
25. I intentionally put off work to maximize my motivation.	.128	.040	**.751**
26. In order to make better use of my time, I intentionally put off some tasks.	-.085	.093	**.489**

Note. N=127. Deleted items were excluded from the table. Procrastination behaviors: 1-13, 22. Trait Passive Procrastination: 14-17, 19, 20. Trait Active Procrastination: 18, 21, 23-26.

Table 3

Pilot Study: Means, Standard Deviations, Correlations among Variables and Internal Consistencies

	Mean	SD	1	2	3
1. Trait Passive Procrastination	3.00	.84	**.81**		
2. Trait Active Procrastination	2.84	.77	.61**	**.76**	
3. Procrastination Behaviors	1.14	.69	.25**	.35**	**.90**

Note. *p<=.05 **p<=.01 ***p<=.001. N=137. Cronbach's alphas appear in bold along the diagonal. Trait Passive Procrastination, Trait Active Procrastination and Procrastination Behaviors were measured on a 5-point scale.

Discussion

Based on the results of the pilot study, I concluded that procrastination traits and behaviors were two separate constructs. In other words, trait procrastination does not completely explain engagement in procrastination behaviors, which suggests that procrastination behaviors also derive from other factors.

As expected, trait passive procrastination and trait active procrastination turned out to be different components, which suggests that among procrastinators, some have the passive tendency to drag things down unnecessarily against their will, whereas others actively leverage time pressure to arrange things more effectively.

On the other hand, passive and active procrastination behaviors did not emerge as separate constructs. Therefore, I combined items pertaining to passive and active procrastination behaviors into one scale as planned: career transition procrastination behavior. As discussed earlier, the two procrastination behaviors may not be distinct because both pertain to "delaying things," regardless of the reason.

The correlations among procrastination traits and behaviors suggested that they were related to each other. Trait active procrastination and trait passive procrastination had a significant and high positive correlation of 0.61, which was not surprising as both traits share many aspects with each other, most notably the tendency of dragging things down to the last minute. Both traits had positive relations with procrastination behaviors, suggesting that people with either trait could engage in more procrastination behaviors.

I also noticed that the mean for procrastination behavior was relatively low (1.14 on a 5-point scale), indicating that not many participants reported engaging in procrastination behaviors. A possible reason could be that career promotion seemed too far away to the participants of the pilot study who had just graduated with their undergraduate degrees within a few months of completing the survey.

MAIN STUDY

Method

Participants and procedure

Participants were recruited through a panel service called "AskingCanadians" and were asked to complete two online surveys with a time interval of 4 weeks. This allowed for possible differences in subjective temporal proximity between the first survey and the second survey and minimized potential biases due to mood effects. In the first wave, 541 people went to the survey website, but 242 participants were excluded from data analyses. Of those who were excluded, 119 were screened out due to lack of consent, not living in Canada, falling outside the specified age range of 25-45 years old, being retired, or having reached the quota for our sample. Ninety-four people started but did not submit the survey; 14 took less than 400 seconds to complete the survey, which was less than 1/3 of the average response time; 5 responded incorrectly to "carelessness questions", and 10 answered the questions with patterned straight-line responses.

Based on this, 299 participants were retained for analyses and were sent the second wave survey. Of those, 263 responded to the second survey, among whom 31 were excluded: 16 people did not complete the survey; 7 were screened out for no consent or being outside the desired age range; 4 took less than 270 seconds to complete the survey (again less than 1/3 of the average response time), 1 answered wrongly to the "carelessness questions" and 3 people were identified as straightliners. Furthermore, 15 people were excluded due to significant job changes between the two survey waves (e.g., new job, lost job, switched from part-time to full-time or full-time to part-time, promotion to managerial level). Data from 217 matched participants were used in the final data analysis.

The average age of these participants was 34 years old (*SD*=5.22). Ninety-four participants (43.3%) were man, 122 participants (56.2%) were women and 1 participant (0.5%) was transgender. All of the participants lived in Canada, 30% of them identified themselves as visible

minorities and 3.2% of them identified themselves as aboriginals. The majority were married or living as married (55.3%) or single (35.9%), and the rest (8.8%) were widowed, divorced, separated or other. One hundred and eighty people were full-time workers (82.9%), 27 were part-time workers (12.5%) and the rest was currently unemployed (4.6%). Thirty-three (15.2%) participants indicated that they held more than one job currently. On average, they worked 39.3 hours per week (*SD*=15.95). They had been, on average, working in their current company for 5.79 years (*SD*=5.12) and in their current industry for 8.81 years (*SD*=5.91). They worked in various industries, including health care and social assistance (13.1%), educational services (10.4%), professional scientific and technical services (9.8%), and public administration (7.1%). Fifty-two people (24%) indicated that they were in a managerial position and, of those, the average managerial tenure was 5.38 years (*SD*=4.97). Among these participants, 47 (90.4%) reported that they had the goal to advance to a higher level of management in their career. Among participants who were not currently in a managerial position, 91 (59.1%) indicated that they had the goal to advance to a managerial position in the future.

Measures

All scale items can be found in Appendix 1. In the survey at T1, all measures were included, as well as demographics questions. In the survey at T2, all variables were measured again, with the exception of the personality traits, which were not measured again because they are presumed to be stable. Concerning possible biases that could be caused due to significant changes in participants' job situations from Time 1 to Time 2, I also asked in the second survey if the returning participants had changed their job situations (e.g., got a new job, lost a job, changed working schedule from part-time to full-time or full-time to part-time, or got a promotion to managerial level).

Trait Passive Procrastination: Lay's General Procrastination Scale (GP, Lay, 1986) was used to measure trait passive procrastination. Ratings for this scale were made on a 5-point Likert scale

with “1” representing “strongly disagree” and “5” representing “strongly agree”. The same 7 items that were used in the Pilot Study were used in the main study.

Trait Active Procrastination: The Active Procrastination Scale (AP, Choi & Moran, 2009) was used to measure trait active procrastination. Ratings for this scale were made on a 5-point Likert scale with “1” representing “strongly disagree” and “5” representing “strongly agree”. For this study, the same 8 items that were used in the Pilot Study were used in the main study.

Trait Proactivity: The Proactive Personality Scale (PPS, Seibert et al., 1999) 10-item version, was used to measure trait proactivity. A sample item is: “If I believe in an idea, no obstacle will prevent me from making it happen”. Ratings for this scale were made on a 5-point Likert scale with “1” representing “strongly disagree” and “5” representing “strongly agree”.

Resources: The Perceived Investment in Employees’ Development (PIED, Lee & Bruvold, 2003) scale was used to measure organizational and/or industrial resources (for career development). A sample item is: “My organization provides support when employees decide to obtain ongoing training”. Ratings for this scale were made on a 5-point Likert scale with “1” representing “strongly disagree” and “5” representing “strongly agree”. The scale contained nine items. Six items were selected and were revised to reflect support from within the organization and included in this survey. A further four items to capture opportunities from both within one’s organization and more broadly from one’s profession (outside the organization) were developed by the author.

Constraints: The Career Barriers Inventory (CBI, Swanson, Daniels, & Tokar, 1996) was used to measure organizational and/or industrial constraints. The inventory has 18 subscales, with 102 items. I selected the names of relevant subscales and adjusted them into nine items about career development barriers both within one’s organization and outside one’s organization at a professional level. A sample item is: “My organization ignores sexual harassment in the workplace”. Ratings for this scale were made on a 5-point Likert scale with “1” representing “strongly disagree” and “5” representing “strongly agree”.

Career Self-Efficacy: The Occupational Self-Efficacy Scale (Schyns & Collani, 2002) was used to measure career self-efficacy. A sample item is: "When I make plans concerning my future at work, I can make them happen". Ratings for this scale were made on a 5-point scale with "0" representing "not at all accurate" to "4" representing "completely accurate".

Subjective Temporal Proximity: The method of Peetz, Wilson, and Strahan (2009), which had a timeline with five points on it, was included as one measure of subjective temporal proximity in this study. Participants were asked to indicate how far away they felt the goal of becoming a manager was and were given points on the timeline to respond. Choices on the timeline ranged from "1" representing "extremely far away" to "5" representing "very soon". In addition, five items were selected from the "Remaining time" sub-scale of the Occupational Future Time Perspective (OFTP, Zacher & Frese, 2009; 10 items) and were modified for this study. A sample item is: "The time left to advance in my career seems infinite to me" (reverse-coded for this study). Ratings for this scale ranged from "0" representing "not at all accurate" to "4" representing "completely accurate". The correlations between the single item time line and the other five items from the OFTP were very low. Therefore, the single item time line was taken out from the measurement of subjective temporal proximity and I did not use it in any analyses.

Transition Procrastination Behaviors: Six items from the Tuckman Procrastination Scale (TPS, Tuckman, 1991) that were adapted for the Pilot Study were included in the main study . A sample item is: "How often did you delay making tough decisions about advancing in your career?" In addition, eight items from the Active Procrastination Scale (AP, Choi & Moran, 2009) were adapted for inclusion in the main study. These were the same eight items that were used in the pilot study, but further modifications were made to make the items simpler and easier to understand. A sample item is: "How often did you feel that you would prefer to have a deadline by which you had to get promoted at work?" Participants were asked to indicate their frequency of engagement in each behavior since January 1 of the calendar year (approximately 5 months at T1 and 6 months at T2) on a 5-point scale with "0" representing "never" and "4" representing "always".

Conscientiousness: Conscientiousness was measured using six items taken from the 20-item scale of the Big-Five Domain based on Goldberg's (1992) markers of the Big-Five, as listed in International Personality Item Pool (ipip.org). A sample item is: "I am always prepared". Ratings for this scale were made on a 5-point scale with "0" representing "does not describe me" to "4" representing "describes me extremely".

Openness to Experience: Openness to Experience was measured using six items taken from the 10-item scale of the NEO domain based on Costa and McCrae's (1992) markers of the Big Five, as listed in International Personality Item Pool (ipip.org). A sample item is: "I enjoy hearing new ideas". Ratings for this scale were made on a 5-point scale with "0" representing "does not describe me" to "4" representing "describes me extremely".

Normative Advancement Time: I tried to gather information about normative temporal proximity in this study. In order to estimate the actual time left for the participants to advance in their career from worker to management level, I asked them the normative advancement time in their professions, with the intention of comparing it to how long they had been in their current positions. However, only about half of the people (49.3%) answered the question. 14.3% provided an answer of "not applicable" and 33.6% answered "unknown". Further, the tenure questions in the demographics section of the survey did not contain sufficient information to assess "professional tenure" and, in the end, I was unable to determine if participants were close to the normative advancement time or not. Thus, this measure was not used in any analyses.

