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Three Essays on Refining the Challenge and Hindrance Stressors Framework

Mihaela Dimitrova

University of Wisconsin-Milwaukee

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**THREE ESSAYS ON REFINING THE CHALLENGE AND HINDRANCE
STRESSORS FRAMEWORK**

by

Mihaela Dimitrova

**A Dissertation Submitted in
Partial Fulfillment of the
Requirements of the Degree of**

**Doctor of Philosophy
in Management Science**

at

**The University of Wisconsin-Milwaukee
May 2014**

ABSTRACT
THREE ESSAYS ON REFINING THE CHALLENGE AND HINDRANCE
STRESSORS FRAMEWORK

by

Mihaela Dimitrova

The University of Wisconsin-Milwaukee, 2014
Under the Supervision of Professor Dr. Margaret Shaffer

Job demands, or stressors, are viewed as “physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort” (Bakker & Demerouti, 2007) and are traditionally seen as detrimental due to their influence on stress. However, recent advancements suggest that, despite their effect on stress, some demands (*i.e.*, challenge demands) could be instrumental in achieving valued personal and job outcomes, while others (*i.e.*, hindrance demands) would have purely deleterious effects (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Based on this challenge and hindrance stressors framework, scholars have found differentiated effects of demands in relation to outcomes such as job performance, job satisfaction, and turnover (*e.g.*, LePine, Podsakoff, & LePine, 2005; Podsakoff, LePine, & LePine, 2007).

Despite the extensive contribution of the challenge and hindrance stressors framework, the notion that some demands can be beneficial is relatively recent and more research is needed to fully elucidate the nature of stressors. Thus the first purpose of this three-essay dissertation is to identify the important questions that still need to be answered in regard to job demands. The second goal is to examine some of the most pressing issues and begin to refine the challenge and hindrance stressors framework.

The first essay represents a comprehensive review of research on job demands. I focus on clarifying specific rather than composite job demands that differ in terms of the extent to which they are deleterious and beneficial in association with desirable work outcomes. While some job demands are clearly deleterious or beneficial, several demands emerged as having mixed effects on work outcomes. That is, this ‘middle of the continuum’ group of job demands tends to have contradictory effects across various studies. To understand these variations in empirical findings, I look at the role of contextual and personal contingencies.

The second study is focused on the short-term daily effects of job demands and the interplay between anticipated and unanticipated stressors to examine the daily situational context within which demands occur. Based on Mandler's (1975) theory of interruptions I suggest that unanticipated demands in an already challenging situation would be seen as detrimental by employees despite the fact that in normal circumstances some of these demands would be seen as beneficial. To empirically examine this, I use a daily diary study approach. The results, however, do not find strong support for Mandler's (1975) theory.

The purpose of the third essay is to expand the challenge and hindrance stressors framework to the context of global employees, in particular to better understand the experiences of international business travelers (IBTs). Drawing on an integration of role theory (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Katz & Kahn, 1978) and the challenge and hindrance stressors framework I propose and test a theoretical model where IBTs' adjustment and subsequent career satisfaction is affected positively or negatively, depending on the types of demands experienced as part of IBTs' participation in work

and family roles. Through conducting a two-wave study of IBTs, I find general support for the proposed model of the differentiated effects of work and family challenge and hindrance demands on IBTs' adjustment and career satisfaction . The work role, however, was ultimately found to have a stronger influence on IBTs' subsequent career satisfaction than the family role.

Since stressors are a vital part of employees' experiences and an essential building block of management theories, it is necessary to better understand their nature and effects. This dissertation contributes to the literature by (1) offering a clear synthesis of the differentiated effects of work demands, (2) contributing to our understanding of how demands influence employees on a day-to-day basis, and (3) elucidating the effects of work and family demands in the context of international business travel.

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DEDICATION

I dedicate this dissertation to my mother, Margarita, who despite being on the other side of the world, has been by my side supporting me through this journey and in challenging times, always providing me the unconditional love I needed to press forward.

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**CHAPTER 1: DIFFERENTIATING THE EFFECTS OF SPECIFIC JOB
DEMANDS ON DESIRABLE WORK OUTCOMES**

Job demands, or stressors, are viewed as “physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort” (Bakker & Demerouti, 2007). Traditionally, job demands that employees face in their daily work have been viewed as taxing, resulting in detrimental effects on employees' attitudes and behaviors. However, scholars have long suggested that while demands are straining, some may have motivational and thus beneficial effects (e.g., Seley, 1976). This distinction prompted Cavanaugh and colleagues (2000) to create a two-dimensional framework that distinguishes between two types of stressors that have opposite effects on desirable work outcomes. According to this framework, hindrance demands, such as hassles, red tape, politics, role conflict, and role ambiguity, will be deleterious to achieving valued goals and personal and career growth. On the other hand, challenge demands, such as workload, time pressure, role responsibility, and task complexity, will facilitate goal attainment and personal and career growth.

While both hindrance and challenge demands are seen as increasing strain and stress, the two types of demands differ in terms of their motivational qualities (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Hindrance demands are associated with low motivation; employees are less likely to believe that their efforts will help them meet the obstacles, and even if they do succeed in overcoming them, they may perceive that they will not reach a valuable outcome. In contrast, challenge demands are considered to be motivational since employees are more likely to believe that they can successfully cope with such demands and, if they meet these demands, they will achieve desired outcomes. Using this framework, researchers have reexamined

previously inconsistent relationships between job demands and performance (LePine, Podsakoff, & LePine, 2005; Webster et al., 2010), job satisfaction (Cavanaugh et al., 2000), organizational commitment (Podsakoff, LePine, & LePine, 2007), learning motivation (LePine, LePine & Jackson, 2004), engagement (Crawford, LePine, & Rich, 2010), and citizenship behaviors (Rodell & Judge, 2009; Webster et al., 2010). The results of these studies generally support differentiated relationships with various work outcomes: hindrance demands adversely affect desirable employee attitudes and behaviors while challenge demands are beneficial. Exceptions to this, however, are studies that failed to find a relationship between challenge stressors and safety compliance (Clarke, 2012), leader-member exchange and work-family facilitation (Culbertson, Huffman, & Alden-Anderson, 2009), and initial expatriate adjustment (Firth, Chen, Kirkman, & Kim, 2013).

Unlike research on the deleterious effects of demands on strain and stress, where a unified research stream has been more or less achieved (for review see: Ganster & Rosen, 2013), the literature on the "positive side" of job demands has been deeply fragmented. Some scholars maintain that job demands are detrimental, but certain conditions exist (e.g., social support, job control, etc.) that stimulate their motivational properties (Bakker & Demerouti, 2007; Karasek, 1979). Other scholars have suggested that it is the type of demand that determines whether or not beneficial effects will accrue (Cavanaugh et al., 2000). While these different perspectives are all based on sound theoretical arguments, this fragmentation does not provide clarity for how demands should be viewed in future studies. This lack of clarity has led to confusion, evident by studies where the same

demand (i.e., time pressure) has been hypothesized as deleterious (Beck & Schmidt, 2012), beneficial in certain contexts only (e.g., abundant social support, job control, etc.) (Rubino, Perry, Milam, Spitzmueller, & Zapf, 2012), and positive regardless of the context (Pearsall, Ellis, & Stein, 2009).

Inconsistencies in the operationalization of demands have further obscured our ability to distinguish among job demands. Although Cavanaugh et al. (2000) developed composite scales to assess hindrance and challenge stressors, researchers, including those who have conducted meta-analyses, have often modified these scales by either omitting certain demands and/or including other demands (e.g., Clarke, 2011; Crawford et al., 2010; Rodell & Judge, 2009). Also, despite the recognition that different demands have different motivational properties, with some eliciting positive effects on desired work behaviors and others resulting in negative outcomes, some researchers have continued to use an overall measure of job stressors that includes both hindrance and challenge demands. This has resulted in contradictory findings with respect to the effects of job demands on job satisfaction (e.g., Rydstedt, Ferrie, & Head, 2006), motivation (e.g., Van Yperen & Hagedoorn, 2003), and learning (e.g., Taris, Kompier, Geurts, Houtman, & Heuvel, 2009). Given this confusion surrounding the categorization and operationalization of demands, especially those that are considered to have beneficial effects on desired work outcomes, we believe that it is time to step back and assess the empirical results of studies using specific individual demands rather than composite measures.

In reviewing the literature on the effects of *specific* job demands on desirable employee outcomes, we have pondered several questions. Can all demands be classified as ‘beneficial’ or ‘deleterious’? Is it only the nature of demands that determines their positive effect or do contextual and personal factors play a role? Insofar as stressors are a vital part of employees' experiences and an essential building block of management theories, it is necessary to have clarity about their effects. Thus, the purpose of this review is to address the questions we just posed and provide guidelines for when and why demands contribute positively to desirable employee outcomes. We achieve this by first examining the direct relationships between specific, rather than composite, job demands and desirable work outcomes. Next, we review the relevant contextual factors that may influence the relationship between job demands and work outcomes. Finally, we offer directions for future research, highlighting the importance of examining individual job demands, classification problems, consideration of job outcome differences, differentiated influence among demand types, and contextual and personal influences. By providing clarity in regards to the relationship between job demands and desirable work outcomes, we aim to create a better platform from which future research can advance in a more unified and consistent manner.

Selection of Articles for the Review

The peer-reviewed journal articles for this review were selected through a comprehensive search in databases such as PsychInfo and AbiInform. After we searched for articles containing the keyword "job demands", we conducted an additional search on specific job demands (e.g., situational constraints, role conflict, etc.). In selecting the

articles, we focused on the ones that did not include only strain related outcomes (e.g., burnout, stress, etc.) but instead examined desirable employee *job* outcomes (i.e., attitudinal and behavioral) such as job satisfaction, organizational commitment, work engagement, job satisfaction, performance, and creativity. We only considered studies where relationships between demands and positive job outcomes were explicitly tested and excluded studies where demands were related to third variables and these third variables instead were related to the outcome, unless mediation was examined. This search resulted in 67 articles for this review.

Summary of Empirical Findings

In our comprehensive review of the literature, we focused on examining the effects of specific job demands and any distinguishing features that may lead to differentiated effects on desirable work outcomes. Consistent with the challenge and hindrance stressors framework (e.g., Cavanaugh et al., 2000), certain demands (e.g., role ambiguity, role conflict) emerged as mainly deleterious while others (e.g., responsibility, complexity) were primarily beneficial in their relationships with desirable work outcomes. Within each of these categories, we noted that some demands had stronger and more stable influences than others (e.g., role ambiguity vs. role conflict). We also identified certain demands (e.g., time pressure, workload) that exhibited mixed effects, fluctuating in their positive and negative effects across studies. Therefore, instead of classifying job demands within a two-dimensional hindrance and challenge framework, we suggest that they be mapped along a *continuum* from deleterious to beneficial.

To further elucidate when job demands contribute favorably to desirable work outcomes, we consider the role of contextual and personal contingencies. The importance of context has been emphasized by management scholars (e.g., Johns, 2001) as a strong factor in determining the direction and strength of relationships between constructs of interest. Based on Johns (2006), context here represents opportunities and constraints that affect the relationship between job demands and desirable work outcomes. Johns (2006) delineates between *omnibus* (i.e., broader environmental influences) and *discreet* (i.e., particular situational influences) contexts, and we use this classification to organize our review on the relevant contextual influences. In addition, we examine the role of personal contingencies as discussed in job demand studies.

Figure 1 represents the organizing framework for this review, where job demands are depicted on a continuum ranging from deleterious to beneficial. The effects of these demands on desirable work outcomes depend on various contextual and personal contingencies. Following this framework, we provide an integrated review of the effects of job demands on desirable work outcomes. We first discuss the influences of beneficial, deleterious, and mixed-effect job demands on desirable behavioral and attitudinal work outcomes (see Table 1 for a summary of reviewed articles). Next, we examine the roles of context and personal contingencies.