Results

Preliminary Analyses

Prior to conducting the main analyses to test my hypotheses, I ran a series of exploratory factor analyses to assess the factor structures of different sets of measures that were used in this research. Because I used previously published scales, I focused on groupings of variables based on their roles in my theoretical model (e.g., traits, situational factors, mediators) and did not do an overall factor analysis with all items that were included in the surveys. Also, in order to maintain the

independence of the data points, I did the factor analyses separately for T1 and T2. I followed the same approach that was used in the Pilot Study, looking at both eigenvalues and the scree plots to determine the number of factors, with oblique rotations.

For the procrastination items (including traits and behaviors), the initial results showed eight components with eigenvalues greater than one, explaining a total 69.56% of the variance, but according to the scree plot, there were only three components above the elbow. I then set the number of factors to two, three and four, based on the logic that the items could load as procrastination traits vs. behaviors (two factor), trait passive procrastination vs. trait active procrastination vs. procrastination behaviors (three factors, as in the Pilot Study), or active procrastination trait vs. passive procrastination trait vs. active procrastination behavior vs. passive procrastination behavior (four factors). The factor loadings for two and four components were not clean or easily interpretable, but the three-factor solution made sense. The final analysis was a three-factor solution, with an oblique rotation, which explained 48.38% of the variance. As shown in Table 4, the procrastination behavior items loaded as a separate component apart from trait procrastination items, which generally loaded on separate passive and active factors. These results were similar to the Pilot study, however, the loadings for trait passive and active procrastination items were not as clean as in the pilot study.

For resources and constraints from T1 data, the initial results showed four components with eigenvalues greater than one, explaining a total 56.20% of the variance, but the scree plot showed two clear components above the elbow. The final analysis was a two-factor solution, with oblique rotation, which explained 43.96% of the variance. Based on the factor loadings (see Table 5), items for resources and constraints loaded clearly onto two separate constructs. In the T2 data, the initial results showed five components with eigenvalues greater than one, explaining a total 61.30% of the variance, but the scree plot still showed two clear components. The final analysis was a two-factor solution with an oblique rotation, which explained 43.62% of the variance. As shown in

Table 6, again, the factor loadings for resources and constraints were clean supporting that they were two separate constructs.

I then tested the internal consistencies of the scales. Among all, trait active procrastination and transition procrastination behaviors had relatively low reliabilities. Therefore, some items (3 items for trait active procrastination and 5 items for procrastination behaviors; see Appendix 1) were deleted due to low factor loadings, cross-factor loadings or low Cronbach's alphas. After deletion, the reliability analyses were conducted again, and all the alphas were acceptable (see Table 7). Taking together the results of the factor analyses and the internal consistency analyses, I concluded that passive and active transition procrastination behaviors were not separated as two constructs, but that trait passive procrastination, trait active procrastination and trait proactivity were distinct constructs. Also, resources and constraints were distinct constructs.

I then computed scale scores for each variable. Means, standard deviations, correlations among variables, and internal consistencies are presented in Table 7. As shown, procrastination behavior measured both at T1 and T2 was positively related to both trait passive procrastination and trait active procrastination but had no relation with trait proactivity. This is consistent with H1a and H1b, but not H1c. As expected, procrastination behavior was positively correlated to constraints and negatively related to resources both at T1 and T2, consistent with H2a and H2b, with the exception of the negative relation between procrastination and resources which was not significant in T1 cross-sectional data. Also consistent with Hypotheses 3 and 6, career self-efficacy and subjective temporal proximity were negatively related to trait passive procrastination and positively related to trait proactivity, but the negative relation between subjective temporal proximity from T2 and trait passive procrastination was not significant. Career self-efficacy was positively related to resources and negatively related to constraints, consistent with H9a and H9b. However, subjective temporal proximity was also positively related with resources and negatively related with constraints unexpectedly. The negative relations between the two mediators and procrastination behaviors held at T1 and T2, as well as in time-lagged correlations from T1 to T2,

consistent with Hypotheses 4 and 7. Also, the two mediators were positively correlated with each other at both T1 and T2.

I noticed that both conscientiousness and openness to experience had no relation to procrastination behaviors at T1 and T2, which was in contrast to the literature suggesting that these two dimensions of the Big Five personality domain were linked to procrastination tendency (Bateman & Crant, 1993). However, their relations to trait passive procrastination were negative and significant, which indicated that there could be differences in procrastination at trait and behavioral levels. Another pattern I noticed was that the test-retest reliabilities of the two measures from T1 and T2 of resources, constraints, subjective temporal proximity, career self-efficacy and procrastination behaviors were strongly positively correlated, indicating that these variables were somewhat stable across time.

Table 4

Main Study: Three-Factor Exploratory Factor Analysis of Procrastination Items (Time 1)

Item	Factor Loadings		
	1	2	3
1. How often did you put off doing things that would help you get a promotion at work?	**.811**	.019	.111
2. How often did you struggle to finish activities that you had started to help you advance in your career?	**-.781**	.033	-.154
3. How often did you find it annoying having to meet a promotion deadline?	**-.776**	-.028	.196
4. How often did you manage to find excuses for not doing anything to get a promotion at work?	**.774**	.011	.015
5. How often did you start making efforts to get a promotion at the last minute and find it difficult to complete them on time?	**-.736**	.055	.251
6. How often did you find that time pressure was making you upset and reluctant to act to advance in your career?	**.732**	.067	-.068
7. How often did you waste time rather than trying to advance in your career?	**.679**	.136	.226
8. How often did you promise yourself that you would do something to advance in your career, but then delay taking action?	**.587**	.218	.415
9. How often did you delay making tough decisions about advancing in your career?	**.467**	.206	.440
10. I generally delay before starting on work I have to do.	-.147	**.866**	.157
11. In preparing for some deadline, I often waste time by doing other things.	.058	**.724**	.114
12. Even with tasks that require little else except sitting down and doing them, I rarely get them done right away.	.057	**.713**	.038
13. I intentionally put off work to maximize my motivation.	.043	**.684**	-.015
14. In order to make better use of my time, I intentionally put off some tasks.	-.045	**.646**	-.029

Table 4

Main Study: Three-Factor Exploratory Factor Analysis of Procrastination Items (Time 1, continued)

15. I am usually happier with the way things turn out when I have to rush to get them done.	.080	**.610**	-.329
16. I work better when I have to rush to meet a deadline.	-.059	**.556**	-.260
17. I am continually saying "I'll do it tomorrow."	.090	**.513**	.276
18. I often run late, but I always get things done.	.161	**.403**	-.059
19. I usually accomplish all the things I plan to do by the time I plan to do them.	.094	**-.387**	.374
20. I usually make decisions as soon as possible.	.040	-.076	**.599**
21. I often finish things I have to do sooner than necessary.	.050	-.272	**.536**

Note. N=283. Deleted items were excluded from the table. Procrastination behaviors: 1-9. Trait Passive Procrastination: 10-12, 17, 19-21. Trait Active Procrastination: 13-16, 18.

Table 5

Main Study: Two-Factor Exploratory Factor Analysis of Resources and Constraints Items (Time 1)

Item	Factor Loadings	
	1	2
1. My organization allows employees to have the time to learn new skills that prepare them for future jobs.	**.767**	-.071
2. My organization provides support when employees decide to obtain ongoing training.	**.761**	-.073
3. My organization trains employees on skills that prepare them for future jobs and career development.	**.755**	-.005
4. My organization provides career counselling and planning assistance to employees.	**.724**	.075
5. My organization is receptive to employees' requests for transfers to another department.	**.692**	.017
6. There are associations in my profession that can help me advance in my career.	**.663**	.019
7. My organization provides employees with information on the availability of job openings inside the organization.	**.653**	-.077
8. My organization has a policy to promote from within.	**.570**	-.063
9. It's easy to move from one organization to another in my line of work.	**.557**	.054
10. There are networking events or conferences in my profession that allow me to communicate with people outside my organization.	**.537**	.057
11. My organization discriminates against me on the basis of my race, ethnicity, disability, sexual orientation, and so on, when it comes to job promotions.	-.032	**.801**
12. There is discrimination in my profession against people with my demographic characteristics (e.g., race, ethnicity, disability, sexual orientation, etc.).	-.018	**.739**
13. My organization ignores sexual harassment in the workplace.	-.119	**.719**

Table 5

Main Study: Two-Factor Exploratory Factor Analysis of Resources and Constraints Items (Time 1, continued)

14. I have disabilities that affect my choices for advancing in my career.	.103	**.639**
15. My family is not supportive when it comes to my career choices.	.108	**.598**
16. Conflicts between my work and family make it difficult for me to advance in my career.	.105	**.594**
17. Having a non-traditional career gets me little support for my career development.	.002	**.589**
18. There is little demand in the labor market for people with my skills and training.	.011	**.580**
19. There is a lack of opportunity to network with those who are at a higher level in my line of work.	-.157	**.578**
20. My organization provides insufficient training to individuals who are promoted to managerial positions.	-.107	**.521**

Note. N=283. Resources: 1-10. Constraints: 11-20.

Table 6

Main Study: Two-Factor Exploratory Factor Analysis of Resources and Constraints Items (Time 2)

Item	Factor Loadings	
	1	2
1. My organization provides support when employees decide to obtain ongoing training.	**.816**	-.023
2. My organization provides employees with information on the availability of job openings inside the organization.	**.766**	-.011
3. My organization is receptive to employees' requests for transfers to another department.	**.761**	-.016
4. My organization trains employees on skills that prepare them for future jobs and career development.	**.748**	-.038
5. My organization provides career counselling and planning assistance to employees.	**.725**	.109
6. My organization allows employees to have the time to learn new skills that prepare them for future jobs.	**.701**	-.021
7. It's easy to move from one organization to another in my line of work.	**.652**	.022
8. My organization has a policy to promote from within.	**.649**	-.016
9. There are associations in my profession that can help me advance in my career.	**.567**	-.003
10. There are networking events or conferences in my profession that allow me to communicate with people outside my organization.	**.531**	.004
11. My organization discriminates against me on the basis of my race, ethnicity, disability, sexual orientation, and so on, when it comes to job promotions.	.003	**.742**
12. There is discrimination in my profession against people with my demographic characteristics (e.g., race, ethnicity, disability, sexual orientation, etc.).	.058	**.730**
13. My organization ignores sexual harassment in the workplace.	.028	**.675**

Table 6

Main Study: Two-Factor Exploratory Factor Analysis of Resources and Constraints Items (Time 2, continued)

14. My family is not supportive when it comes to my career choices.	.013	**.658**
15. Conflicts between my work and family make it difficult for me to advance in my career.	.122	**.624**
16. I have disabilities that affect my choices for advancing in my career.	.134	**.571**
17. There is little demand in the labor market for people with my skills and training.	-.092	**.531**
18. There is a lack of opportunity to network with those who are at a higher level in my line of work.	-.258	**.497**
19. Having a non-traditional career gets me little support for my career development.	-.103	**.494**
20. My organization provides insufficient training to individuals who are promoted to managerial positions.	-.262	**.386**

Note. N=232. Resources: 1-10. Constraints: 11-20.