Figure 1
Organizing Framework

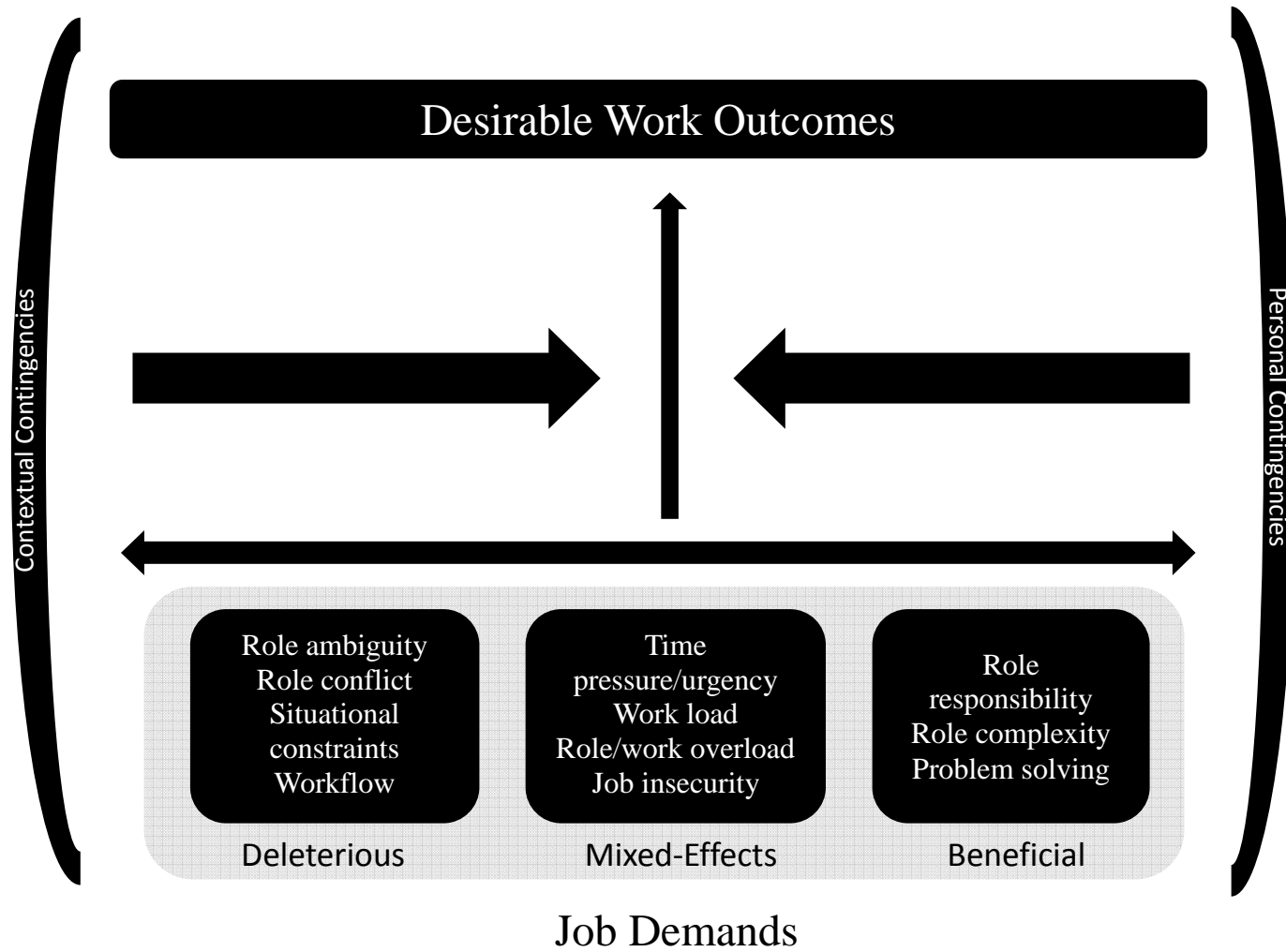


Table 1
Effects of Demands on Employee Behaviors

<u>Demands</u>	<u>Effect</u>	<u>Performance /Productivity</u>	<u>OCB</u>	<u>Creativity</u>	<u>Positive Work Outcomes</u>		<u>Engagement</u>	<u>Job/Career Satisfaction</u>	<u>Commitment</u>
					<u>Learning</u>	<u>Proactive Behavior</u>			
Responsibility	+	Schaubroeck & Fink (1998)	Schaubroeck & Fink (1998)					Schaubroeck & Fink (1998)	Richardsen et al., (2006) Schaubroeck & Fink (1998)
	-								
	ns						Richardsen et al., (2006)	Webster et al., (2011)	
Knowledge demands (e.g., complexity, problem solving, cognitive)	+	Pepinsky et al., (1960)			Daniels et al., (2009) van de Ven et al., (2008)			Ito & Brotheridge (2012) Morgeson & Humphrey (2006)	
	-								
	ns				De Jonge & Dormann (2006)			Dwyer & Ganster (1991) Jex et al., (2002) Schmitt et al., (2012)	
Interruptions	+								
	-	Baethge & Rigotti (2013)							
	ns	Zijlstra et al., (1999)							

<u>Demands</u>	<u>Positive Work Outcomes</u>								
	<u>Effect</u>	<u>Performance /Productivity</u>	<u>OCB</u>	<u>Creativity</u>	<u>Learning</u>	<u>Proactive Behavior</u>	<u>Engagement</u>	<u>Job/Career Satisfaction</u>	<u>Commitment</u>
Situational constraints	+					Fritz & Sonnentag (2009)			
	-	Adkins & Naumann (2001) Gilboa et al., (2008) Klein & Kim (1998) O'Connor et al., (1984) Spector et al., (1988) Steel et al., (1986)		Binnewies & Wörnlein (2011)			Nahrgang et al., 2011	O'Connor et al., (1984) Nielsen et al., 2011 Spector et al., (1988) Yang et al., (2012)	
	ns		Jex et al., (2003)						
Conflict	+								
	-	Bernardin (1979) Fried et al., (1998) Gilboa et al., (2008); Schaubroeck & Fink (1998) Sliter et al., (2011)	Eatough et al (2011) Schaubroeck & Fink (1998)					Brief & Aldag (1976) Eatough et al (2011) Jex et al., (2002) Rodríguez et al., (2001) Sargent & Terry (1998) Schaubroeck	

<u>Demands</u>	<u>Effect</u>	Performance /Productivity	OCB	Creativity	<u>Positive Work Outcomes</u>				
					Learning	Proactive Behavior	Engagement	Job/Career Satisfaction	Commitment
								& Fink (1998) Spector et al., (1988) Webster et al., (2011)	
	ns	Brief & Aldag (1976) Pierce et al., (1993) Sargent & Terry (1998) Spector et al., (1988); Tubre & Collins (2000)	Jex et al., (2003)				Richardson et al., (2006)	Ito & Brotheridge (2012)	Richardson et al., (2006) Schaubroeck & Fink (1998)
Role ambiguity	+								
	-	Bernardin (1979) Brief & Aldag (1976) Fried et al., (1998) Gilboa et al., (2008) Kalbers & Cenker (2008) Pearsall et al.,	Schaubroeck & Fink (1998)				Rubino et al., (2012)	Eatough et al (2011) Ito & Brotheridge (2012) Rubino et al., (2012) Schaubroeck & Fink (1998) Spector et al., (1988)	Schaubroeck & Fink (1998)

<u>Demands</u>	<u>Effect</u>	<u>Performance /Productivity</u>	<u>OCB</u>	<u>Creativity</u>	<u>Positive Work Outcomes</u>				
					<u>Learning</u>	<u>Proactive Behavior</u>	<u>Engagement</u>	<u>Job/Career Satisfaction</u>	<u>Commitment</u>
		(2009) Pierce et al., (1993) Schaubroeck & Fink (1998) Spector et al., (1988) Tubre & Collins (2000)						Webster et al., (2011)	
	ns	Sargent & Terry (1998)	Jex et al., (2003)				Rubino et al., (2012)	Brief & Aldag (1976) Sargent & Terry (1998)	
Lack of career advancement	+								
	-							Ren et al., (2012); Yang, Che, & Spector, 2008	Briggs et al., (2012)
Job insecurity	ns								
	+	Probst et al., (2007) Staufenbiel & König (2010)	Feather & Rauter (2004)						
	-	Gilboa et al., (2008) De Cuyper &		Probst et al., (2007)				Bernhard- Oettel et al., (2011)	Bernhard- Oettel et al., (2011)

<u>Demands</u>	<u>Effect</u>	<u>Performance /Productivity</u>	<u>OCB</u>	<u>Creativity</u>	<u>Positive Work Outcomes</u>			<u>Engagement</u>	<u>Job/Career Satisfaction</u>	<u>Commitment</u>
					<u>Learning</u>	<u>Proactive Behavior</u>				
		De Witte (2007)							Debus et al., (2012) De Cuyper & De Witte (2007) König et al., (2011) Lim (1997); Näswall et al., (2005)	Debus et al., (2012) Hui & Lee (2000) König et al., (2011)
	ns								Feather & Rauter (2004)	Feather & Rauter (2004)
Role/work overload	+									
	-								Eatough et al (2011) Jex et al., (2002) Jex & Bliese (1999) Jones et al., (2007)	Jex & Bliese (1999) Jones et al., (2007)
	ns	Gilboa et al., (2008) Pierce et al., (1993) Sargent & Terry (1998) Sargent & Terry (2000)							Sargent & Terry (1998) Sargent & Terry (2000)	
Time pressure	+	Peters et al., (1984)		Ohly & Fritz (2010)		Fritz & Sonnentag		Rubino et al., (2012)	Clausen & Borg (2011)	

<u>Demands</u>	<u>Effect</u>	<u>Performance /Productivity</u>	<u>OCB</u>	<u>Creativity</u>	<u>Positive Work Outcomes</u>				
					<u>Learning</u>	<u>Proactive Behavior</u>	<u>Engagement</u>	<u>Job/Career Satisfaction</u>	<u>Commitment</u>
		Pearsall et al., (2009)				(2009) Ohly & Fritz (2010)			
	-	Baethge & Rigotti (2013) Beck & Schmidt (2012)					Sonnentag et al., (2010)	Rubino et al., (2012)	
	ns						Kühnel et al., (2012)		
	non- linear	Pepinsky et al., (1960)		Baer & Oldham (2006) Binnewies & Wörnlein (2011)					
Workload/ Physical demands	+	Bakker et al., (2004)	Bakker et al., (2004)					Dwyer & Ganster (1991)	Jex & Bliese (1999)
	-	Schaubroeck & Fink (1998)	Schaubroeck & Fink (1998)					Spector et al., (1988) Webster et al., (2011)	Schaubroeck & Fink (1998)
	ns	Fox et al.,			Van de Ven		Richardsen et	Fox et al.,	Richardsen et

<u>Demands</u>	<u>Effect</u>	<u>Performance /Productivity</u>	<u>OCB</u>	<u>Creativity</u>	<u>Positive Work Outcomes</u>			<u>Engagement</u>	<u>Job/Career Satisfaction</u>	<u>Commitment</u>
					<u>Learning</u>	<u>Proactive Behavior</u>				
		(1993) Spector et al., (1988)			et al., (2008)			al., (2006)	(1993) Jex & Bliese (1999) Schaubroeck & Fink (1998) Yang et al., (2012)	al., (2006)
Emotional demands	+								Clausen & Borg (2011)	
	-				Taris & Schreurs (2009)					
	ns	Bakker et al., (2004) Fox et al., (1993)	Bakker et al., (2004)		van de Ven et al., (2008)				Fox et al., (1993)	Huynh et al., (2012)
Skill under- utilization	+									
	-	Sargent & Terry (1998) Schaubroeck & Fink (1998)	Schaubroeck & Fink (1998)						Sargent & Terry (1998) Schaubroeck & Fink (1998)	Schaubroeck & Fink (1998)
	ns								Ren et al., (2012)	

Influence of Job Demands on Desirable Organizational Outcomes

Beneficial Demands

From our review, we identified two general types of job demands that consistently have positive influences on desirable work outcomes. These include employee responsibility, both role and relational, as well as knowledge demands.

Responsibility. Although only role responsibility has been explicitly discussed as a challenging and motivational demand (e.g., Cavanaugh, 2000), responsibility for others, or relational responsibility, can be considered to fall within the same domain of responsibility. Results generally support the challenging nature of responsibility demands, with positive associations reported with in-role and extra-role performance (Schaubroeck & Fink, 1998), organizational commitment (Richardsen, Burke, & Martinussen, 2006; Schaubroeck & Fink, 1998), and job satisfaction (Schaubroeck & Fink, 1998). While Webster and colleagues (2011) did not find a significant association with job satisfaction, they observed that employees appraised responsibility as generally beneficial.

Knowledge demands. Demands described as knowledge characteristics of the job or ones that are cognitively taxing generally contribute to desirable work outcomes. Even if not originally classified under the challenge and hindrance stressors framework, authors sometimes conceptualize them as challenge stressors because they promote on-the-job learning (Daniels, Boocock, Glover, Hartley, & Holland, 2009). Of the knowledge demands, role complexity (i.e., task or people complexity) has consistently been associated with desirable behaviors, such as team productivity (Pepinsky, Pepinsky, & Pavlik, 1960) and attitudes, such as job satisfaction (Jex et al., 2002; Ito &

Brotheridge, 2012). Problem solving and cognitive demands have also exhibited positive influences on desirable work outcomes; however, in contrast with complexity, there are some inconsistencies across studies. Some authors report positive associations with job satisfaction (Morgeson & Humphrey, 2006) and learning (Van de Ven, Vlerick, & de Jonge 2008), but others find no such relationships (De Jonge & Dormann, 2006; Dwyer & Ganster, 1991; Schmitt, Zacher, & Frese, 2012).

Deleterious Demands

In line with the original conceptualization of demands as hazardous to employee behaviors and attitudes, we identified several that fall into this category. These include the traditional role stressors of ambiguity and conflict, situational constraints and interruptions, skill underutilization, and lack of career advancement.