Table 7

Main Study: Means, standard deviations, correlations among variables and internal consistencies (Time 1 and Time 2)

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Trait Passive Procrastination_T1	1.56	.86	**.81**																		
2. Trait Active Procrastination_T1	1.43	.92	.54	**.76**																	
3. Trait Proactivity_T1	2.48	.76	-.33	.18	**.88**																
4. Resources_T1	3.30	.79	-.17	-.01	.24	**.85**															
5. Constraints_T1	2.19	.73	.18	.21	-.04	-.25	**.80**														
6. Career Self-efficacy_T1	2.65	.82	-.41	-.08	.51	.41	-.33	**.80**													
7. Subjective Temporal Proximity_T1	2.11	.81	-.22	-.08	.21	.28	-.26	.48	**.67**												
8. Procrastination Behaviors_T1	.94	.84	.44	.38	.01	-.08	.42	-.34	-.28	**.89**											
9. Conscientiousness_T1	2.88	.64	-.37	-.01	.42	.10	-.00	.24	.05	.01	**.72**										
10. Openness to Experience_T1	2.58	.71	-.18	.11	.55	.10	-.00	.18	.12	.01	.25	**.69**									

Table 7

Main Study: Means, standard deviations, correlations among variables and internal consistencies (Time 1 and Time 2, continued)

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
11. Negative Affect_T1	1.59	.71	.32	.31	-.07	.00	.30	-.35	-.28	.38	-.06	-.09	**.78**								
12. Positive Affect_T1	2.90	.95	-.29	.08	.37	.33	.05	.38	.24	-.05	.22	.18	-.01	**.84**							
13. Resources_T2	3.25	.82	-.05	.10	.17	.80	-.29	.30	.19	-.06	.06	.09	-.02	.24	**.87**						
14. Constraints_T2	2.22	.70	.20	.24	-.03	-.28	.72	-.36	-.24	.38	.03	.06	.37	-.08	-.32	**.79**					
15. Career Self-efficacy_T2	2.65	.74	-.32	-.07	.44	.32	-.32	.71	.41	-.25	.17	.16	-.33	.31	.31	-.41	**.78**				
16. Subjective Temporal Proximity_T2	2.06	.88	-.07	.02	.19	.31	-.29	.42	.71	-.12	.07	.09	-.23	.19	.30	-.25	.42	**.70**			
17. Procrastination Behaviors_T2	1.02	.82	.45	.34	-.11	-.14	.41	-.45	-.30	.67	-.02	-.05	.39	-.14	-.16	.46	-.38	-.19	**.90**		
18. Negative Affect_T2	1.64	.71	.26	.23	-.04	-.09	.34	-.34	-.32	.34	-.01	-.03	.69	-.10	-.14	.44	-.40	-.30	.42	**.78**	
19. Positive Affect_T2	2.84	.91	-.25	.09	.38	.20	.04	.38	.24	-.09	.18	.19	-.08	.71	.19	-.06	.37	.21	-.12	-.11	**.83**

Note. N=215 for Negative Affect_T1. N=216 for Procrastination Behaviors_T1, Procrastination Behaviors_T2, and Negative Affect_T2. N=217 for all the other variables. Cronbach's alphas appear in bold along the diagonal. All variables were measured on 5-point scales where 5 indicated a high value. Correlations above |.14| are significant at $p < .05$. Correlation above |.18| are significant at $p<.01$.

Main Analyses

The PROCESS macro for SPSS (Hayes, 2016) was used for all the regression analyses in the present study. PROCESS can be used for estimating direct and indirect effects in single or multiple mediator models. The mediation tests are executed through a bootstrapping procedure to test the significance of the indirect effects. In this study, the 95% confidence interval was used, and 5,000 bootstrap samples were run. If zero is contained with the 95% CI for the bootstrap samples, it indicates a lack of significance.

All proposed relations were tested and compared using measures from both T1 and T2 whenever possible, so that I had four model combinations in total: all variables measured at T1 (labelled as T1 Cross-Sectional Test), IV and mediators measured at T1 and DV measured at T2 (labelled as Time-Lagged Test with T1 Mediator), IV measured at T1 and mediators and DV measured at T2 (labelled as Time-Lagged Test with T2 Mediator), and all variables measured at T2 (labelled as T2 Cross-Sectional Test). The hypotheses involving personality traits were not tested cross-sectionally at T2 because I did not measure personality at T2; thus, those tests were labelled as N/A in the relevant tables. To test the proposed mediation relations, I used PROCESS Model 4. A summary table for reviewing all results appears in Table 8.

Table 8

Main Study: Summary of the Results

	IV (traits) → DV (procrastination behaviors)	T1 Cross-Sectional Test	Time-Lagged Test with T1 Mediator	Time-Lagged Test with T2 Mediator	T2 Cross-Sectional Test
H1a	Trait passive procrastination is positively related to transition procrastination behavior.	√	√	√	N/A
H1b	Trait active procrastination is positively related to transition procrastination behavior.	√	√	√	N/A
H1c	Trait proactivity is negatively related to transition procrastination behavior.	|×	|×		N/A
	IV (situational factors) → DV (procrastination behaviors)				
H2a	Organizational and/or industrial resources for development are negatively related to transition procrastination behavior.	√ |	√ |	√ |	√ |
H2b	Organizational and/or industrial constraints are positively related to transition procrastination behavior.	√	√	√	√
	IV (traits) → MED (subjective temporal proximity)				
H3a	Trait passive procrastination is negatively related to subjective temporal proximity.	√	√		N/A
H3b	Trait active procrastination is positively related to subjective temporal proximity.				N/A
H3c	H3c: Trait proactivity is positively related to subjective temporal proximity.	√	√	√	N/A

Table 8

Main Study: Summary of the Results (continued)

		T1 Cross-Sectional Test	Time-Lagged Test with T1 Mediator	Time-Lagged Test with T2 Mediator	T2 Cross-Sectional Test
MED (subjective temporal proximity) → DV (procrastination behaviors)					
H4	Subjective temporal proximity is negatively related to transition procrastination behavior.	√			N/A
Mediation and Intervening (subjective temporal proximity) Relations between IV (traits) and DV (procrastination behaviors)					
H5a	Subjective temporal proximity mediates the relation between trait passive procrastination and transition procrastination behavior.	√			N/A
H5b	Subjective temporal proximity has a negative intervening effect in the relation between trait active procrastination and transition procrastination behavior.				N/A
H5c	Subjective temporal proximity mediates the relation between trait proactivity and transition procrastination behavior.	√			N/A
IV (traits) → MED (career self-efficacy)					
H6a	Trait passive procrastination is negatively related to career self-efficacy.	√	√	√	N/A
H6b	Trait active procrastination is positively related to career self-efficacy.				N/A
H6c	Trait proactivity is positively related to career self-efficacy.	√	√	√	N/A
MED (career self-efficacy) → DV (procrastination behaviors)					
H7	Career self-efficacy is negatively related to transition procrastination behavior.	√	√	√	√

Table 8

Main Study: Summary of the Results (continued)

	Mediation and Intervening (career self-efficacy) Relations between IV (traits) and DV (procrastination behaviors)	T1 Cross-Sectional Test	Time-Lagged Test with T1 Mediator	Time-Lagged Test with T2 Mediator	T2 Cross-Sectional Test
H8a	Career self-efficacy mediates the relation between trait passive procrastination and transition procrastination behavior.		√	√	N/A
H8b	Career self-efficacy has a negative intervening effect in the relation between trait active procrastination and transition procrastination behavior.				N/A
H8c	Career self-efficacy mediates the relation between trait proactivity and transition procrastination behavior.	√	√	√	N/A
	IV (situational factors) → MED (career self-efficacy)				
H9a	Resources are positively related to career self-efficacy.	√	√	√	√
H9b	Constraints are negatively related to career self-efficacy.	√	√	√	√
	Mediation and Intervening (career self-efficacy) Relations between IV (situational factors) and DV (procrastination behaviors)				
H10a	Career self-efficacy mediates the relation between resources and transition procrastination behavior.	√	√	√	√
H10b	Career self-efficacy mediates the relation between constraints and transition procrastination behavior.	√	√	√	√

Note. " √ " means significant and supporting the hypothesis. "×" means significant but the opposite to the hypothesis. Blank indicates the results are not significant. When the direct effect and total effect are different, results for the direct effect are indicated to the right of the "|" and results for the total effect are indicated to the left. When only one result is presented, the total and direct effects are the same. N/A indicates that hypotheses involving personality traits were not tested cross-sectionally at T2 because we did not measure personality at T2.

Bivariate Relations of Personality Traits and Procrastination Behavior

Hypothesis 1a stated that trait passive procrastination is positively related to transition procrastination behaviors. Consistent with this hypothesis, trait passive procrastination was positively related to procrastination behaviors using both T1 and T2 data (see Tables 8 and 9).

Hypothesis 1b stated that trait active procrastination is positively related to transition procrastination behaviors. Consistent with this hypothesis, trait active procrastination was positively related to procrastination behaviors using both T1 and T2 data (see Tables 8 and 10).

Hypothesis 1c stated that trait proactivity is negatively related to transition procrastination behaviors. In contrast to this hypothesis, trait proactivity appeared to have no total effect on procrastination behaviors at either T1 or T2. Furthermore, it had a positive direct effect on procrastination behavior once the indirect effects of the mediators were included in the prediction equations for the T1 Cross-Sectional Test and the Time-Lagged Test with Mediators at T1 (see Tables 8 and 11).

Bivariate Relations of Situational factors and Procrastination Behavior

Hypothesis 2a stated that resources are negatively related to transition procrastination behaviors. As shown in Tables 8 and 12, three out of four tests (other than T1 cross-sectional data, where the relation is only marginally significant at $p = .05$) suggested that resources had a negative total effect on procrastination behaviors, which partially supports Hypothesis 2a.

Hypothesis 2b stated that constraints are positively related to transition procrastination behaviors. As shown in Tables 8 and 13, all four tests suggested that constraints (T1 and T2) had positive total and direct effects on procrastination behaviors (T1 and T2), supporting Hypothesis 2b.

Table 9

Main Study: Regression Results for Trait Passive Procrastination and Procrastination Behavior

	T1 Cross-Sectional Test						**Time-Lagged Test with T1 Mediator**					
	SE_T1		STP_T1		PB_T1		SE_T1		STP _T1		PB _T2	
	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se
Constant	3.33***	.09	2.46***	.10	.28**	.09	3.26***	.10	2.42***	.11	.36***	.10
Trait passive procrastination_T1	-.42***	.05	-.25***	.06	.43***	.05	-.39***	.06	-.20**	.06	.42***	.06
R-squared	.19***		.06***		.19***		.17***		.05**		.20***	
Constant					1.12***	.22					1.12***	.22
Trait passive procrastination _T1 (direct effect)					.33***	.06					.30***	.06
Career self-efficacy_T1 (SE_T1)					-.14*	.06					-.27***	.07
Subjective temporal proximity_T1 (STP_T1)					-.16**	.06					-.10	.07
R-squared					.25***						.29***	
Indirect effect via career self-efficacy_T1					.06	.03					.11	.03
95% Bootstrap confidence interval for the indirect effect via career self-efficacy _T1					-.001 to .13						.05 to .18	
Indirect effect via subjective temporal proximity _T1					.04	.02					.02	.02
95% Bootstrap confidence interval for the indirect effect via subjective temporal proximity _T1					.01 to .08						-.01 to .06	

Table 9

Main Study: Regression Results for Trait Passive Procrastination and Procrastination Behavior (continued)

	Time-Lagged Test with T2 Mediator					
	SE_T2		STP_T2		PB_T2	
	Coeff	se	Coeff	se	Coeff	se
Constant	3.08***	.10	2.17***	.12	.36***	.10
Trait passive procrastination_T1	-.27***	.06	-.07	.07	.42***	.06
R-squared	.10***		.004		.20***	
Constant					1.31***	.24
Trait passive procrastination _T1 (direct effect)					.22***	.05
Career self-efficacy_T2 (SE_T2)					-.26***	.08
Subjective temporal proximity_T2 (STP_T2)					-.07	.06
R-squared					.27***	
Indirect effect via career self-efficacy _T2					.04	.03
95% Bootstrap confidence interval for the indirect effect via career self-efficacy_T2					-.005 to .10	
Indirect effect via subjective temporal proximity _T2					.003	.01
95% Bootstrap confidence interval for the indirect effect via subjective temporal proximity _T2					-.01 to .02	

Note. N=282 for T1 Cross-sectional Test, N=216 for T1 and T2 Time-lagged tests. *p<=.05 **p<=.01 ***p<=.001. 95% Bootstrap CI. SE=Career Self-Efficacy, STP=Subjective Temporal Proximity, PB=Procrastination Behaviors.

Mediated and Indirect Relations of Subjective Temporal Proximity

Trait Passive Procrastination: Hypothesis 5a stated that the relation between trait passive procrastination and procrastination behavior is mediated by subjective temporal proximity (STP). As shown in Table 9, in the T1 Cross-Sectional Test, trait passive procrastination was negatively related to subjective temporal proximity, which was negatively related to procrastination behaviors. When the IV (Trait Passive Procrastination) and both mediators were included in the model predicting procrastination behaviors, trait passive procrastination remained a significant predictor of procrastination behaviors. The estimate for the indirect effect of trait passive procrastination on procrastination behaviors via subjective temporal proximity was positive and significant, supporting H5a. For Time-Lagged Test with Mediator at T1, trait passive procrastination (T1) was negatively related to subjective temporal proximity (T1), while subjective temporal proximity (T1) did not have a significant relation with procrastination behaviors (T2). In contrast to the T1 Cross-Sectional Test, the indirect effect through subjective temporal proximity was not significant, which does not support H5a. For the Time-Lagged Test with Mediator at T2, trait passive procrastination (T1) was not related with subjective temporal proximity (T2). Moreover, the relation between subjective temporal proximity (T2) and procrastination behaviors (T2) was no longer significant. Consistent with the T1 time-lagged test, the indirect effect of trait passive procrastination on procrastination behaviors through subjective temporal proximity was not significant.

Taken together, results of the T1 cross-sectional test are consistent with Hypothesis 5a, whereas results of the time-lagged tests are not. It is worth noting that the direct effects of trait passive procrastination on procrastination behaviors remained significant in the T1 cross-sectional test once the indirect effects were included; thus, these results support the notion that subjective temporal proximity partially mediates the relations between trait passive procrastination and procrastination behaviors in that test.

Trait Active Procrastination: Hypothesis 5b predicted that subjective temporal proximity intervenes to dampen the overall positive relation between trait active procrastination and procrastination behaviors, which is a negative pathway lowering down the total positive effect. In all three tests (see Table 10), trait active procrastination was not related to subjective temporal proximity, which resulted in no significant indirect effect (intervening) from trait active procrastination to procrastination behaviors via subjective temporal proximity. Subjective temporal proximity was negatively related to procrastination behaviors only in T1 Cross-Sectional Test, but not in Time-Lagged Test with Mediator at T1 or Time-Lagged Test with Mediator at T2. Based on this, Hypothesis 5b was not supported.

Trait Proactivity: Hypothesis 5c stated that the relation between trait proactivity and procrastination behaviors is mediated by subjective temporal proximity. In T1 Cross-Sectional Test, trait proactivity was positively related to subjective temporal proximity, which was negatively related to procrastination behaviors. Supporting H5c, the indirect effect of trait proactivity on procrastination behaviors via subjective temporal proximity was negative and significant, which seemed to cancel out the positive direct effect that trait proactivity has on procrastination behaviors, leading to a non-significant total effect of trait proactivity on procrastination behaviors. For Time-Lagged Test with Mediator at T1 and the Time-Lagged Test with Mediator at T2, the indirect effects of trait proactivity on procrastination behaviors via subjective temporal proximity were not significant, in contrast to H5c. These results provide some support for H5c, but only in the cross-sectional T1 test.

Table 10

Main Study: Regression Results for Trait Active Procrastination and Procrastination Behavior

	T1 Cross-Sectional Test						**Time-Lagged with T1 Mediator**					
	SE_T1		STP_T1		PB_T1		SE_T1		STP_T1		PB_T2	
	Coeff.	se	Coeff.	Se	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se
Constant	2.78***	.09	2.17***	.09	.50***	.08	2.76***	.10	2.21***	.10	.58***	.10
Trait active procrastination_T1	-.08	.05	-.07	.05	.32***	.05	-.07	.06	-.07	.06	.30***	.06
R-squared	.008		.006		.13***		.006		.006		.12***	
Constant					1.55***	.17					1.83***	.19
Trait active procrastination _T1 (direct effect)					.28***	.05					.27***	.05
Career self-efficacy_T1 (SE_T1)					-.25***	.06					-.38***	.07
Subjective temporal proximity_T1 (STP_T1)					-.16**	.06					-.09	.07
R-squared					.26***						.30***	
Indirect effect from career self-efficacy _T1					.02	.01					.03	.02
95% Bootstrap confidence interval for the indirect effect via career self-efficacy _T1					-.004 to .05						-.01 to .08	
Indirect effect from subjective temporal proximity _T1					.01	.01					.007	.01
95% Bootstrap confidence interval for the indirect effect via subjective temporal proximity _T1					-.005 to .04						-.01 to .03	

Table 10

Main Study: Regression Results for Trait Active Procrastination and Procrastination Behavior (continued)

	Time-Lagged with T2 Mediator					
	SE_T2		STP_T2		PB_T2	
	Coeff.	se	Coeff.	se	Coeff.	se
Constant	2.73***	.09	2.02***	.11	.58***	.10
Trait active procrastination_T1	-.05	.05	.03	.06	.30***	.06
R-squared	.004		.001		.12***	
Constant					1.72***	.21
Trait active procrastination_T1 (direct effect)					.29***	.05
Career self-efficacy_T2 (SE_T2)					-.37***	.07
Subjective temporal proximity_T2 (STP_T2)					-.06	.06
R-squared					.25***	
Indirect effect from career self-efficacy_T2					.02	.02
95% Bootstrap confidence interval for the indirect effect via career self-efficacy _T2					-.02 to .07	
Indirect Effect from subjective temporal proximity_T2					-.002	.006
95% Bootstrap confidence interval for the indirect effect via subjective temporal proximity _T2					-.01 to .01	

Note. N=282 for T1 Cross-sectional Test, N=216 for T1 and T2 Time-lagged tests. *p<=.05 **p<=.01 ***p<=.001. 95% Bootstrap CI. SE=Career Self-Efficacy, STP=Subjective Temporal Proximity, PB=Procrastination Behaviors.

Mediated and Indirect Relations of Career Self-Efficacy

Trait Passive Procrastination: Hypothesis 8a stated that the relation between trait passive procrastination and procrastination behavior is mediated by career self-efficacy (SE). In the T1 Cross-Sectional Test (see Table 9), trait passive procrastination was negatively related to career self-efficacy, which was negatively related to procrastination behaviors. When the IV (TPP) and both mediators were included in the model predicting procrastination behaviors, trait passive procrastination remained a significant predictor of procrastination behaviors. However, the estimate for the indirect effect of trait passive procrastination on procrastination behaviors through career self-efficacy was not significant, in contrast to H8a. For the Time-Lagged Test with Mediators at T1 and the Time-Lagged Test with Mediator at T2, trait passive procrastination remained negatively related to career self-efficacy, which was negatively related to procrastination behaviors. In contrast to the T1 Cross-Sectional Test, the indirect effect of trait passive procrastination on procrastination behaviors via career self-efficacy was positive and significant in T1 time-lagged test, but not in T2 time-lagged test.

Taken together, Hypothesis 8a receives support from T1 time-lagged tests, but not from T1 cross-sectional test. Again, it is worth noting that the direct effects of trait passive procrastination remained significant with the indirect effects included; thus, these results support the notion that career self-efficacy partially mediates the relation between trait passive procrastination and procrastination behaviors.

Trait Active Procrastination: Hypothesis 8b predicted that career self-efficacy intervenes in the positive relation between trait active procrastination and procrastination behavior. In all three tests (see Table 10), trait active procrastination was not related to career self-efficacy, which resulted in no significant indirect effect (intervening) from trait active procrastination to procrastination behaviors via career self-efficacy. Based on this, Hypothesis 8b is not supported.

Trait Proactivity: Hypothesis 8c stated that the relation between proactivity and procrastination behaviors is mediated by career self-efficacy. In all three tests (see Table 11), trait proactivity was

positively related to career self-efficacy, which was negatively related to procrastination behaviors. The indirect effects of trait proactivity on procrastination behaviors via career self-efficacy was also negative and significant in all three tests. There was no significant total effect of trait proactivity on procrastination behaviors, but the direct effects were positive in T1 Cross-Sectional Test and Time-Lagged Test with Mediators at T1, but not in Time-Lagged Test with Mediators at T2.