Role stressors. Role ambiguity and role conflict are the two stressors that tend to generate uncertainty and role stress. Role ambiguity represents a stressful demand stemming from employees not knowing what is expected of them or how they are going to be evaluated (Rizzo, House, & Lirtzman, 1970). It has repeatedly been negatively related to behavioral job outcomes, such as engagement (Rubino et al., 2012), citizenship behaviors (Schaubroeck & Fink, 1998), and performance (Bernardin, 1979; Brief & Aldag, 1976; Fried, Ben-David, Tiegs, Avital, & Yeverechyahu, 1998; Gilboa, Shirom, Fried, & Cooper, 2008; Kalbers & Cenker, 2008; Pearsall et al., 2009; Pierce, Gardner, Dunham, & Cummings, 1993; Schaubroeck & Fink, 1998; Spector et al., 1988; Tubre & Collins, 2000) and to attitudinal outcomes, such as job satisfaction (Eatough, Chang, Miloslavic, & Johnson, 2011; Ito & Brotheridge, 2012; Rubino et al., 2012; Schaubroeck & Fink, 1998; Spector et al., 1988; Webster, Beehr, & Love, 2011), and organizational

commitment (Schaubroeck & Fink, 1998). There were only a few studies that reported no association between role ambiguity and desirable work outcomes (Brief & Aldag, 1976; Jex, Adams, Bachrach, & Sorenson 2003; Sargent & Terry, 1998). Another role stressor, role conflict, which is defined as the experience of conflicting expectations and demands when occupying multiple work roles (Rizzo et al., 1970), has been reported as a deleterious influence on various work outcomes, such as performance (Bernardin, 1979; Fried et al., 1998; Gilboa et al., 2008; Schaubroeck & Fink, 1998), citizenship behaviors (Eatough et al., 2011; Schaubroeck & Fink, 1998), and job satisfaction (Brief & Aldag, 1976; Eatough et al., 2011; Jex et al., 2002; Rodríguez, Bravo, Peiró, & Schaufeli, 2001; Sargent & Terry, 1998; Schaubroeck & Fink, 1998; Webster et al., 2011). While many studies report significant negative effects, some indicate no relationship between role conflict and positive work outcomes (Brief & Aldag, 1976; Pierce et al., 1993; Sargent & Terry, 1998; Spector et al., 1988; Tubre & Collins, 2000; Jex et al., 2003; Ito & Brotheridge, 2012; Schaubroeck & Fink, 1998). The more relational form of conflict, interpersonal conflict, has also shown to be deleterious to performance (Sliter, Pui, Sliter, & Jex, 2011) and job satisfaction (Spector et al., 1988) but had no relationship with engagement and commitment (Richardsen et al., 2006).

Situational constraints and interruptions. Situational constraints, defined as organizational features that prevent employees from translating their ability and motivation into good performance (Peters, O'Connor, Eulberg, & Watson, 1988), are usually considered to be hindrance demands; they have deleterious effects on performance (Adkins & Naumann, 2001; Gilboa et al., 2008; Klein & Kim, 1998; Peters, O'Connor, Pooyan, & Quick, 1984; Spector et al., 1988; Steel & Mento, 1986), creativity

(Binnewies & Wörnlein, 2011), and job satisfaction (Peters et al., 1984; Spector et al., 1988; Yang et al., 2012), usually due to feelings of haplessness and an inability to overcome the constraint. One exception to this, however, occurred in a daily diary study by Fritz and Sonnentag (2009). They found that situational constraints were associated with higher levels of daily proactive behavior, sparking a motivational mechanism similar to the one associated with challenge stressors. There is one study that found no association between constraints and positive work outcomes (Jex et al., 2003). Some studies have focused on a more narrow set of situational constraints (e.g., perceived safety risk, hazards, etc.), which have had negative effects on work engagement (Nahrgang, Morgeson, & Hofmann, 2011), as well as, job satisfaction (Nielsen, Mearns, Matthiesen, & Eid, 2011). Although not explicitly studied within the challenge and hindrance stressors framework (e.g., Cavanaugh et al., 2000), interruptions to workflow (i.e., temporarily having to stop an activity in order to engage in the interfering activity) have also been conceptualized as hindrances (Clarke, 2012). Baethge and Rigotti (2013) found that interruptions negatively affect employee satisfaction with their performance through increasing daily demands. However, Zijlstra and colleagues (1999) found no association between interruptions and performance

Skill underutilization. Another demand not included in the challenge and hindrance stressors framework is skill underutilization, defined as the degree of match between employees' skills and the opportunity to use these skills in their work role (O'Brien, 1980). However, because it may inhibit employees' professional advancement and restrict the use of their full abilities, it may be considered a hindrance stressor. Accordingly, it has been negatively associated with performance (Sargent & Terry, 1998;

Schaubroeck & Fink, 1998) and extra-role performance (Schaubroeck & Fink, 1998), as well as attitudinal outcomes, such as job satisfaction (Sargent & Terry, 1998; Schaubroeck & Fink, 1998) and organizational commitment (Schaubroeck & Fink, 1998). However, Ren and colleagues (2012) did not find a significant association between the related construct of perceived underemployment and the career satisfaction of repatriates.

Lack of career advancement. Lack of career advancement opportunities was originally labeled a hindrance stressor (Boswell et al., 2004; Cavanaugh et al., 2000), however, it has recently "fallen out" of the challenge and hindrance stressors classification (*e.g.*, Clarke, 2012; Crawford et al., 2010; LePine et al., 2005). Studies found that it was negatively related to the career satisfaction of repatriates (Ren, Bolino, Shaffer, & Kraimer, 2012), commitment (Briggs, Jaramillo, & Weeks, 2012) and job satisfaction (Yang, Che, & Spector, 2008).

Mixed-Effects Demands

While the beneficial and deleterious job demands just discussed have had consistent positive and negative effects, respectively, several job demands have had effects that fluctuate considerably across reviewed studies. These include time pressure, work load, overload, job insecurity, and emotional demands.

Time pressure. Under the challenge and hindrance framework (Cavanaugh et al., 2000), time pressure or time urgency, defined as the degree to which employees need to work fast in order to complete their job tasks (*e.g.* Kinicki & Vecchio, 1994), has been categorized as having motivational properties. However, their effects on desirable work behaviors and attitudes have been mixed. In relation to engagement, time pressure has

have had positive (Rubino et al., 2012), negative (Sonnentag, Binnewies, & Mojza, 2010), and null (Kühnel, Sonnentag, & Bledow, 2012) associations. While some researchers indicate that time pressure is positively related to creativity (Ohly & Fritz, 2010), others report curvilinear effects (i.e., inverted U-shape)(Baer & Oldham, 2006; Binnewies & Wörnlein, 2011). Similar inconsistencies exist in regards to its association with general performance and productivity, where certain studies report positive associations (Pearsall et al., 2009; Peters et al., 1984) and others find negative (Baethge & Rigotti, 2013; Beck & Schmidt, 2012) and curvilinear relationships (i.e., inverted U-shape)(Pepinsky et al., 1960). Time pressure has exhibited the most consistent positive effect in relation to proactive behavior (Fritz & Sonnentag, 2009; Ohly & Fritz, 2010). In relation to employee attitudes, time pressure has been beneficial for the experience of meaning at work (Clausen & Borg, 2011), however, others have found that it decreases job satisfaction (Rubino et al., 2012).

Workload. Defined as a perceptual evaluation of work quantity, workload has been considered a challenge stressor (Cavanaugh et al., 2000), but similar to time pressure, its effects have fluctuated across studies. With respect to employee performance (i.e., in-role and extra-role), workload has had a beneficial effect above its deleterious influence on performance through strain (Bakker, Demerouti, & Verbeke, 2004), but it has also had deleterious effects on performance (Schaubroeck & Fink, 1998) and no association (Fox, Dwyer, & Ganster, 1993; Spector et al., 1988). The relationship between workload and desirable attitudinal outcomes has also been tenuous. Some researchers report a negative association with commitment but positive (Dwyer & Ganster, 1991) and no relationship with job satisfaction (Fox et al., 1993; Schaubroeck &

Fink, 1998; Webster et al., 2011; Yang et al., 2012). The more objective measure of workload, assessed in terms of hours worked per week, has also been used in job demands research. It has been positively related to organizational commitment (Jex & Bliese, 1999) and negatively associated with job satisfaction (Spector et al., 1988). Others have failed to establish a relationship between hours worked and job satisfaction (Jex & Bliese, 1999). Richardsen and colleagues (2006) found no effect of overtime work engagement and commitment. More profession-specific types of workload (i.e., physical demands) have also been studied, but they were not strongly related to learning outcomes (van de Ven et al., 2008).

Overload. Ambiguity also exists in regards to the nature of role/work overload, a situation where workload demands exceed the available resources to meet them. While it has been considered a hindrance demand (LePine et al., 2005), it is conceptually close to workload (i.e., both measure the degree to which employees feel overwhelmed by the number of their job tasks), which is classified as a challenge demand (LePine et al., 2005). In fact, McCauley and colleagues (1994) labeled role overload as a challenge and Eatough and colleagues (2011) considered it to be both challenging and hindering. While some studies indicate that role overload is detrimental in relation to attitudinal outcomes such as job satisfaction (Eatough et al., 2011; Jex & Bliese, 1999; Jex, Adams, Elacqua, & Bachrach, 2002; Jones, Chonko, Rangarajan, & Roberts 2007) and organizational commitment (Jex & Bliese, 1999; Jones et al., 2007), others did not find such relationships (Sargent & Terry, 1998; Sargent & Terry, 2000). The relationship between role overload and performance is even more ambiguous since studies show that this demand may not be so deleterious to job performance (Pierce et al., 1993; Sargent &

Terry, 1998; Sargent & Terry, 2000). The same conclusion was reached in a recent meta-analysis by Gilboa and colleagues (2008), where it was deemed as a demand of mixed beneficial and deleterious effects.

Job insecurity. Job insecurity has been considered a hindrance stressor and studies have reported a negative association with job satisfaction (Bernhard-Oettel, De Cuyper, Schreurs, & De Witte 2011; Debus, Probst, König, & Kleinmann, 2012; De Cuyper & De Witte, 2007; König, Probst, Staffen, & Graso, 2011; Lim, 1997; Näswall, Sverke, M., & Hellgren, 2005), commitment (Bernhard-Oettel et al., 2011; Debus et al., 2012; De Cuyper & De Witte, 2007; Hui & Lee, 2000; König et al., 2011), however, others found no association with these outcomes (Feather & Rauter, 2004). In addition, evidence indicates that it is only slightly associated with a decrease in desirable work outcomes such as performance (Gilboa et al, 2008). In fact while, some found negative associations with in-role and extra-role performance (De Cuyper & De Witte, 2007), others found a positive one (Feather & Rauter, 2004; Probst, Stewart, Gruys, & Tierney, 2007). Furthermore, Staufenbiel and König (2010) found that while job insecurity does decrease performance through its negative effect on employees' work attitudes, it also has a small but significant positive direct effect on performance. The authors' reasoning for this is that job insecurity may motivate employees to work harder in order to keep their jobs.

Emotional demands. Emotional demands (i.e., emotionally charged situations involving others at work), are common in studies but it has been hard to classify them as hindrance or challenge (e.g., Crawford, LePine, & Rich, 2010). Nevertheless, in some studies they are considered hindrances (e.g., Tims, Bakker, & Derks, 2013). However,

emotional demands have not consistently exhibited detrimental properties across studies. Some found no relationship with in-role and extra-role performance (Bakker et al., 2004; Fox et al., 1993), organizational connectedness (Huynh, Xanthopoulou, & Winefield, 2012), or job satisfaction (Fox et al., 1993). Furthermore, emotional demands have been found to have a positive influence by increasing employees' subsequent experience of meaning at work (Clausen & Borg, 2011). Even when effects are compared across similar outcomes, there are inconsistencies. For example, Taris and Schreurs (2009) found that they negatively affect on-the-job-learning, while others report no significant influence of emotional demands on learning motivation and professional self-efficacy (van de Ven et al., 2008), which are also indicators of learning.

Moderating Influences on the Positive Side of Job Demands

To understand differences in the effects of demands on desirable work outcomes, we considered various contextual and personal contingencies that may have influenced the results of different studies. Drawing on Johns' (2006) framework for organizing aspects of context, we classified these in terms of omnibus and discrete contexts. We also review the personal contingencies that have been instrumental in mitigating or enhancing relationships between job demands and desirable work outcomes, as well as complex 3- and 4-way interactions involving different combinations of contextual and/or personal contingencies.

Omnibus Contextual Contingencies

This category of context encompasses the broader environment within which job demands occur (Johns, 2006). We identified three contextual features that fall into this category: culture, time and occupation.