These results provide support for Hypothesis 8c and suggest that career self-efficacy mediated the relation between trait proactivity and procrastination behaviors.

Resources: Hypothesis 10a proposed that the relation between resources and procrastination behavior is mediated by career self-efficacy. As shown in Table 12, resources were positively related to career self-efficacy and career self-efficacy was negatively related to procrastination behaviors in all four tests. The indirect effect via career self-efficacy was negative and significant in all tests, which provides support for Hypothesis 10a. The total effect was fully mediated by career self-efficacy, as no direct effect of resources remained once the indirect effect of the mediator was included in the equations.

Constraints: Hypothesis 10b proposed that the relation between constraints and procrastination behavior is mediated by career self-efficacy. As shown in Table 13, constraints were negatively related to career self-efficacy and career self-efficacy negatively related to procrastination behaviors in all four tests. The indirect effect via career self-efficacy was positive and significant in all tests, which provides support for Hypothesis 10b.

Table 11

Main Study: Regression Results for Trait Proactivity and Procrastination Behavior

	T1 Cross-Sectional Test						**Time-Lagged Test with T1 Mediator**					
	SE_T1		STP_T1		PB_T1		SE_T1		STP_T1		PB_T2	
	Coeff.	se	Coeff.	se	Coeff.	Se	Coeff.	se	Coeff.	se	Coeff.	se
Constant	1.31***	.14	1.43***	.17	1.04***	.17	1.33***	.16	1.57***	.18	1.29***	.19
Trait proactivity_T1	.55***	.06	.26***	.06	-.04	.06	.54***	.06	.22**	.07	-.11	.07
R-squared	.26***		.05***		.001		.25***		.04**		.01	
Constant					1.78***	.18					2.09***	.20
Trait proactivity_T1 (direct effect)					.21**	.07					.16*	.08
Career self-efficacy_T1 (SE_T1)					-.38***	.07					-.47***	.08
Subjective temporal proximity_T1 (STP_T1)					-.17**	.06					-.10	.07
R-squared					.19***						.22***	
Indirect effect from career self-efficacy _T1					-.19	.04					-.24	.05
95% Bootstrap confidence interval for the indirect effect via career self-efficacy _T1					-.28 to -.11						-.33 to -.15	
Indirect effect from subjective temporal proximity _T1					-.04	.02					-.02	.02
95% Bootstrap confidence interval for the indirect effect via subjective temporal proximity _T1					-.08 to -.01						-.06 to.005	

Table 11

Main Study: Regression Results for Trait Proactivity and Procrastination Behavior (continued)

	Time-Lagged Test with T2 Mediator					
	SE_T2		STP_T2		PB_T2	
	Coeff.	se	Coeff.	se	Coeff.	se
Constant	1.61***	.15	1.53***	.20	1.29***	.19
Trait proactivity_T1	.42***	.06	.21**	.08	-.11	.07
R-squared	.19***		.03**		.01	
Constant					2.07***	.22
Trait proactivity_T1 (direct effect)					.08	.08
Career self-efficacy_T2 (SE_T2)					-.44***	.08
Subjective temporal proximity_T2 (STP_T2)					-.04	.06
R-squared					.15***	
Indirect effect from career self-efficacy_T2					-.17	.04
95% Bootstrap confidence interval for the indirect effect via career self-efficacy _T2					-.25 to -.11	
Indirect Effect from subjective temporal proximity_T2					-.01	.01
95% Bootstrap confidence interval for the indirect effect via subjective temporal proximity _T2					-.04 to .02	

Note. N=282 for T1 Cross-sectional Test, N=216 for T1 and T2 Time-lagged tests. *p<=.05 **p<=.01 ***p<=.001. 95% Bootstrap CI. SE=Career Self-Efficacy, STP=Subjective Temporal Proximity, PB=Procrastination Behaviors.

Table 12

Main Study: Regression Results for Resources and Procrastination Behaviors

	T1 Cross-Sectional Test				**Time-Lagged Test with T1 Mediator**			
	SE_T1		PB_T1		SE_T1		PB_T2	
	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se
Constant	1.26***	.18	1.32***	.20	1.27***	.22	1.51***	.24
Resources_T1	.43***	.05	-.11	.06	.42***	.06	-.15*	.07
R-squared	.18***		.01		.16***		.02*	
Constant			1.81***	.21			2.10***	.23
Resources_T1 (direct effect)			.05	.06			.05	.07
Career self-efficacy_T1 (SE_T1)			-.39***	.06			-.46***	.07
R-squared			.13***				.20***	
Indirect effect from career self-efficacy _T1			-.16	.03			-.19	.04
95% Bootstrap confidence interval for the indirect effect via career self-efficacy _T1			-.23 to -.10				-.27 to -.12	

Table 12

Main Study: Regression Results for Resources and Procrastination Behaviors (continued)

	Time-Lagged Test with T2 Mediator				**T2 Cross-Sectional Test**			
	SE_T2		PB_T2		SE_T2		PB_T2	
	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se
Constant	1.70***	.21	1.51***	.24				
Resources_T1	.29***	.06	-.15*	.07				
R-squared	.09***		.02*					
Constant					1.77***	.20	1.52***	.23
Resources_T2					.27***	.06	-.15*	.07
R-squared					.09***		.02*	
Constant			2.22***	.26			2.24***	.25
Resources_T2 (direct effect)			-.03	.07			-.04	.07
Career self-efficacy_T2 (SE_T2)			-.41***	.07			-.41***	.07
R-squared			.15***				.15***	
Indirect effect from career self-efficacy_T2			-.11	.03			-.11	.03
95% Bootstrap confidence interval for the indirect effect via career self-efficacy_T2			-.19 to -.06				-.18 to -.05	

Note. N=282 for T1 Cross-sectional Test, N=216 for T1 and T2 Time-lagged tests and T2 Cross-sectional Test. *p<=.05 **p<=.01 ***p<=.001. 95% Bootstrap CI. SE=Career Self-Efficacy, PB=Procrastination Behaviors.

Table 13

Main Study: Regression Results for Constraints and Procrastination Behavior

	T1 Cross-Sectional Test				**Time-Lagged Test with T1 Mediator**			
	SE_T1		PB_T1		SE_T1		PB_T2	
	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se
Constant	3.51***	.15	.01	.14	3.49***	.17	.001	.16
Constraint_T1	-.38***	.06	.43***	.06	-.38***	.07	.46***	.07
R-squared	.11***		.15***		.11***		.17***	
Constant			.91***	.24			1.21***	.26
Constraint_T1 (direct effect)			.33***	.06			.33***	.07
Career self-efficacy_T1 (SE_T1)			-.26***	.06			-.35***	.06
R-squared			.21***				.28***	
Indirect effect from career self-efficacy_T1			.09	.03			.12	.03
95% Bootstrap confidence interval for the indirect effect via career self-efficacy_T1			.04 to .15				.06 to .19	

Table 13

Main Study: Regression Results for Constraints and Procrastination Behavior (continued)

	Time-Lagged Test with T2 Mediator				**T2 Cross-Sectional Test**			
	SE_T2		PB_T2		SE_T2		PB_T2	
	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se
Constant	3.37***	.15	.001	.16				
Constraint_T1	-.33***	.07	.46***	.07				
R-squared	.10***		.17***					
Constant					3.61***	.15	-.17	.17
Constraint_T2					-.43***	.07	.54***	.07
R-squared					.16***		.21***	
Constant			1.04***	.28			.77*	.30
Constraint_T2 (direct effect)			.36***	.07			.42***	.08
Career self-efficacy_T2 (SE_T2)			-.31***	.07			-.26***	.07
R-squared			.24***				.26***	
Indirect effect from career self-efficacy_T2			.09	.03			.10	.03
95% Bootstrap confidence interval for the indirect effect via career self-efficacy_T2			.04 to .16				.04 to .16	

Note. N=282 for T1 Cross-sectional Test, N=216 for T1 and T2 Time-lagged tests and T2 Cross-sectional Test. *p<=.05 **p<=.01 ***p<=.001. 95% Bootstrap CI. SE=Career Self-Efficacy, PB=Procrastination Behaviors.

DISCUSSION

The purpose of this research was to see whether personal and/or situational factors can explain procrastination behaviors when approaching the worker-to-manager transition and to test the underlying mechanisms that may predict delaying behaviors in this context. This research contributes to the procrastination literature by expanding its focus to the work domain and examining the influences of both personal and situational factors at the same time. Another contribution of this research is the simultaneous examination of active and passive procrastination in the same study, which has not been done before, to my knowledge. Overall, I found that both personality and environmental factors were related to procrastination behaviors when approaching the transition process from worker to manager. The proposed mechanisms of career self-efficacy and subjective temporal proximity explained some, but not all, of the relations between predictors and transition procrastination behaviors. A detailed discussion of each hypothesis appears below, but first I discuss insights on the nature of procrastination that are derived from this research.

The Nature of Procrastination

Past literature has shed light on the nature of procrastination, and whether it should be viewed as a personality trait or behavioral tendency. Some scholars have argued that it should be viewed as a trait when the tendency to procrastinate settles across time (Aitken, 1982; Lay, 1986; Schouwenburg, 2004), whereas others have recognized external influences on people's behavioral tendencies and suggested that procrastination is a dynamic behavior that changes over time and contexts (Blunt & Pychyl, 2005; Milgram et al., 1998; Solomon & Rothblum, 1984; Steel & König, 2006;). I built on these approaches to explore both trait procrastination and procrastination behaviors in the context of the transition from worker to manager.

Another issue that has been raised in the literature on procrastination is that trait procrastination

may be divided into two distinctive forms: passive procrastination, which is a self-regulation failure and usually associated with negative outcomes, and active procrastination, which is considered a time management skill and often leads to positive outcomes (see meta-analysis by Kim & Seo, 2015). Past research, however, has not explored these two sides of procrastination together. The present study built on past research by including both passive and active sides together in the investigation of both procrastination traits and procrastination behaviors.