Although studies have been conducted in variety of countries (e.g., USA, Netherlands, Germany, Denmark, UK, Australia, Canada, etc.), very few researchers have actually examined the cultural context or looked at cross-cultural or cross-country effects. An exception to this is a study of 24 different countries by Yang and colleagues (2012). They found that individualism/collectivism moderated the relationship between the demands of workload and situational constraints and job satisfaction. In individualistic countries the relationship between these demands and job satisfaction was significantly more negative than for collectivistic countries; in collectivist countries, there was a negative relationship between situational constraints and job satisfaction but the association between workload and job satisfaction was not significant. This may have been due to the already ambiguous nature of workload. Debus and colleagues (2012) found that in countries characterized with high uncertainty avoidance and good social safety net job insecurity is less detrimental to job commitment and satisfaction. Kozusznik and colleagues (2012), proposed that Dutch and Spanish social workers differ in their appraisal of workload, and in the strength of the association between workload and engagement, but they found no differences between the two countries. The non-significant result here may have been due to insufficient cultural or societal differences between the two country contexts. While in their meta-analysis Gilboa and colleagues (2008) did not look at culture, they did find that in English speaking countries the negative association between job insecurity and performance was even more deleterious, they did not find any moderating effect though for role overload, role ambiguity, and role conflict.

Our review indicates that the time frame used to conduct the studies may be an important situational factor for elucidating the circumstances under which demands have beneficial effects on work outcomes. About half of the reviewed articles (52%), outside of meta-analyses and experiments, rely on cross-sectional designs. However, longitudinal studies, especially, daily diary studies are gaining prominence (e.g., Baethge & Rigotti, 2013; Binnewies & Wörnlein, 2011; Fritz & Sonnentag, 2009). The purpose of this method is to shift the focus from stable or chronic stressors within the work environment, which is a characteristic of traditional cross-sectional studies, to the *daily* variation of demands and their effect on *daily* work outcomes. This focus on chronic or daily effects of demands may influence the demand-outcome relationship. For example, Baethge and Rigotti (2013) found a negative association between time pressure and performance in a daily study, while Peters and colleagues (1984) found a positive association between the two variables in a cross-sectional study. It is possible that when employees are pressed for time their immediate performance may be adversely affected. On the other hand, time pressure may better demonstrate its motivational effects when it is assessed as a general characteristic of the job.

Our review shows that long-term longitudinal studies of specific job demands are scarce (15%) and that not all demands behave the same in the long run. For example, the negative effect of role conflict was found to decrease over time (Sargent & Terry, 1998), but the deleterious influence of role ambiguity deepened with time (Clausen & Borg, 2011). Since it has been suggested that role conflict is in general less detrimental than role ambiguity (Gilboa et al., 2008), it is possible that people adjust in time to some deleterious demands but they experience worsening of their situation if strongly

hindering demands are not resolved. The ambiguous nature of certain demands is also evident in long-term studies. For example, in a study by Sonnentag et al. (2010), time pressure, which we classified as a mixed-effect demand, was at first deleterious to engagement, but this effect became null later.

Occupation is another important contextual factor that can have an impact on the relationship between job demands and desirable work outcomes. Our review lends some support to the idea that beneficial demands that match closely with job requirements may be more favorably appraised since they are perceived as facilitators of career growth (Cavanaugh et al., 2000). For example, Morgeson and Humphrey (2006), in a study of mostly managers, found that knowledge based demands high on cognitive complexity were positively associated with job satisfaction. On the other hand, Schmitt and colleagues (2012) found no association between such demands and the job satisfaction of university staff employees. It is possible that such knowledge related demands match better with managerial than administrative staff. Similarly, if the outcome is a core requirement of the job, the relationship between demands and work outcomes may be stronger. For example, in contrast with studies that report an inverted U-shape relationship between time pressure and creativity (e.g., Binnewies & Wörnlein, 2011), Ohly and Fritz (2010) found a positive association; they attributed this to the fact that creativity is a core requirement for engineers. However, contradictory findings emerged in studies of emotional demands of health care professionals, for whom dealing with emotionally charged situations is part of the job (Clausen & Borg, 2011; Taris & Schreurs, 2009). Also, strong hindering demands, such as role ambiguity, seem to

consistently exhibit deleterious properties across professions (e.g., Clausen & Borg, 2011; Ito & Brotheridge, 2012; Schaubroeck & Fink, 1998).

Discrete Contextual Contingencies

This type of context comprises specific situational variables, including features of the task (e.g., job control) as well as the social (e.g., social support) and physical environment. While many studies in our review did not find a significant interaction effect for discrete contextual elements (e.g., Bakker et al., 2004; Boswell et al., 2004; Kühnel et al., 2012; Schmitt et al., 2012), several did report strong contingency roles for these variables. However, these interactions did not always represent the desired motivational effect.

Job control, which is defined as the ability to decide how and when to handle job tasks (Karasek, 1979), is an important task feature that has been conceptually and empirically linked with job demands and desirable work outcomes. According to the Job-Demands Control (JD-C) model (Karasek, 1979), under high job control and high demands, employees are thought to experience an "active" motivational state that would positively affect work outcomes. However, empirical findings are contradictory. Some authors found that when job control was high, the relationship between demands and outcomes was in fact positive and when it was low the relationship became negative (Kühnel et al., 2012; Sargent & Terry, 1998). Others, however, found that control only lessens the negative effect of stressors but does not have any motivational effects (Taris & Schreurs 2009; van Emmerik, Bakker, & Euwema, 2009). There are also counterintuitive results, with studies finding that high control worsens the relationship between demands and desirable outcomes (Binnewies & Wörnlein, 2011).

Social support (i.e., emotional and instrumental support from others at work and outside of work) is a feature of the social environment. Similar to job control, it is usually hypothesized that a condition of high demands in conjunction with high social support will lead to beneficial effects (e.g., Bakker & Demerouti, 2007). However, when the direct demand-desirable work outcome relationship is negative, support only alleviated the negative effects; it did not bring out any motivational properties (Nielsen et al., 2011; Sonnentag et al., 2010). On the other hand, when there was no significant direct association between demands and outcomes, social support made this relationship positive; when resources were low the relationship became negative (De Jonge, & Dormann, 2006; Huynh et al., 2012). However, when demands already had a positive relationship with outcomes, the addition of the moderating effect of resources often made this positive relationship stronger (van de Ven et al., 2008). Unexpectedly sometimes high levels of resources exacerbated the negative relationship between demands and desirable outcomes (Taris & Schreurs, 2009; van Emmerik et al., 2009).

Personal Contingencies

Apart from contextual influences, individual differences also play a critical role in determining the effects of job demands on desirable work outcomes (e.g., Lazarus & Folkman, 1984). Personal differences can influence individuals' evaluations of demands as beneficial or deleterious and their ability to handle them successfully (e.g., Lazarus & Folkman, 1984; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). In our review of specific job demands, we identified only a few personal contingencies: self-esteem, self-efficacy and personality.

Self-esteem and self-efficacy are seen as helpful to employees who face high job demands (Xanthopoulou et al., 2007). Studies found that when demands already have a direct deleterious influence on desirable outcomes, such personal resources will lessen the negative effect (e.g., Pierce et al., 1993). However, when the demand has a beneficial effect, these personal resources enhance its positive properties (e.g., Jex & Bliese, 1999). Although personality has often been examined as an important moderator in stress research, we identified only one study that found personality differences with respect to the relationship between specific job demands and desirable work outcomes. Jex et al. (2002) assessed the effects of Type A personality; they found that when people are very irritable, mental demands have an adverse effect on them. Some reported no significant effects for personal contingencies (Sliter et al., 2011).

Multiplicative Contingencies

Scholars have also considered complex (3- and 4-way) interactions involving various combinations of contextual and/or personal factors. Some studies indicate that when demands, job control, and social support are all high, employees will experience an active motivational state that results in positive outcomes (Sargent & Terry, 2000). However, some have observed that the joint effect of support and control only lessens the negative influence of some demand-outcome relationships instead of creating a motivational situation (Schaubroeck & Fink, 1998). Examining the joint effect of contextual and personal factors, Rubino and colleagues (2012) found that the combination of high emotional stability and job control created the most beneficial situation when demands were high. Rodríguez and colleagues (2001) discussed even

more complex interactions where three contextual and personal factors moderated the demand-outcome relationship.

Discussion and Future Research Directions

Our discussion is organized around the two general questions we posed in the introduction to this review: Can all demands be separated into consistently beneficial or always deleterious? Is it only the nature of demands that determines their positive effect or contextual factors play a role? In answering these questions, we offer suggestions for future research.

Can all Demands be Classified as ‘Beneficial’ or ‘Deleterious’?

The answer to this question is a resounding "No." As our review shows, while certain demands have consistently positive or negative associations with desired work outcomes, several demands exhibit considerable variation in their effects across studies.

A continuum of job demands. While the two-dimensional distinction between challenge and hindrance stressors has definitely advanced the field, we have noted quite a bit of variation among demands classified as challenge and those classified as hindrance. Therefore, to move the field forward, we suggest that it is beneficial to examine specific demands instead of combining them into one-dimensional (i.e., job demands) or two-dimensional (i.e., challenges and hindrances) composite scales. We also contend that it is more appropriate to consider job demands along a *continuum* from deleterious to beneficial properties rather than classifying them as *either* challenging or hindering.

Based on our review, we have identified some demands that can be more purely differentiated into the two categories (*i.e.*, deleterious and beneficial) at the opposite ends of the continuum, while others exhibit more mixed effects, relegating them to the middle

of the continuum. Included at the deleterious end of the continuum are role ambiguity, role conflict, workflow interruptions, situational constraints, lack of career advancement, and skill underutilization. While it seems from our review that these stressors are similar in their negative effects, a meta-analysis by Gilboa and colleagues (2008) suggests that role ambiguity and situational constraints might be the most detrimental stressors, at least in relation to performance. The specific demands that have positive motivational properties are at the beneficial end of the continuum; they include responsibility (i.e., role responsibility and people responsibility), complexity, problem-solving, and cognitive demands. Among these beneficial demands, there are still differences: responsibility demands exhibit the most consistent relationships with work outcomes, but some studies failed to find significant associations involving task complexity and problem-solving demands. Finally, several demands had inconsistent effects: the traditional challenge demands of time pressure and workload and the traditional hindrance demands of role overload and job insecurity. Unlike demands such as responsibility, it may be harder for people to see a clear connection between these particular demands and furthering their career and personal growth. In fact studies suggest that such mixed-effect demands are usually equally appraised by individuals as beneficial and deleterious (e.g., Gilboa et al., 2008; Webster et al., 2011). Whether the appraisal is swayed towards the positive or negative might depend on contextual or personal contingencies.

Future research. To further clarify the content domain of job demands, we offer several directions for future research. As an important starting point, we need better constitutional and operational definitions that delineate among job demands. In terms of constitutional definitions, the most pressing need is to understand whether there is a

substantial difference between workload and role overload. While workload has been considered a challenge and role overload a hindrance demand, our review reveals that both show mixed results in relation to desirable work outcomes. Some authors even suggest that there are no conceptual and practical differences between the two (Gilboa et al., 2008). Therefore, we suggest that in the future these concepts should be considered interchangeably or further delineated from each other, such that role overload would represent perhaps an extreme form of workload.

While there is somewhat greater delineation among task related job demands, there is little clarity in regards to more relational demands, such as emotional demands. The content domain of emotional demands encompasses all stressors at the workplace that are associated with interactions with others. For example, the measure of emotional demands includes items such as "I have to contact with difficult people in my work" and "Others call on me personally in my work" (Van Veldhoven & Meijman, 1994). Both items seem to capture different aspects of relational demands. The first one seems to be more in line with interpersonal conflict and have a more deleterious effect, while the second one may represent more responsibility for others and be appraised more positively. Thus, future research may need to move towards using more specific measures of relational demands.

In terms of operational definitions, measures of specific job demands need to be improved. While good measures for stressors, such as situational constraints, role conflict, and role ambiguity, seem to exist, there is a need to develop reliable and valid scales for assessing other stressors, such as role responsibility and workload. Before refinement of composite measures is possible, we recommend that researchers first focus

on clarifying specific job demands. In particular, more meta-analyses are needed to identify the demands with the highest effect sizes in relation to desirable work outcomes. Comparing job demands to each other through meta-analyses will allow future research to more accurately place them on the proposed continuum or within the appropriate composite measure.

Is it Only the Nature of Demands that Determines Their Positive Effect or do Contextual and Personal Factors Play a Role?

Based on our review, contingencies do play an important role in the job demands – work outcome relationships. However, contextual influences seem to be more instrumental in affecting these relationships.

Contextual and personal contingencies. In terms of contextual contingencies, our review suggests that both omnibus and discreet contexts play important roles in influencing the effects of job demands on desirable work outcomes. In particular, we found that the omnibus context can be a reason for fluctuations in results across studies, especially for mixed-effect demands. The omnibus and discreet contexts are not independent of each other, but instead they represent different levels intertwined together (Johns, 2006), with the discreet context dependent on the omnibus context. That is, the effects of demands are first determined to an extent by the general environment and then are further clarified by more particular situational factors. The influence of personal contingencies is not as clear-cut, nor have these been as extensively researched. However, our review indicates that personal factors could interact with job demands as well as other contextual contingencies to alter the job demands – work outcome relationship.