Consistent with procrastination theory, my results indicated that trait passive procrastination and trait active procrastination are indeed two distinctive constructs. They loaded on different factors in the exploratory factor analyses in both studies and did not always show the same pattern of relations with other variables, although they were strongly positively correlated. My analyses also indicated that trait procrastination and behavioral procrastination are different constructs that exist at the same time, as evidenced by the separate factor loadings in the exploratory factor analyses and having less than 25% shared variance. However, even though I found that it was possible to separate both sides in procrastination traits, I did not find that procrastination behaviors separated into passive and active sides. As discussed earlier, the essential difference between passive and active procrastination lies in the reasons for procrastinating, but they ultimately share the same behavioral tendency of delaying. Combining the results of the pilot study and the main study, I found that active and passive procrastination behaviors formed a single factor. Taking all of these results together, my results support the view that procrastination is more than a single dimension of either trait or behavior but is a complex combination of both.

Predictors of Procrastination Behaviors

Based on the Extended Model of Action Phases (Wrosch & Heckhausen, 1996), which highlighted the impact of changing external resources and constraints before and after developmental deadlines on people's behaviors at different action phases, I argued that procrastination when approaching the worker-to-manager transition can be influenced by both

traits and situational factors. I discuss results for each in turn.

Personality and Procrastination Behaviours. Hypothesis 1 proposed that trait passive procrastination and trait active procrastination are positively related to transition procrastination behaviors when approaching the transition from worker to manager and that trait proactivity is negatively related to transition procrastination behaviors when approaching this transition**.** Supporting **H1a**, trait passive procrastination was positively related to employees' transition procrastination behaviors in both cross-sectional and time-lagged tests, meaning that people with passive procrastination personality are more likely to engage in delaying behaviors when approaching their career transitions. These results are congruent with past literature on procrastination in other contexts, which found that (traditional or passive) procrastinators who had poor self-regulation and time management skills exhibited more procrastination behaviors (Costa & McCrae, 1995; Schouwenburg, 2004; Steel, 2007). **H1b**, which stated that trait active procrastination is positively related to procrastination behaviors, is also supported by both cross-sectional and time-lagged tests. These results are also consistent with past literature, which found that people with trait active procrastination did delay things and reported higher levels of procrastination behaviors in their career development process, just like passive procrastinators (Chun Chu & Choi, 2005).

H1c proposed a negative relation between trait proactivity and transition procrastination behaviors. Results of both cross-sectional and time-lagged tests showed no total effect for this relation, and bivariate correlations were not significant between these two variables. Thus, Hypothesis 1c is not supported in this research. However, some positive direct effects of proactive personality on procrastination behaviors were observed when the indirect effects of subjective temporal proximity and career self-efficacy were also taken into account. The total effect of trait proactivity on procrastination behaviors added up to zero when the negative indirect effects and the positive direct effects were combined. The positive direct effect is surprising because several past studies have found that proactive people tend to show higher career initiative so that they are

less likely to postpone on career developing actions (Bateman and Crant, 1993; Major et al., 2006; Seibert et al., 2001;).

Situational Factors and Procrastination Behaviours. In Hypothesis 2, I proposed that organizational and industrial resources for development are negatively related to transition procrastination behaviors and that organizational and industrial constraints are positively related to transition procrastination behaviors. As indicated in the results, **H2a** is supported in most tests except for T1 cross-sectional test where the relation was only marginally significant at .05; resources are negatively related to transition procrastination behaviors. This is consistent with past research that found a negative relation between environmental resources and career procrastination behaviors (Bańka & Hauziński, 2015). Consistent with **H2b,** organizational and industrial constraints were associated with more transition procrastination behaviors in both cross-sectional and time-lagged tests. This is in line with the results of Brown et al. (2002), which suggested that people would act slower in deciding, changing and growing in their careers when they saw more barriers in their work environment.

Mechanisms

Subjective Temporal Proximity. Hypothesis 5 proposed that subjective temporal proximity mediates or intervenes in the relations between traits (passive procrastination, active procrastination and proactivity) and transition procrastination behaviors.

Firstly, looking at the relations between traits and subjective temporal proximity, the expected negative relations between trait passive procrastination and subjective temporal proximity (**H3a**) was supported in cross-sectional test and T1 time-lagged test and the expected positive relation between trait proactivity and subjective temporal proximity (**H3c**) was supported by the data in all tests. This means that people who have the tendency to passively delay do seem to see things as farther away, whereas proactivators do tend to perceive events as being closer in time to them. These findings are consistent with past studies that found a longer time-lag perception between

current and desired status for passive procrastinators (Dewitte & Schouwenburg, 2002) and with research which found that proactivators perceived their remaining time to be shorter than the objectively available time and, thus, took initiative on actions (Zacher, 2013). However, I did not find any significant relation between trait active procrastination and subjective temporal proximity in either cross-sectional or time-lagged tests, in contrast to **H3b**. It seems that trait active procrastination was not related to how close or far individuals considered their goals to be.

H4 stated that subjective temporal proximity is negatively related to transition procrastination behaviors. This hypothesis is supported in the bivariate correlations for both cross-sectional (both T1 and T2) and time-lagged tests, but in the PROCESS analyses, the effect of subjective temporal proximity on procrastination behaviours was only significant in the Time 1 cross-sectional test, and not in the time-lagged tests. I further hypothesized that subjective temporal proximity mediates the relations between trait passive procrastination, trait proactivity and transition procrastination behaviors (**H5a**, **H5c** respectively). My results supported the notion that subjective temporal proximity acts as a mediator in explaining the positive relation between trait passive procrastination and procrastination behaviors and in explaining the negative relation between trait proactivity and procrastination behaviors, but again this was only significant in the T1 cross-sectional test. The indirect effects through subjective temporal proximity were not significant in the time-lagged tests. These results provide limited support for H5a and H5c. Further, subjective temporal proximity did not intervene in the relation between trait active procrastination and transition procrastination behaviors, in contrast to **H5b**. Based on these findings, there is limited support for the idea that delaying actions in employees' transition process can be partially explained by their time perceptions.

One possible explanation for these null results may be a statistical artefact due to the correlation between the two mediating mechanisms that were included together in the regression analyses. As noted previously, the bivariate correlations between subjective temporal proximity and procrastination behaviors in all tests were negative and significant (r = -.28, p<.001 in T1 cross-

sectional test; r = -.30, p<.001 in T1 time-lagged test; r = -.19, p = .005 in T2 cross-sectional test), which is consistent with Hypothesis 4. However, the mediating effects of subjective temporal proximity were mostly not significant when we put both mediators in the regression model together. I also noticed that the correlation between subjective temporal proximity and career self-efficacy was positive and high (r = .48, p < .001 at T1 and r = .42, p < .001 at T2). This may point to the possibility of a multicollinearity issue such that when predictors are highly correlated, the predictive or explaining power of each predictor can be reduced. It is possible that the mediating effect of career self-efficacy is stronger and when we put them together and the mediating effect of subjective temporal proximity is reduced to be not significant.

Career Self-Efficacy. I hypothesized in Hypothesis 8 that career self-efficacy mediates or intervenes in the relation between traits (passive procrastination, active procrastination and proactivity) and transition procrastination behaviors. I hypothesized in Hypothesis 10 that career self-efficacy mediates the relation between environmental factors (resources and constraints) and transition procrastination behaviors.

Starting with the relations between personality traits and career self-efficacy, I found that the negative relation between trait passive procrastination and career self-efficacy and the positive relation between trait proactivity and career self-efficacy were significant in both cross-sectional and time-lagged tests (supporting **H6a** and **H6c** respectively). As indicated by the results, passive procrastinators had lower self-confidence in their careers, whereas proactivators had higher career self-efficacy concerning the possibility of reaching their career goals through personal efforts. If we assume that passive procrastinators have received more negative feedback from past failures, which contributed to their lower career self-efficacy, whereas proactivators have had more positive reinforcement from past accomplishments, which contributed to higher career self-efficacy, then these findings are congruent with Bandura's (1977) Self-Efficacy theory.

The expected positive relation between trait active procrastination and career self-efficacy (**H6b**) is not supported in either cross-sectional or time-lagged tests. This means that the tendency

of active procrastination was not related to career self-efficacy in this study. This finding is inconsistent with past research on active procrastination, which has found that people who are high on trait active procrastination have better academic performance ($r = .25$, $p<.01$; Kim & Seo, 2015), which should be a positive reinforcement to self-efficacy. I cannot come up with an explanation for this and it needs further investigation.

H7 stated that career self-efficacy is negatively related to transition procrastination behaviors. This hypothesis is supported by all tests. Consistent with past literature, people tended to delay on their goal achieving actions when they had low confidence in their careers, possibly because of the fear of failure (Bańka and Hauziński, 2015; Heckhausen and Schulz, 1995; Watson, 2001) and individuals seem to have engaged in less delaying when they were more confident in their chances of succeeding.

I further proposed in **H8** that career self-efficacy mediates or intervenes in the relations between traits (passive procrastination, active procrastination, proactivity) and transition procrastination behaviors. My results partially support the notion that career self-efficacy mediates the positive relation between trait passive procrastination (**H8a**) and procrastination behaviors, which was significant in time-lagged tests but not significant in the T1 cross-sectional test. The negative relation between trait proactivity and procrastination behaviors (**H8c**) was significant in all tests. Based on these findings, people with high trait passive procrastination have lower career self-efficacy than those who have low trait passive procrastination; similarly, people who score high on trait proactivity have higher career self-efficacy, and higher self-efficacy is associated with being less likely to engage in career procrastination behaviors. These findings are consistent with the Temporal Motivational Theory (Steel & König, 2006), which states that individual motivation should be increased when individuals have a positive perception regarding the probability that a goal can be reached (high self-efficacy level) and decreased when they have a negative perception of the probability of goal attainment.

The intervening role of career self-efficacy proposed in **H8b** in the relation between trait active

procrastination and transition procrastination behaviors is not supported by the data in any test. Therefore, career self-efficacy does not seem to explain why active procrastinators engage more in procrastination behaviors.

H9 stated that career self-efficacy is positively related to resources and negatively related to constraints. This hypothesis was supported by the data in all tests. More specifically, I found that developmental resources are positively associated with career self-efficacy (consistent with **H9a**), whereas developmental constraints are negatively related to career self-efficacy (consistent with **H9b**). These findings are in line with past studies arguing that resources helped establish high self-efficacy and decreased fear of failure (Trope & Liberman, 2010) and that career barriers decreased individuals' self-efficacy (Lent et al., 2000). The presence of more resources for career development from both the organization and the particular profession, such as training, counselling service, transferring/promotion opportunities, and networking events, contributes to higher perception of personal capabilities when approaching the career transition process. In contrast, constraints, such as discrimination and insufficient training are likely to make employees feel less capable in achieving their career goals.