Future research. Based on our review of contextual and personal contingencies, we offer several directions for future investigations that examine the complexities of the link between job demands and desirable work outcomes. Of the various omnibus contextual factors, time has received the most attention from scholars. Differences in demand effects seem to depend on whether demands were assessed as dynamic (i.e., daily) or stable characteristics. However, more research comparing each specific daily and chronic demand effect is needed. It is also possible that some demands, such as workflow interruptions, can best be studied on a daily level (e.g., Baethge & Rigotti, 2013), while other demands would be best examined as more stable workplace characteristics (e.g., role responsibility)(e.g., Webster et al., 2011). Our review also hints at the possibility that not all demands behave the same when their effects over time are examined and that this seems to depend on the demand type. We found that mixed-effect demands (e.g., time pressure) had more inconsistent effects than demands of a more consistent nature (e.g., role ambiguity). More research with specific rather than composite measures of job demands is needed to elucidate the behavior of stressors over time.

Very limited research considers other omnibus contextual features such as culture and occupation. In particular, more studies are needed to determine whether the effects of demands on desirable work outcomes differ across cultures. Also, since the cross-cultural studies we reviewed focused exclusively on individualism/collectivism and uncertainty avoidance, future studies need to examine other cultural dimensions, such as time orientation, as well as, differences in social, political, and economic structures. With respect to the occupational context, our review points to the possibility that when

demands are seen as part of core job requirements, they may be appraised more favorably. However, some studies contradict this assertion, indicating that more research is needed to understand the relationship between job demands and job requirements. In addition, while mixed-effect demands (e.g., time pressure) seem to vary more across professions, more inherently deleterious or beneficial demands (e.g., role ambiguity) seem to have consistent effects. In the future, scholars may want to compare explicitly the possible beneficial effects of job demands across professions.

The influence of the discreet context seems to be very dependent on whether the direct relationship between demands and desirable work outcomes is positive, negative, or null. It seems that it is first the nature of the demand that determines its effect, then it is the omnibus context that seems to further affect the relationship, and finally the discreet context clarifies it. Supporting this explanatory role of the discrete context, there are several theories, including the Job Demands-Control Model (JD-C) (Karasek, 1979) and the Job Demands-Resources Model (JD-R) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), that consider discrete contextual features as important contingencies on the job demands – work outcomes relationships. These theories assume that all demands have similar effects and that regardless of the demand, high job control or high resources such as social support, in conjunction with high demands, would create a positive motivational state (i.e., "active" job). However, based on our review, it seems that an "active" job is only achieved when demands already have a direct positive (even if not significant) relationship with outcomes (e.g., Kühnel et al., 2012; Sargent & Terry, 1998). If demands already exhibit a negative relationship, a favorable discreet context is only able to lessen their negative effect but not facilitate a state of motivation (e.g., Taris &

Schreurs 2009; van Emmerik et al., 2009). These observations point to the possibility that beneficial demands will be enhanced by the presence of valuable resources, while deleterious stressors will only be buffered by resources. Thus, achieving an "active" job may only be possible if employees are experiencing demands of at least a somewhat challenging nature. We note, however, that many studies identified in our review failed to find a significant interaction effect. This has prompted some to conclude that the contingencies such as job demand-job control interactions are a myth (e.g., Taris, 2006).

For our review, we were able to identify only a few studies that looked at personal contingencies. However, preliminary evidence points to the possibility that personal contingencies, especially personal resources such as self-esteem and self-efficacy, would have the same effect as discrete contextual variables. That is, when personal resources are high they might be able to mitigate the negative influence of already deleterious demands and enhance the positive effect of beneficial ones. Our review also identified personality as a factor in clarifying the demand-outcome relationship, but because of insufficient studies that focus on specific job demands, it is too early to make inferences. We encourage future researchers to examine a broader array of personal contingencies, including demographic differences such as gender and education, as well as personality differences and other personal resources. A promising line of research looks at the proactive effort on the side of employees to craft and shape their job demands based on their own personal desires and needs (e.g., Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012; Tims et al., 2013). Such studies can further elucidate the role of personal contingencies in clarifying the effect of job demands.

Although our review included a couple of studies that considered multiplicative interaction effects (e.g., Schaubroeck & Fink, 1998), we need more research on the joint interactions of contextual and/or personal contingencies. The JD-C(S) model (Karasek & Theorell, 1990) suggests that a combination of resources may be most suitable for achieving an "active" job state, but there is very little support for this proposition. Thus, to confirm such theoretical explanations, we need more studies that focus on the joint interaction of control and support, as well as on the joint interactions among other resources. These studies can then be examined for any patterns that may support the idea that a combination of resources is best.

Conclusion

In this review, we have focused on the influence of *specific* job demands on desirable work outcomes. We suggest that future efforts be directed towards ordering stressors along a continuum ranging from demands that are heavily deleterious for achieving valued goals and career growth to those that are consistently facilitative of such personal and professional accomplishments. Furthermore, our review suggests that examinations of contextual (i.e., discreet and omnibus) and personal contingencies may result in more complete inferences about the effects of job demands, especially those that have mixed effects (i.e., around the middle of the continuum). By stepping back and focusing on specific job demands, we believe that future researchers will bring clarity to the fragmented job demand literature, especially in terms of their positive influence on desirable work outcomes.

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**CHAPTER 2: DYNAMIC INTERACTION EFFECTS OF DAILY ANTICIPATED
CHALLENGE JOB DEMANDS AND UNANTICIPATED JOB DEMANDS ON
WORK ENGAGEMENT AND GOAL PROGRESS SATISFACTION**

In the management literature, job stressors/demands are often considered detrimental to employees and work outcomes because of their tendency to contribute to employee strain and stress. However, a somewhat recent perspective on job stressors has emerged. Based on the transactional theory of stress (Lazarus & Folkman, 1984), the challenge and hindrance stressors framework proposes that, while all job demands will increase strain, some will be viewed by employees as an opportunity for achieving valued goals (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Challenge job stressors (*e.g.*, time pressure, role responsibility, role complexity, role novelty, and workload) include job demands that are evaluated as facilitating personal and career growth through goal achievement. Hindrance stressors (*e.g.*, role ambiguity, role conflict, situational constraints, and red tape), on the other hand, are viewed as a barrier to reaching valued goals and to personal and career advancement. This re-conceptualization of job stressors has been very popular, with studies finding differentiated effects of job demands in relation to various work outcomes, such as job attitudes, turnover and turnover intentions, performance, citizenship and counterproductive behaviors, and engagement (Cavanaugh et al., 2000; Crawford, LePine, & Rich, 2010; LePine, LePine, & Jackson, 2004; LePine, Podsakoff, & LePine, 2005; Podsakoff, LePine, & LePine, 2007; Rodell & Judge, 2009).

However, little consideration has been given to understanding the dynamic effects of demands within a given day and assessing whether the differentiated beneficial and detrimental effects of job demands will hold when they unexpectedly occur in an already challenging and stressful situation. In such challenging circumstances (*i.e.*, experiencing challenge demands) it is possible that no matter the type of new unanticipated demands encountered throughout the day (*i.e.*, challenge or hindrance) they would be seen as

roadblocks to dealing with the original demands and achieving daily goals. This would mean that encountering new and unanticipated demands when already experiencing stress due to challenge demands would create a deleterious situation regardless of the type of unanticipated demand.

Thus the present study looks at the interplay between unanticipated challenge and hindrance job demands and anticipated challenge job demands within a given workday and their effects on daily work engagement (*i.e.*, employees psychological presence in and focus on daily work activities) (Kahn, 1990) and daily goal progress satisfaction (*i.e.*, employees' satisfaction with their progress towards completing a certain daily work goal). Anticipated challenge job demands are any demands of a challenging and motivating nature that employees know they will have during the day. On the other hand, based on Mandler (1975), unanticipated demands are any additional demands that are encountered during the day and that represent interruptions to workflow, such that employees need to address them to at least some extent.

This study has several contributions. First, it contributes to literature on job stressors by suggesting that the dynamic interplay between existing and new daily challenge and hindrance stressors needs to be examined before we gain a firm understanding of the consequences of job demands. Using an integration of the challenge and hindrance stressors framework and Mandler's (1975) theory of interruptions, I suggest that unanticipated demands will conflict with already existing challenge demands and thus create a deleterious situation regardless of whether the new demands are classified as challenge or hindrance. In fact, there has been some evidence that unanticipated demands are perceived as hindrance stressors because they represent work

interruptions (Clarke, 2012). Thus, encountering any type of unanticipated demand will be undesirable in an already demanding situation. However I further suggest that due to their innately detrimental nature, unanticipated hindrance demands experienced in already challenging circumstances will be in fact damaging to daily work engagement and goal progress satisfaction; unanticipated challenge demands will only mitigate the positive influence of anticipated challenge demands.

Second, while demands are classified as being either challenging or hindering, there is evidence that they tend to vary within each category in regard to how facilitative or detrimental they are to personal and career growth (*e.g.*, Gilboa, Shirom, Fried, & Cooper, 2008; Webster, Beehr, & Love, 2011). Based on this evidence and Mandler's (1975) theory of interruptions, I suggest that the degree to which unanticipated daily job stressors would be detrimental in an already challenging situation would vary within the challenge and hindrance classification, depending on how much the specific unanticipated stressor is facilitating or hampering long-term and short-term goals. This suggests that, while useful, the two-dimensional classification of demands might be an oversimplification and we should perhaps consider demands to fall at different points on a continuum between challenge and hindrance.

Theory and Hypotheses

Mandlers' (1975) theory of interruptions provides an appropriate framework for studying the effect of unanticipated interrupting daily job stressors on planned short-term daily job demands (Rudolph & Repenning, 2002; Weick, 1990). This theory specifically looks at the effect of disruptive events, such as unanticipated daily job demands, on cognitive schemas of intended behavior, or in other words, short-term goals (Fiske &

Taylor, 1984). In the heart of this perspective, unanticipated interrupting demands are seen as disrupting the process of task or goal progress. According to Mandler (1975), any intention to reach a goal produces a tension system, which is released when the goal is reached and is preserved if the goal is blocked. Therefore, the most common response to an interrupting demand that represents a barrier to goal progress is increased stress and anxiety. However, Mandler (1975) suggests that anxiety is not the only response and that unanticipated demands can affect individuals to varying degrees, depending to how well the interruption fits the already existing goal schemata. The more it is aligned with the short-term goal, the less the stress situation would seem detrimental to individuals.

Mandler (1975) does suggest that interruptions, if aligned well with the goal, would even result in positive arousal, such as elation. However, the interruptions in this case do not really represent additional unanticipated stressful demands, such as the common challenge and hindrance stressors. For example, an interruption that consists of a colleague stopping by for small talk is disruptive to goal progress; but this new relatively benign activity could also be aligned with the goal, if the colleague is able to provide some insights that would help achieve the goal faster or just present an opportunity for a short restorative break (Jett & George, 2003). On the other hand, unanticipated challenge and hindrance stressors, due to their innate taxing nature, would represent a more serious interruption and are less likely to be perceived as aligned to the short-term goal. For example, realizing that the deadline for a certain project is sooner than previously thought could lead to abandoning the task at hand for a period of time in order to complete the more pressing task. This, therefore, would create a stressful situation that prevents the achievement of the original task.

In addition, not all short-term goals will be stressful if there is no anticipation of high challenge demands for the day. For example, having a goal to write a memo for an hour during the work day would certainly represent a less stressful goal demand, if it is not viewed to be associated with time pressure and heavy workload (*i.e.*, as in the situation of high anticipated challenge demands). Under already stressful conditions, however, employees are less likely to respond successfully to new demands, even challenges (Schaubroeck & Ganster, 1993). In such conditions, individuals are unlikely to react adaptively (Schaubroeck & Ganster, 1993) and could thus experience anything from anger, to aggression, or to withdrawal (Mandler, 1975).

Therefore, initial anticipated daily challenge job demands will most probably be related to greater job satisfaction and goal attainment satisfaction according to the challenge and hindrance stressors framework (Cavanaugh et al., 2000). However, integrating Mandler's (1975) theory, unanticipated job demands encountered during the day will act as moderators that alter this relationship in a detrimental way.

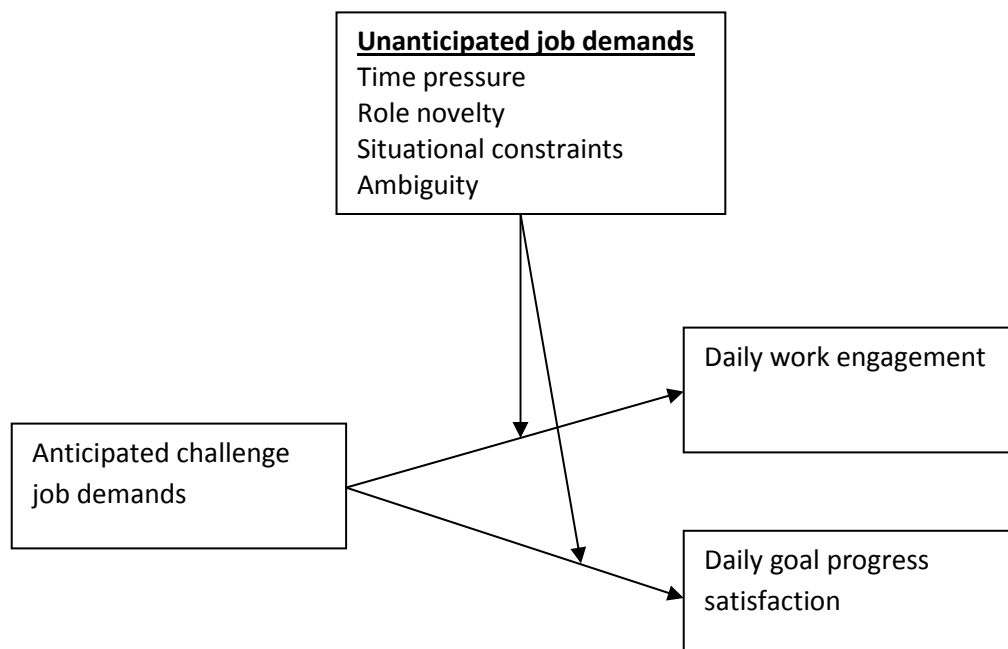
Furthermore, while unanticipated demands are viewed as deleterious disruptions, as suggested by Mandler (1975), they will still vary depending on the degree to which they are disruptive of the short-term goal, such as completing daily tasks. In addition, it is likely that since, in general, challenge demands tend to be aligned with long term goals (Cavanaugh et al., 2000; Lazarus & Folkman, 1984), such as career advancement, the more the interrupting demand is facilitating of professional advancement, while still to a degree disruptive to the short-term goal, the less it will be responsible for creating a deleterious situation. Therefore, interrupting or unanticipated job demands will be the most detrimental when they are highly disruptive of the goal (*e.g.*, take too much

cognitive energy to address) and are unlikely to be aligned with long-term professional goals.

The proposed model is presented in Figure 1. Employees' overall perception of challenging demands they anticipate to have during the work day is suggested to increase employees' daily work engagement and goal progress satisfaction towards the end of the work day. Encountering specific unanticipated challenge demands (*i.e.*, time pressure, role novelty) will mitigate the positive relationship between anticipated challenge demands and the daily work outcomes. Encountering unanticipated hindrance demands (*i.e.*, situational constraints, ambiguity) will create an even more deleterious situation, where the positive relationship between anticipated challenge demands and the daily work outcomes becomes negative.

Figure 1

The Interplay between Anticipated Daily Challenge Demands and Unanticipated Daily Job Demands



Anticipated Challenge Demands and Employee Engagement and Goal Achievement

Based on the challenge and hindrance stressors framework, having challenging job demands during the work day, while stressful, will be seen as opportunities for career advancement and goal attainment if completed successfully (Cavanaugh et al., 2000). In the presence of such demands, employees are expected to positively evaluate their jobs. In fact there is evidence that overall employee engagement increases when employees are experiencing challenge stressors (Crawford, LePine, & Rich, 2010). Often cited reasons for the positive effects of challenge stressors are increased employee motivation (LePine, Podsakoff, & LePine, 2005; Podsakoff, LePine, & LePine, 2007), positive emotions (Lazarus, 1991; Rodell & Judge, 2009), and active adaptive coping (Crawford, LePine, & Rich, 2010). There is also evidence that in addition to stable challenging job characteristics, daily challenge demands are also likely to be beneficial for daily positive work outcomes, such as creativity, proactivity and citizenship behaviors (*e.g.*, Fritz & Sonnentag, 2009; Ohly & Fritz, 2010; Rodell & Judge, 2009), as well as daily work engagement (Sonnentag, Mojza, Demerouti, & Bakker, 2012).

While there is no research that has examined the specific relationship between anticipated daily challenge demands and subsequent daily work engagement, the above evidence points to the likelihood that such a positive relationship would exist. Due to the motivational properties of challenge demands and their tendency to promote goal achievement (Cavanaugh et al., 2000), it is further expected that anticipated challenge demands would be facilitative to achieving daily goals and thus result in goal progress satisfaction at the end of the work day. This is also supported by the time management

literature, where setting goals and priorities, such as challenge demands, for the day could facilitate goal progress (Claessens, van Eerde, Rutte, & Roe, 2007). Thus:

Hypothesis 1: Anticipated daily challenge job demands will be associated with higher work engagement at the end of the workday.

Hypothesis 2: Anticipated daily challenge job demands will be associated with higher goal progress satisfaction at the end of the workday.

Unanticipated Job Demands

The unanticipated job demands examined here are time pressure, role novelty, situational constraints, and ambiguity. Time pressure and role novelty are considered to be motivational and of a challenging nature, while situational constraints and ambiguity are assumed to be detrimental and thus hindrance stressors (Cavanaugh et al., 2000; Crawford et al., 2010).

Based on the challenge and hindrance stressors framework, time pressure and role novelty would contribute to personal and career growth and thus to desirable work outcomes (Cavanaugh et al., 2000). Time pressure is defined as the degree to which employees need to work fast in order to complete their job tasks (*e.g.*, Kinicki & Vecchio, 1994). Role novelty, on the other hand, represents the degree to which the current work role is different from past roles (Nicholson & West, 1988).

While stressful, due to its motivational properties to push employees to work harder, time pressure has been considered to be associated with the achievement of long-term career goals under the challenge and hindrance stressors framework. However, it is possible that, within a given work day, employees may encounter high levels of time pressure that they did not expect. Such unexpected time pressure usually occurs due to

the introduction of unanticipated workload or problems that unexpectedly shorten deadlines. Based on Mandlers's (1975) theory of interruptions, when a demand such as time pressure is experienced as interrupting and unanticipated, it would be seen as a barrier to completing already existing daily tasks. Thus employees' workflow would be interrupted and they would have to stop and reevaluate their approach to the task at hand. This can elevate levels of stress and, according to Mandler (1975), also create a deleterious situation that may prompt employees to see the unanticipated time pressure as impeding the achievement of daily work goals. Thus the positive influence of anticipated challenge demands will be mitigated when encountering unanticipated time pressure during the work day.

On the other hand, role novelty is a challenge demand that, within the context of a given work day, represents how different the nature of the present task is compared to what usually is required from the employee. Role novelty involves having to use new and unfamiliar skills or methods to accomplish work tasks and responsibilities. Thus, under the challenge and hindrance stressors framework, it is seen as contributing positively to personal and career growth in the long run due to the acquisition of valuable skills and experience. However, based on Mandler's (1975) theory of interruptions, while experiencing role novelty can be beneficial in the long-term, it may be undesirable if it is unanticipated and interrupts workflow. For example, during work on a factory floor plan design, an engineer may unexpectedly encounter the need to learn a new method for designing a more efficient waste disposal system due to last minute requests by the client. This will inevitably interrupt the progress on the task at hand and slow down work. Thus, while the anticipation of having a challenge-filled work day can be motivational, if

additional unanticipated challenge demands such as additional time pressure or role novelty are experienced during the day, employees are likely to feel that their workflow is disrupted and be less likely to be engaged and to be satisfied with the progress on their daily work goals. In other words the interrupting demands of time pressure and role novelty will mitigate the positive relationship between anticipated challenge demands and the daily work outcomes. Therefore:

Hypothesis 3 a-b: Unanticipated time pressure will moderate the positive relationship between anticipated challenge demands and daily a) work engagement and b) goal progress satisfaction, such that when unanticipated time pressure is high the anticipated challenge-outcome relationship will be weaker than when time pressure is low.

Hypothesis 4 a-b: Unanticipated role novelty will moderate the positive relationship between anticipated challenge demands and daily a) work engagement and b) goal progress satisfaction, such that when unanticipated role novelty is high the anticipated challenge-outcome relationship will be weaker than when role novelty is low.

Situational constraints and ambiguity, on the other hand, are considered to be hindrance stressors since they tend to prevent the achievement of valued long-term goals and are barriers to personal and career goals (Cavanaugh et al., 2000). Situational constraints are defined as organizational or work features that prevent employees from translating their ability and motivation into good performance (Peters, O'Connor,

Eulberg, & Watson, 1988). On the other hand, ambiguity represents a state of stressful insecurity of not knowing what is expected, missing information to complete a task, or uncertainty of how to proceed next (Rizzo, House, & Lirtzman, 1970; Zohar, 1997).

These demands have repeatedly been associated with decreased engagement and performance (Adkins & Naumann, 2001; Bernardin, 1979; Brief & Aldag, 1976; Fried, Ben-David, Tiegs, Avital, & Yeverechyahu, 1998; Gilboa et al., 2008; Klein & Kim, 1998; Pearsall et al., 2009; Peters, O'Connor, Pooyan, & Quick, 1984; Pierce, Gardner, Dunham, & Cummings, 1993; Rubino et al., 2012; Schaubroeck & Fink, 1998; Steel & Mento, 1986; Tubre & Collins, 2000).

According to both Mandler's (1975) theory of interruptions and the challenge and hindrance stressors framework, hindrance demands that are unanticipated interruptions will result in a detrimental situation. Since such generally hindering interrupting demands are detrimental to not only short-term goals as suggested by Mandler (1975), but also to long-term goals, they would be perceived by employees as even more undesirable and deleterious than interrupting challenge demands, which are only a barrier to short-term goals. Therefore, it is possible that employees would, in fact, become de-motivated and withdraw from working on their tasks. Such passive and emotional coping response is often cited as a result of encountering hindrance stressors (Lazarus & Folkman, 1984; Rodell & Judge, 2009), and it has been assumed to be detrimental to work engagement (Crawford et al., 2010). Under such conditions it is likely that the relationship between anticipated challenge demands and daily work engagement and goal progress satisfaction would become negative. Thus:

Hypothesis 5 a-b: Unanticipated situational constraints will moderate the positive relationship between anticipated challenge demands and daily a) work engagement and b) goal progress satisfaction, such that when unanticipated situational constraints are high the relationship will become negative and will remain positive when unanticipated situational constraints are low.

Hypothesis 6 a-b: Unanticipated ambiguity will moderate the positive relationship between anticipated challenge demands and daily a) work engagement and a) goal progress satisfaction, such that when unanticipated ambiguity is high the relationship will become negative and will remain positive when unanticipated ambiguity is low.

Stemming from the integration of Mandler's (1975) theory of interruptions and the challenge and hindrance stressors framework, the deleterious effect of interrupting demands vary depending on how disruptive the demands are to the short-term goal or task at hand and how misaligned there are with long-term goals. While challenge demands in general have been considered to be aligned with desirable long-term goals and hindrance demands are seen to impede these (Cavanaugh et al., 2000), there has been some evidence (Webster, Beehr, & Love, 2011; Widmer, Semmer, Kälin, Jacobshagen, & Meier, 2011) that not all challenge demands are beneficial to the same degree and not all hindrance demands are equally detrimental. In addition, it is also likely that the different unanticipated demands within the challenge and hindrance stressors classification vary in regard to how disruptive they are to the short-term daily goals. Thus, I suggest that the challenge stressors of time pressure and role novelty will not have the same effect on the

relationship between anticipated demands and daily job attitudes. I expect the same to be the case for the two hindrance stressors of situational constraints and ambiguity.

Recent research on stressors has found evidence that not all challenge stressors are equally appraised and evaluated as beneficial. Webster and colleagues (2011) found that demands, even if previously classified as challenging *or* hindering, can contain aspects of both challenge and hindrance to varying degrees, depending on the demand. Based on this, while all challenge demands are beneficial for achieving long-term goals and career advancement, some challenge demands may be more facilitative of this than others. Thus, I suggest that role novelty will in general be more advantageous for reaching desired personal and career outcomes than time pressure. For example, learning new skills and ways to accomplish work tasks and responsibilities through regularly experiencing role novelty is likely to be positively evaluated when considering an employee for promotion. On the other hand, writing another memo under very tight deadlines and increased time pressure would be a task that was performed numerous times before and may represent less opportunity for demonstrating abilities or learning new skills and therefore may not be seen as such a valuable opportunity as frequently experiencing role novelty. Therefore, role novelty is more likely to be perceived as more facilitative of long-term goals than time pressure. This would mean that in their role as interrupting demands, role novelty will be seen as less detrimental than time pressure. While both would be deleterious to achieving short-term goals, role novelty would at least somewhat improve employees' job experience during the day since it would be seen as more facilitative of career and professional advancement.

Hypothesis 7a-b: Unanticipated time pressure will affect the positive relationship between anticipated challenge demands and daily a) work engagement and b) goal progress satisfaction more negatively than unanticipated role responsibility.