H10 stated that career self-efficacy mediates the relations between environmental factors (resources and constraints) and transition procrastination behaviors. The results support the notion that career self-efficacy mediates the negative relation between resources and procrastination behaviors (**H10a**) and positive relation between constraints and procrastination behaviors (**H10b**). Based on these findings, people with more constraints in their working environment are less self-efficacious concerning the pursuit of their career goals than those who have more resources and, therefore, are more likely to engage in career procrastination behaviors. All these results for resources and constraints are consistent with the Extended Model of Action Phases which argues that people are in a better position to take action to take action when there are more resources and less constraints.

STRENGTHS AND LIMITATIONS

The present research is strong in many ways. First, I combined the investigation of procrastination at both trait and behavioral levels and the two dimensions of passive and active procrastination in one inquiry. This is novel in the study of procrastination and I replicated my results in two studies. My results suggest that trait procrastination and procrastination behaviour are separate constructs and that passive and active procrastination are different only at trait level. This adds insights to the discussion of procrastination through direct investigation and comparison between trait procrastination and procrastination behaviour, and between passive and active procrastination. Second, I collected two waves of data in the main study, reducing mood biases that exist in the cross-sectional examination of mediation relations and allowing for some time-lagged tests of the hypotheses. Third, I had a reasonably sized sample in the main study, that was comprised of individuals who were employed in real work contexts with a wide range of age (25-45) and industry (20); thus, even though the sample was a convenience sample, I am cautiously optimistic that my results may generalize to the broader population of working individuals who may be considering the transition from worker to manager.

Nonetheless, there are several limitations of this study that should be noted. First of all, the present study only managed to have a limited time interval of four weeks between the two waves of data collection. This time lag may be too short to capture substantial changes among variables and may limit the extent to which I could capture the causal processes that unfold over time (Cole & Maxwell, 2003). This could be especially problematic given that moving from worker to manager is something that may take a long time, and many individuals can stay in the "worker" role for years before being promoted to a managerial position. Thus, one month may not be long enough to see changes in procrastination behaviours. Further, Cole and Maxwell (2003) suggested that without at least three waves of data, the stationarity assumption may not be tested, and this casts further doubt on causal conclusions.

Another issue concerns possible biases in the investigation of causal relations in a correlational rather than experimental design. In this study, most of the variables (e.g., traits) are not open to manipulation and it would be very difficult to create an experimental working environment that manipulated developmental resources and constraints in a way that is similar to reality. Thus, a true experiment was not feasible given the research question. Related to the problem of using a correlational design, the time referent of procrastination behaviors was in the past and this was different from the time referent for the other variables, which asked about participants' current situation. This decision was made to create more separation between procrastination traits and behaviors in the surveys, by using distinctive stems for the questions. I used past-tensed statements like "How often did you..." to measure behaviors with a frequency response scale, and present-tense statements like "I usually..." to measure traits with a 5-point Likert scale. The asymmetric time referent could raise an issue because it is hard to accurately predict past behaviors (e.g., procrastination behaviors during the last few months) from what is going on now (e.g., self-efficacy at this moment), and this may cast doubt on conclusions from cross-sectional tests of (past) procrastination behaviours. It is also possible that people's transition behaviors in the past affect how they feel now, as opposed to the other way around in our hypotheses. Overall, the correlational nature of the design is a limit for drawing causal conclusions, but I did have time-lagged data and I based my hypotheses on a strong theoretical rationale.

Another potential limitation of this research is that all data were gathered from a single source: self-reports. The use of a single source can lead to common method biases, such as contamination due to response styles (Conway & Lance, 2010). Even though self-reports could potentially pose a threat, I believe it is a reliable method for the current study, which was about personality tendencies, self-related beliefs, and behaviors, factors that nobody knows better than themselves. Because of this, I think that individuals can provide accurate self-ratings on these issues. We tried to mitigate negative effects due to a single data source with some procedural remedies, such as having different response scales in different parts of the survey and separating the measurement of

different constructs into different parts of the survey (Podsakoff, MacKenzie, & Podsakoff, 2012). We also used previously published measures that have demonstrated construct validity. Further, the inclusion of two points of data collection can limit mood biases which may result from cross-sectional data collection from a single source and does avoid some possible biases that exist in the cross-sectional examination of mediation hypotheses. This is especially true when predictors and mediators are relatively stable, and the mediations are mostly partial effects, as was the case in this study, although it is still insufficient to rule out all possible alternative causal pathways (Maxwell & Cole, 2007). Further in order to test the possible impact of contamination due to mood, I measured state positive and negative affect in both surveys. As shown in Table 7, there were numerous variables in my theoretical model that were not related to mood; specifically, negative affect at T1 and T2 was not related to trait proactivity or resources at T1 and T2 respectively and positive affect at T1 was not related to trait active procrastination, constraints and procrastination behaviors at T1; also positive affect at T2 was not related to constraints and procrastination behaviour at T2. Thus, I do not believe that mood was unduly contaminating all measures in the surveys.

Still, I did observe that negative affect from T2 was correlated with other variables from T2, including resources, constraints, career self-efficacy, subjective temporal proximity and transition procrastination behaviors, while positive affect positively correlated with resources, career self-efficacy and subjective temporal proximity but not with constraints and procrastination behaviors and these patterns were the same through T1 and T2. One possible explanation of these correlations is that reports of negative affect may have accumulated after participants were asked about their career transition processes, especially when their situations were not very promising. Given that negative affect was measured at the end of the survey, it is possible that individuals who reported high constraints, low resources, and low career self-efficacy may have been feeling negative by the time they reached the end of the survey, although it is not clear why the same pattern of relations was not observed at T1. In retrospect, it may have been better to place the state affect

measure at the beginning of the survey so that it would not be affected by responses to the other variables. This could be improved in future research. Overall, I do not believe that results of the present study are unduly influenced by method bias due to gathering data from a single source.

A final limitation of this research is that I was unable to verify how close or far participants' transition to manager was in reality. I attempted to explore this with a measure of normative/objective temporal proximity, but the measure was problematic (e.g., many participants did not respond) and I was unable to verify actual time left before the transition to manager would occur. This is important because the patterns of expected procrastination behaviors may follow a curvilinear rather than a linear trajectory because, most of the time, the subjective temporal proximity of (passive) procrastinators does not equal the objective temporal proximity (Bashir et al., 2014; Lay & Schouwenburg, 1993; Zauberman et al., 2009). I was interested in the relationship between subjective and objective timeline and its possible impact on people's behaviors, so I included one question asking about the normative advancing time, as well as the duration they spent in the particular line of work to calculate the actual time left for the career transition to happen. However, because many participants possessed more than one job, and I did not ask for their prioritized choice of job as the main direction in their future career, those participants may have been unsure as to which job should be considered when answering this question. Plus, the normative advancing time could be stable in a profession, but flexible among different organizations. Therefore, I did not have enough information to measure the objective temporal proximity.

MANAGERIAL IMPLICATIONS

The main finding of the present study is that both personality and situational factors are related to employees' behaviors in their career transition process and these relations can be explained, at least in part, by career self-efficacy and subjective temporal proximity. Passive and active procrastinators engage in more procrastination behaviors, whereas trait proactivity does not seem

to be an important factor that relates to procrastination behaviors in the career transition context. In addition to this innate tendency to postpone things, organizations and the industry also play an important role in creating a positive and encouraging environment for employees to advance in their career development.

Based on my results, personality is an important factor to consider concerning employees' career transition behaviors. Personality is known to be a reliable predictor of behavior, and this is also true for career self-development. The current study provides more data to support this notion. This suggests that organizations can increase their awareness of employees' natural tendencies when it comes to career development, which would matter more for companies with a policy of promoting from within. Institutions can provide various supports according to employees' different personalities to best encourage them to advance in the career and to assist them to enter and successfully get through the transition process.

Employees' perceptions of supports and barriers embedded in organizations and industries also have assignable impacts on their behaviors. According to social cognitive career theory (SCCT; Lent, Brown, & Hackett, 1994), working environments with more resources and less constraints will contribute to higher career self-efficacy and encourage employees to ascend the career ladder. Less desirable career opportunities will lead to negative job attitudes, low job satisfaction and productivity, and turnover, which are associated with high costs. Therefore, in order to retain career-oriented employees and to promote general job motivation, organizations should try to spend more for developmental activities and resources such as training classes, enhancing leader-member exchange, career mentoring and consulting, job transferring opportunities, and social capital in the form of networking activities (Lent et al., 1994; Seibert et al., 2001), especially if they value promotion from within. On the other hand, events or conditions that make career progress difficult should be reduced. Organizations should actively investigate if there are constraints like biases in developmental opportunities and resources, discrimination based on personal characteristics, and information immobility, and come up with barrier-coping

interventions such as eliminating or reframing potential barriers (Lent et al., 2000; Lent et al., 2003; Murtagh et al., 2007).

Considering the effect size of each proposed predictor, personality turned out to be the most influential factor, followed by constraints, which was also a powerful predictor of employees' transition procrastination behaviors. Surprisingly, resources accounted for the smallest amount of variance in procrastination behaviors, although it was still a statistically significant predictor. This provides useful insights for organizations and industries that compared to expanding on resources, perhaps eliminating constraints would be more helpful in creating a positive and encouraging environment for employees to advance in their careers.

Another recommendation would be for employees to increase their awareness of how time perceptions may affect their approaches to career development. As mentioned earlier, passive procrastinators suffer from poor sense and control of time, as well as inferior self-regulation ability (Costa & McCrae, 1995; Schouwenburg, 2004). The present study also suggests that subjective temporal proximity is related to procrastination behaviors. Therefore, individuals can benefit from being more aware of how their sense of time affects their actions. At the organizational or industrial level, it would also be helpful to have various developmental supports, such as considering time more explicitly or recommending advancement timelines during career planning.

DIRECTIONS FOR FUTURE STUDY

Several avenues for future research are provided here. Firstly, the present study failed to separate passive procrastination behaviors from active procrastination behaviors. Even though past studies have investigated passive and active procrastination traits separately, no study, to my knowledge ever investigated both passive and active procrastination or discussed the trait and behavioral levels at the same time. Therefore, there is a question mark as to whether passive procrastination is fundamentally distinct from active procrastination, or whether they are part of a single continuum. Future research should continue to examine and compare the two dimensions of

procrastination together to confirm if they are separate constructs and at what level (e.g., trait versus behavior) they are different from each other.

Second, in the current proposed model, personality and situational factors were proposed to influence procrastination behaviors in parallel. There are other perspectives that suggest an interactive effect between personality and situational factors (the interactionist perspective, Tett & Burnett, 2003). For example, Tett and Burnett (2003) proposed a personality trait-based model of job performance where situational features like task facilitators and constraints at social and organizational levels work as moderators in the relation between personality and job performance. In this study, I did not test the possibilities of situational factors interacting with personality variables. Future research can address this possibility when investigating both personality and situational factors at the same time.