Research into hindrance stressors has generally found evidence that ambiguity is one of the most detrimental hindrance stressors. In a meta-analysis, Gilboa and colleagues (2008) found that ambiguity had the strongest negative relationship with performance even when other stressors, such as role conflict and job insecurity, were controlled. Ambiguity is likely to stop the progress on a goal since it may create a situation where the employee would not know how to resolve a problem encountered while working on the task. Experiencing such ambiguity during the day may result in an intense and paralyzing negative emotion (Jett & George, 2003). For example, an employee writing an annual budget report may reach an unexpected roadblock in their work and thus be unsure how to proceed due to the absence of clear guidelines. Such an interruption under an already stressful condition of high anticipated challenge demands would then severely hinder goal progress. In addition, such a roadblock is less likely to be resolved in a relatively effortless or fast manner since it may require a series of complex thought processes to be resolved. On the other hand, while situational constraints, such as working with outdated equipment, can be a nuisance and slow down work progress, they are less likely to stop progress completely and require large amounts of cognitive energy to be directed towards resolving an issue, as is the case with experiencing ambiguity. According to Mandler's (1975) theory of interruptions, a less

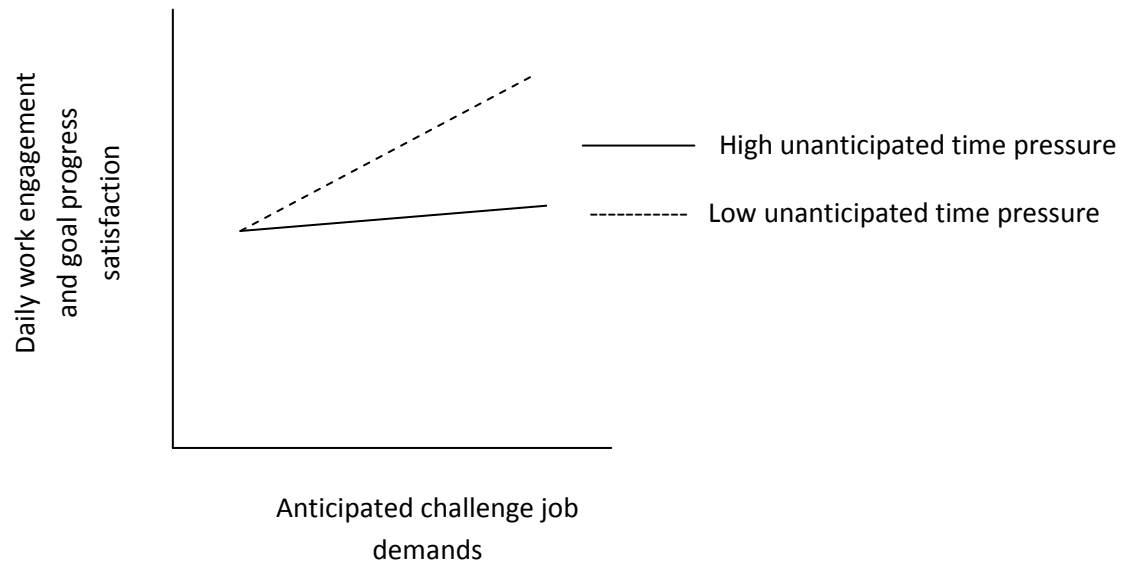
distracting and cognitively intense interruption would create less of a detrimental situation than one that is more so. Situational constraints are less likely to require intense effort by employees to come up with solutions for how to resolve them and thus may not create as detrimental a situation as when employees do not know how to proceed with goal progress, as is the case with ambiguity. Thus,

Hypothesis 8a-b: Unanticipated ambiguity will affect the positive relationship between anticipated challenge demands and daily a) work engagement and b) goal progress satisfaction more negatively than unanticipated situational constraints.

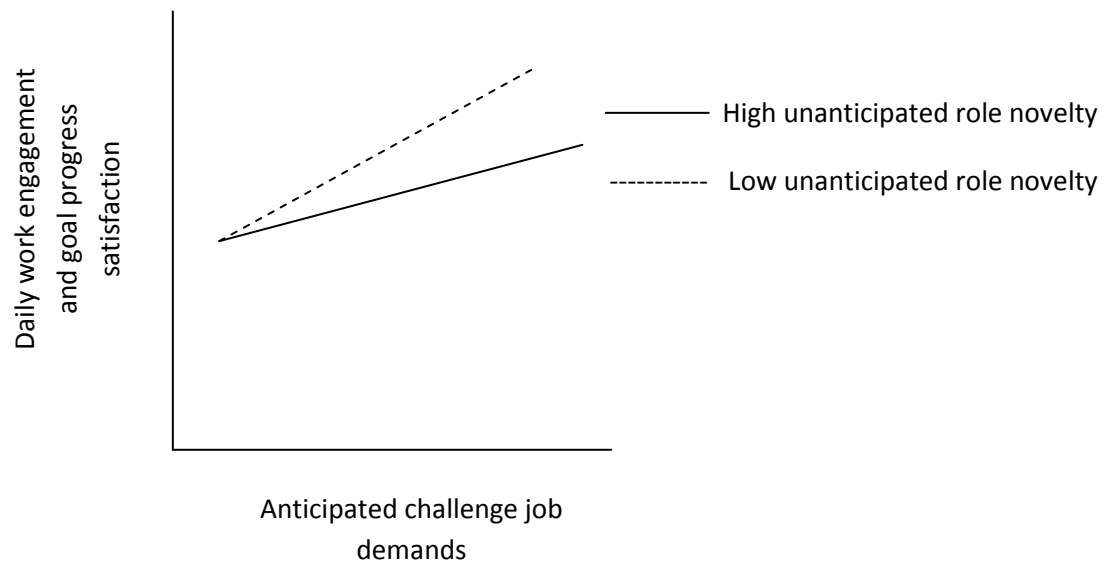
Illustrations of the proposed moderating effects are presented in Figures 2a-b and 3a-b.

Figures 2 a-b

Expected Results for the Interaction between Anticipated Challenge Demands and Unanticipated Time Pressure

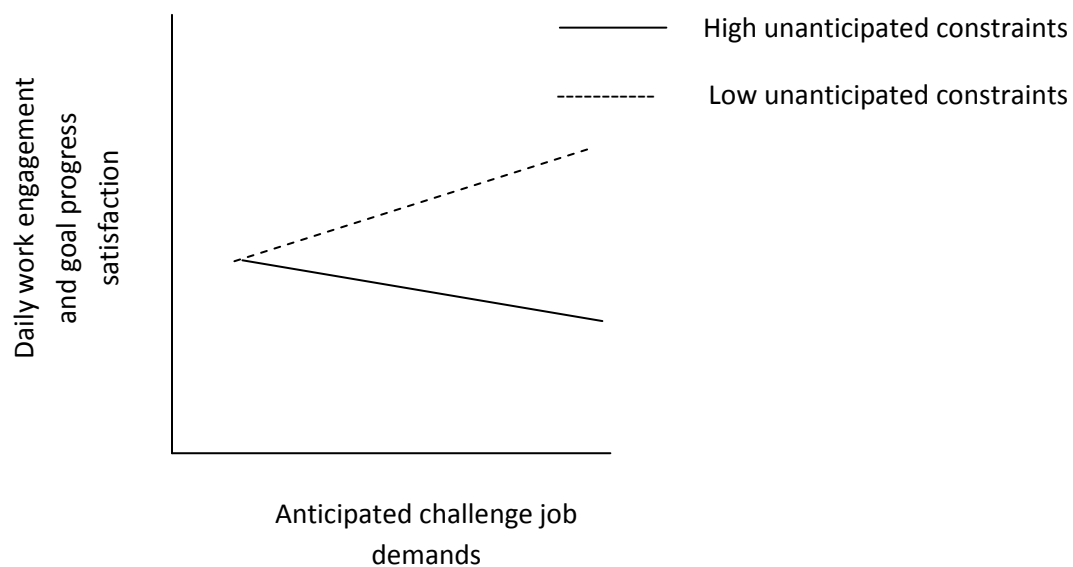


Expected Results for the Interaction between Anticipated Challenge Demands and Unanticipated Role Novelty

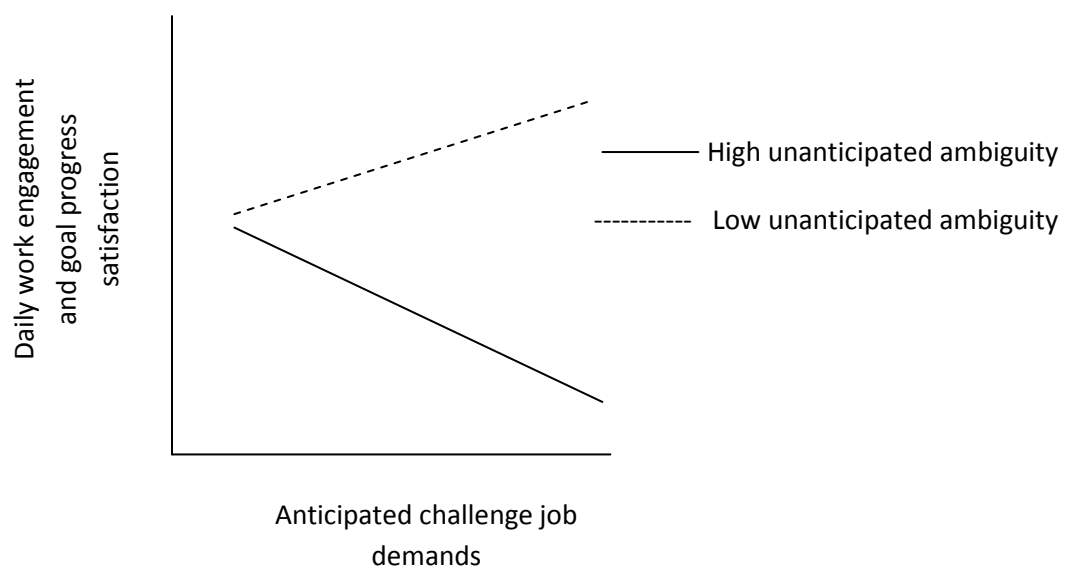


Figures 3 a-b

Expected Results for the Interaction between Anticipated Challenge Demands and Unanticipated Situational Constraints



Expected Results for the Interaction between Anticipated Challenge Demands and Unanticipated Ambiguity



Methods

Data Collection and Sample

Participants for this diary study were recruited from small organizations operating in the field of engineering, architecture and finance in Bulgaria. These industries were chosen since employees are more likely to engage in project based work and thus be able to assess what demands they anticipate to have within a given work day and also have the ability to evaluate whether they are satisfied with progress towards a certain daily goal. The managers of these organizations were contacted and, if willing to participate, were asked to forward the first survey to their employees. As an incentive for the organizations, I offered feedback about study results. The participants themselves were entered into a lucky draw to win an Apple iPad.

Participants were asked to first complete a general survey to assess demographics and general level of job control. Then, for two consecutive weeks, participants had to complete two surveys a day (morning and afternoon) for at least five work days. The specific weeks differed across participants. Each day the morning survey was sent out before 6am, followed by the afternoon survey at 3pm. The morning survey assessed the levels of challenge demands participants expected to have during the day. The afternoon survey asked about unanticipated demands experienced during the day and participants' work engagement and goal progress satisfaction.

The general survey was completed by 114 individuals and out of these 101 participated in the daily diary study. The final sample consisted of 52 participants who completed two surveys a day for all the required five days and within the required times of the day. Thus the data set contains data for 260 days nested within 52 individuals.

The final sample of 52 participants was from 28 organizations and participants per organization ranged between 1 and 4. The majority of participants were women (71%). The average age was 42 years. Most of the participants had a Master's degree (87%). In terms of position within the organization, 37% were top-management, 26 % middle to low management, and 37% had non-management positions. Average job tenure was 7 years and participants worked 46 hours a week on average. With respect to family status, the majority (69%) was married or in a committed relationship and 60% had at least one child.

Measures

Data was collected at the day and person levels. All items were in Bulgarian. The survey was translated from English to Bulgarian and then translated back to English per recommendations by Brislin (1970) to ensure that survey items have the same meaning in both languages. Means, standard deviations, correlations, and reliabilities for the study variables are presented in Table 1.

Day-level measures. Daily anticipated challenge demands (an overall measure) were collected in the morning and daily unanticipated demands (*i.e.*, time pressure, role novelty, situational constraints, and role ambiguity), goal progress satisfaction and work engagement were collected in the afternoon.

Day-specific *work engagement* was measured by adapting Rothbard's (2001) work engagement scale to reflect daily assessment. The original nine-item scale was shortened to four items in order to decrease the time required to complete the daily afternoon survey and the burden on participants, as is often done in daily diary studies (*e.g.*, To, Fisher, Ashkanasy, & Rowe, 2012). This is a 5-point Likert scale (1-strongly

disagree to 5-strongly agree). The four items chosen since they best represent the content domain of the complete work engagement scale are “Today, I focused a great deal of attention on my work; Today, I concentrated a lot on my work; Today, I often got carried away by what I was working on; When I was working today, I was completely engrossed by my work.” Cronbach’s alpha across days ranged between .85 and .90 ($M = .87$).

Daily goal progress satisfaction was measured by first asking respondents to provide one goal in the morning that they were planning to achieve during the day. In the afternoon, respondents were asked to rate their satisfaction with achieving this goal (1-very dissatisfied to 5 – very satisfied) (“Please rate the degree to which you feel satisfied with your progress towards achieving your work goal for the day”).