Thirdly, although the current research found that people with trait active procrastination are likely to engage more in procrastination behaviors, the two mediators proposed in this study did not explain this positive relation. The concept of active procrastination is rather new in the field and it is worth exploring its underlying mechanisms. As mentioned earlier, past studies indicated that active procrastination was mostly associated with positive outcomes as opposed to passive procrastination (Kim & Seo, 2015). Thus, active procrastination seems to work more like a time management skill instead of a time control failure. The present study did not incorporate consequences of procrastination, which could be included in future research to extend this model and examine its legitimacy as a beneficial way to help people allocate time resources more efficiently.

A fourth possible direction for future research is to look at the working mechanism of trait proactivity on procrastination behaviors more closely. As indicated by the current study results, trait proactivity has no total effects on procrastination behaviors due to the offsetting of the positive direct effects and the negative indirect effects through career self-efficacy and subjective temporal proximity. As noted in previous parts, people who score high on trait proactivity usually have high

motivation levels, like to prepare, and generally take actions way ahead of deadlines, which is the opposite of procrastination behaviors. Thus, the positive effect of trait proactivity on procrastination may pass through some other mechanisms, which need further investigation.

Another suggestion for future research is to study both subjective and objective timelines together given that time perception is critical in the study of procrastination. It would be beneficial to have a closer investigation of the relation between the two time perspectives and their impact on procrastination behaviors. As discussed earlier in this study and in the literature, procrastinators usually follow a pattern of coping behaviors across time when approaching an event or deadline. It would be useful to examine the time perspectives with a longitudinal research design. Also, subjective temporal proximity was found to have significant relations with situational factors, which was not expected, and this worth further examination.

Other notes for future procrastination study would be on the research method. In order to better examine the causal relationships, longer time intervals and more waves of data collection are suggested to allow enough time for various factors to generate impacts on procrastination behaviors. It would be even better to test several different time intervals to better understand when, and for how long, personality and situational factors have an impact on procrastination behaviors. Multiple sources of data will also be helpful to reduce response-style biases and to better measure behaviors from different perspectives.

CONCLUSION

As our life is enriched and faster than ever, procrastination has received more and more attention in the academic and working domains. This study intended to explore predictors of employees' procrastination behaviors when approaching the transition from worker to manager. I found that both personality and situational factors are helpful in explaining individuals' transition procrastination behaviors so that people with trait passive or active procrastination, as well as those who are provided with less resources and more constraints, are more likely to procrastinate when

approaching their career transition than those who are non-procrastinators and those who are provided with more resources and less constraints. Moreover, the relations between personality, situational factors and procrastination behaviors are partly mediated by career self-efficacy and subjective temporal proximity. However, neither of these mediators explained the link between trait active procrastination and procrastination behaviors. The current study enriches the literature on procrastination by extending procrastination research in a work context, examining the influence of personality traits in conjunction with situational factors, studying both passive and active sides of procrastination and adding insights about the working mechanisms. Organizations can benefit from providing more career development resources and reducing potential constraints to career development. Individuals can avoid delaying when they approach the transition from worker to manager by taking steps to increase their career self-efficacy and paying more attention to their temporal perceptions related to career development.

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Appendix 1

Trait Passive Procrastination

Selected 7 items from Lay's General Procrastination Scale (GP, Lay, 1986)

Responses are indicated on 5-point Likert scales.

*Reversed coded.

1. Even with tasks that require little else except sitting down and doing them, I rarely get them done right away.
2. *I usually make decisions as soon as possible.
3. *I usually accomplish all the things I plan to do by the time I plan to do them.
4. I generally delay before starting on work I have to do.
5. I am continually saying "I'll do it tomorrow."
6. In preparing for some deadline, I often waste time by doing other things.
7. *I often finish things I have to do sooner than necessary.

Note. Item 2 was excluded for pilot data analysis.

Trait Active Procrastination

Selected 8 items from The Active Procrastination Scale (AP, Choi & Moran, 2009)

Responses are indicated on 5-point Likert scales.

*Reversed coded.

1. In order to make better use of my time, I intentionally put off some tasks.
2. *I feel tense and cannot concentrate when there is too much pressure on me to meet a deadline.
3. *If I put things off until the last moment, I tend to be dissatisfied with their outcomes.
4. *I often fail to meet deadlines that I set for myself.
5. I am usually happier with the way things turn out when I have to rush to get them done.
6. I work better when I have to rush to meet a deadline.
7. I intentionally put off work to maximize my motivation.
8. I often run late, but I always get things done.

Note. Items 2 and 3 were excluded for pilot data analysis; items 2, 3, 4 were excluded for main data analysis.

Trait Proactivity

The Proactive Personality Scale (PPS, Seibert, Crant, & Kraimer, 1999; 10 items version)

Responses are indicated on 5-point Likert scales.

*Reversed coded.

1. I am constantly on the lookout for new ways to improve my life.
2. Whenever I have been, I have been a powerful force for constructive change.
3. Nothing is more exciting than seeing my ideas turn into reality.
4. If I see something I don't like, I fix it.
5. No matter what the odds, if I believe in something I will make it happen.
6. I love being a champion for my ideas, even against others' opposition.
7. I excel at identifying opportunities.
8. I am always looking for better ways to do things.
9. If I believe in an idea, no obstacle will prevent me from making it happen.
10. I can spot a good opportunity long before others can.

Organizational and/or industrial Resources

The Perceived Investment in Employees' Development (PIED, Lee & Bruvold, 2003; 9 items)

Responses are indicated on 5-point Likert scales.

1. My organization trains employees on skills that prepare them for future jobs and career development.
2. My organization provides career counselling and planning assistance to employees.
3. My organization allows employees to have the time to learn new skills that prepare them for future jobs.
4. My organization provides support when employees decide to obtain ongoing training.
5. My organization is receptive to employees' requests for transfers to another department.
6. My organization provides employees with information on the availability of job openings inside the organization.

Opportunities

1. My organization has a policy to promote from within.
2. There are associations in my profession that can help me advance in my career.
3. There are networking events or conferences in my profession that allow me to communicate with people outside my organization.
4. It's easy to move from one organization to another in my line of work.

Organizational and/or industrial Constraints

Items inspired by The Career Barriers Inventory (CBI, Swanson, Daniels, & Tokar, 1996)

Responses are indicated on 5-point Likert scales.

1. Conflicts between my work and family make it difficult for me to advance in my career.
2. My organization ignores sexual harassment in the workplace.
3. My organization discriminates on the basis of race, ethnicity, or culture during the process of job promotion.
4. Having a non-traditional career gets me little support for my career development.
5. There is discrimination in my profession against people with my demographic characteristics (e.g., race, ethnicity, disability, sexual orientation, etc.).
6. My family is not supportive when it comes to my career choices.
7. My organization provides insufficient training to individuals who are promoted to managerial positions.
8. I have disabilities that affect my choices for advancing in my career.
9. There is little demand in the labor market for people with my skills and training.
10. There is a lack of opportunity to network with those who are at a higher level in my line of work.

Career Self-Efficacy

Adapted 6 items from The Occupational Self-Efficacy Scale (Schyns & Collani, 2002)

Responses are indicated on 5-point scales.

*Reversed coded.

1. When I make plans concerning my future at work, I can make them happen.
2. When I set goals for myself in my career, I believe I can achieve them.
3. *I avoid trying to move forward in my career if it looks too difficult for me.
4. *I feel insecure about my professional abilities.
5. I am confident that I could deal efficiently with unexpected events in my career.
6. No matter what comes my way in my career, I'm usually able to handle it.

Subjective Temporal Proximity

1. A timeline with 5 points on it will be provided. Participants are asked about how far they feel the goal of becoming a manager is and are given points on the timeline. Ratings for this scale range from "1" representing "extremely far away" to "5" representing "very soon". (Peetz et al., 2009)

Selected items of "Remaining time" from Occupational Future Time Perspective (OFTP, Zacher & Frese, 2009; 10 items)

Responses are indicated on 5-point scales.

*Reversed coded.

2. There is plenty of time left before I advance to the next level in my career to make new plans.
3. Most of the time before I advance to the next level in my career lies ahead of me.
4. The time left to advance in my career seems infinite to me.
5. * I have the sense that the time left to advance in my career is running out.
6. * As I get older, I begin to experience the time left to advance in my career as limited.

Note. Item 1 was excluded for main data analysis.

Transition Procrastination Behavior

Responses are indicated on 5-point frequency scales.

*Reversed coded.

How often did you...

1. …*follow a plan of action to advance in your career?
2. …delay making tough decisions about advancing in your career?
3. …put off doing things that would help you get a promotion at work?
4. …manage to find excuses for not doing anything to get a promotion at work?
5. …waste time rather than trying to advance in your career?
6. …promise yourself that you would do something to advance in your career, but then delay taking action?
7. … deliberately postpone activities that would help you to advance in your career in order to use your time more efficiently?
8. …feel that your efforts to advance at work were benefitting because you were racing to meet a deadline for promotion?
9. …feel that you would prefer to have a deadline by which you had to get promoted at work?
10. …wait until the last minute to do things to get a promotion at work, but still get them done on time?
11. …*think that you would be more likely to get a promotion at work because you were starting to work on it at a slower pace and long before it was going to happen?
12. …*feel that time pressure to advance in your career was making you upset and reluctant to act?
13. … purposely wait until the last minute to do what it would take to get a promotion at work?
14. …*struggle to finish activities that you had started to help you advance in your career?

Note. Items 1 to 6 were adapted from **The Tuckman Procrastination Scale (TPS, Tuckman, 1991)**. Items 7 to 14 were adapted 8 from **The Active Procrastination Scale (AP, Choi & Moran, 2009)**. Items 1, 7, 8,11,13 were excluded for main data analysis.

Participants responded to these items in reference to a period of time that corresponded to roughly the past 5-6 months.

Conscientiousness

Factor "Conscientiousness" from Big-Five Factor Markers (Goldberg, 1992; 20 items version)

Responses are indicated on 5-point scales.

*Reversed coded.

1. I am always prepared.
2. I pay attention to details.
3. I like things being ordered.
4. I like following a schedule.
5. I am precise in my work.
6. I continue until everything is perfect.

Openness to Experience

Factor "Openness to Experience" from NEO Personality Inventory (NEO-PI, Costa & McCrae, 1992; 10 items version)

Responses are indicated on 5-point scales.

*Reversed coded.

1. I believe in the importance of art.
2. I have a vivid imagination.
3. I carry the conversation to a higher level.
4. I enjoy hearing new ideas.
5. *I have little interest in abstract ideas.
6. I get excited by new ideas.