Anticipated challenge demands were measured by adapting Rodell and Judge’s (2009) daily challenge stressors scale (originally adapted from Cavanaugh et al., 2010) to reflect anticipation of these demands. This is a 5-point Likert scale (1-strongly disagree to 5-strongly agree) and consists of eight items. A sample item is “Today, my job will require me to work very hard.” Cronbach’s alpha ranged between .80 and .86 ($M = .84$).

Unanticipated time pressure is assessed using a scale by Semmer (1984) adapted to reflect unanticipated demands. This is a 5-point Likert scale (1-not at all to 5-to a great extent) and consists of three items. A sample item is “Today, I unexpectedly was required to work fast.” Cronbach’s alpha ranged between .77 and .92 ($M = .83$).

Unanticipated role novelty was adapted from Nicholson and West (1988) to be assessed at the day-level. Participants were asked to reflect how different their work was today from their usual work. This is a four item scale measured on a 5-point Likert scale (1-not at all to 5-to a great extent). A sample item is “Today, I unexpectedly had to use

different methods than those I usually use to do the job.” Cronbach’s alpha ranged between .84 and .90 ($M = .88$).

Unanticipated situational constraints were assessed using a scale by Semmer (1984) adapted to reflect unanticipated demands. This is a four item scale measured on a 5-point Likert scale (1-not at all to 5-to a great extent). A sample item is “Today, I unexpectedly had to work with materials and information that were incomplete and outdated.” Cronbach’s alpha ranged between .82 and .91 ($M = .87$).

Unanticipated ambiguity was adapted from Zohar (1997) to reflect the daily context and the unanticipated aspect of the demand. The measure consists of five items. This is a 5-point Likert scale (1- not at all to 5- to a great extent). A sample item is “Today, I unexpectedly was unsure how to solve a problem.” Cronbach’s alpha ranged between .83 and .90 ($M = .87$).

I controlled for diary days (*time*) (1-5 days) in order to test for whether work engagement and goal progress satisfaction might change as a function of days elapsed during the study duration.

Person-level measures. Person-level variables collected at the beginning of the study, before distributing the daily diary studies, were included in the analysis as controls in order to take person-level differences into account when predicting daily work engagement and goal progress satisfaction. Level of *job control* can vary across individuals and could influence the degree to which people feel engaged during the work day (Bakker & Demerouti, 2007) and the degree of their satisfaction with achieving daily work goals. I assessed job control using Karasek’s (1979) four-item scale. This is a 5-point Likert scale (1-never to 5-extremely often) and a sample item is “To what extent do

you have the freedom to decide how to organize your work.” Cronbach’s alpha is .82. I also controlled for relevant demographics that could also have an influence on the outcome variables. These controls were *gender* (0-male, 1-female), *weekly work hours*, *age*, and *job tenure* in years.

Table 1

Means, Standard Deviations, Mean Internal Consistency Reliabilities, and Zero-Order Correlations^a

Variable	M ^b /M ^c	SD ^b /SD ^c	1	2	3	4	5	6	7
1. Day-level engagement	3.71/3.71	0.57/0.73	(.87)	.62	.48	.33	.15	-.05	.10
2. Day-level goal progress satisfaction	3.50/3.49	0.72/1.02	.50	-	.04	.04	-.18	-.29	-.15
3. Day-level anticipated challenge demands	3.27/3.27	0.58/0.70	.42	.04	(.84)	.61	.52	.25	.44
4. Day-level unanticipated time pressure	2.48/2.47	0.83/1.09	.25	.04	.54	(.83)	.75	.56	.68
5. Day-level unanticipated situational constraints	1.94/1.93	0.76/0.90	.11	-.17	.43	.64	(.87)	.80	.82
6. Day-level unanticipated ambiguity	1.83/1.82	0.66/0.80	.01	-.23	.24	.48	.73	(.87)	.72
7. Day-level unanticipated role novelty	2.04/2.04	0.75/0.97	.12	-.13	.40	.54	.68	.67	(.88)
8. Job control	3.41/3.41	1.00/							
9. Gender	0.71/0.71	0.46/							
10. Weekly work hours	46.14/46.14	9.48							
11. Age	41.90/41.90	11.84/							
12. Job tenure	7.27/7.27	5.51/							

^a Correlations below the diagonal represent within-individual scores (day-level) (n=260); Correlations above the diagonal represent between-individual scores (person-level) (n=52). Values in parenthesis represent reliabilities. Person-level correlations of .29 or larger are significant at $p < .05$. Day-level correlations of .13 or larger are significant at $p < .05$.

^b Means and standard deviations at the person level.

^c Means and standard deviations at the day level.

Table 1 (Continued)

Means, Standard Deviations, Mean Internal Consistency Reliabilities, and Zero-Order Correlations^a

Variable	M ^b /M ^c	SD ^b /SD ^c	8	9	10	11	12
1. Day-level engagement	3.71/3.71	0.57/0.73	-.10	-.08	.01	-.18	-.17
2. Day-level goal progress satisfaction	3.50/3.49	0.72/1.02	-.39	-.02	-.13	-.18	-.22
3. Day-level anticipated challenge demands	3.27/3.27	0.58/0.70	.13	.10	.14	-.12	.02
4. Day-level unanticipated time pressure	2.48/2.47	0.83/1.09	.14	-.18	.16	.07	-.07
5. Day-level unanticipated situational constraints	1.94/1.93	0.76/0.90	.21	-.25	.18	-.09	.21
6. Day-level unanticipated ambiguity	1.83/1.82	0.66/0.80	.25	-.08	.18	.02	-.09
7. Day-level unanticipated role novelty	2.04/2.04	0.75/0.97	.33	-.05	.06	-.01	-.06
8. Job control	3.41/3.41	1.00/	(.82)	.01	.21	.17	.24
9. Gender	0.71/0.71	0.46/		-	-.06	.31	.10
10. Weekly work hours	46.14/46.14	9.48			-	.23	.21
11. Age	41.90/41.90	11.84/				-	.42
12. Job tenure	7.27/7.27	5.51/					-

^a Correlations below the diagonal represent within-individual scores (day-level) (n=260); Correlations above the diagonal represent between-individual scores (person-level) (n=52). Values in parenthesis represent reliabilities. Person-level correlations of .29 or larger are significant at $p < .05$. Day-level correlations of .13 or larger are significant at $p < .05$.

^b Means and standard deviations at the person level.

^c Means and standard deviations at the day level.

Data Analysis

To test my proposed model, I use hierarchical linear modeling in SAS in order to account for multiple levels of analysis (*i.e.*, days nested within people) (Nezlek, 2012). Since there were a few missing values for some items across days I analyzed the data using spatial power structure in order to account for the missing daily observations (Bolger & Laurenceau, 2013). The Level 1 variables (*i.e.*, day level) are anticipated challenge job demands, unanticipated challenge (*i.e.*, time pressures and role novelty) and hindrance (*i.e.*, situational constraints and ambiguity) demands, goal progress satisfaction, work engagement, and time. The Level 2 variables (*i.e.*, person level) are the controls of job control, gender, weekly work hours, age, and job tenure. The Level 1 predictors are centered using the mean value for each individual (Hofmann, Griffin, & Gavin, 2000) and the Level 2 variables are centered using the grand mean (Aiken & West, 1991). In order to assess whether multilevel analysis is in fact appropriate for the data, I examine within and between-person variation in the two outcome variables (*i.e.*, daily work engagement and goal progress satisfaction). A large proportion of the variance in work engagement (54%) and goal progress satisfaction (59%) was within-individual and thus multilevel analysis is appropriate.

Hypotheses Tests

To test the proposed relationships I compared several nested models. Results are presented in Table 2 for work engagement and Table 3 for goal progress satisfaction. Model 1 contained only the control variables. Only weekly work hours were significantly related to work engagement and none of the

controls were significantly related to goal progress satisfaction. In Model 2, I entered the main effect of anticipated challenge demands in order to test my first two hypotheses that anticipated challenge demands would contribute positively to work engagement and goal progress satisfaction, respectively. Model 2, with respect to both outcomes, showed improved fit compared to Model 1. Hypothesis 1 was supported since anticipated challenge demands were found to be significantly related to work engagement. Anticipated challenge demands accounted for 10% of the within-person variance in work engagement. However, I found no support for Hypothesis 2, where anticipated challenge demands were expected to be significantly related to goal progress satisfaction.

In terms of the proposed interaction effects of anticipated challenge demands with each of the various unanticipated daily demands (*i.e.*, time pressure, role novelty, situational constraints, and ambiguity), only the interaction between anticipated challenge demands and unanticipated role novelty in relation to goal progress satisfaction was significant at $p < .05$. This model (Model 6) also showed improved fit from the previous model (Model 5), where only the main effects were entered. Furthermore, the additional terms included in Model 6 compared to Model 2 accounted for an additional 4% of the within-person variance in daily goal progress satisfaction. In order to further interpret the pattern of this interaction I conducted simple slope tests and visually depicted the relationship (Figure 2) (Preacher, Curran, & Bauer, 2006). As presented in Figure 2, on days when employees encounter high levels of unanticipated role novelty, the relationship between anticipated challenge demands and goal progress

satisfaction at the end of the work day is negative and significant ($\gamma = -.53$; $SE=.27$; $p<.05$). On the other hand, on days when unanticipated role novelty is low, the relationship between anticipated challenge demands and daily goal progress satisfaction is positive and significant ($\gamma = .32$; $SE=.16$; $p<.05$).

However, Hypothesis 4b is not supported, since it was expected that high levels of unanticipated role novelty will only decrease the strength of the positive association between anticipated challenge demands and goal progress satisfaction and will not in fact lead to a negative association between the two as the results show. Thus Hypotheses 3a-b, 4a-b, 5a-b, and 6a-b were not supported.

Finally, since none of the hypothesized interactions was significant, I could not provide support for Hypotheses 7 and 8, where the strength of the moderating effect of each demand on the relationship between anticipated challenge demands and the daily outcomes was compared across demands.

Table 2

Multilevel Estimates for Models Predicting Daily Work Engagement

Parameter ^a	Model 1		Model 2		Model 3		Model 4		Model 5	
	Estimate ^b	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.70***	.08	3.71***	.08	3.71***	.08	3.69***	.08	3.72***	.08
<i>Controls</i>										
Time	-.01	.03	.01	.03	-.01	.03	-.01	.03	.01	.03
Job control	.14	.08	.14	.08	.13	.08	.13	.09	.12	.08
Gender	-.04	.19	-.02	.19	-.02	.19	-.02	.19	-.04	.19
Work hours	.02*	.01	.02*	.01	.02*	.01	.02*	.01	.02*	.01
Age	-.01	.01	-.01	.01	-.01	.01	-.01	.01	-.01	.01
Job tenure	-.01	.01	-.01	.02	-.01	.02	-.01	.02	-.01	.02
<i>Main effects</i>										
Anticipated challenge demands (CD)			.34***	.10	.33**	.10	.40***	.10	.25*	.10
Unanticipated time pressure (TP)					.03	.06	.01	.05		
Unanticipated role novelty (RN)									.06	.07
Unanticipated situational constraints (SC)										
Unanticipated ambiguity (A)										
<i>Interaction effects</i>										
CD x TP							.19	.11		
CD x RN										
CD x SC										
CD x A										
-2*log (lh)	475.8		454.5		448.0		447.9		436.5	
Δ -2*log			21.3***		6.05***		0.1		18	
Δ df			1		1		1		1	

^a Job control, gender, work hours, age, and job tenure are person-level (Level 2) variables. All other variables are at the day level (Level 1).

^b Unstandardized estimates.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 2 (Continued)

Multilevel Estimates for Models Predicting Daily Work Engagement

Parameter ^a	Model 6		Model 7		Model 8		Model 9		Model 10	
	Estimate ^b	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.72***	.08	3.70***	.08	3.70***	.08	3.70***	.08	3.70***	.08
<i>Controls</i>										
Time	.01	.03	.01	.03	.01	.03	.01	.03	.01	.03
Job control	.12	.08	.14	.08	.14	.08	.13	.08	.13	.09
Gender	-.04	.19	-.02	.19	-.02	.19	-.04	.19	-.04	.19
Work hours	.02*	.01	.02*	.01	.02*	.01	.02	.01	.02	.01
Age	-.01	.01	-.01	.01	-.01	.01	-.01	.01	-.01	.01
Job tenure	-.01	.02	-.01	.02	-.01	.02	-.01	.02	-.01	.02
<i>Main effects</i>										
Anticipated challenge demands (CD)	.25*	.10	.35**	.10	.34**	.11	.34***	.09	.33**	.10
Unanticipated time pressure (TP)										
Unanticipated role novelty (RN)	.06	.07								
Unanticipated situational constraints (SC)			-.06	.07	-.05	.08				
Unanticipated ambiguity (A)							.03	.09	.03	.09
<i>Interaction effects</i>										
CD x TP										
CD x RN	.03	.16								
CD x SC					-.04	.25				
CD x A									.09	.21
-2*log (lh)	438.3		452.6		453.5		446.2		447.4	
Δ -2*log	1.8		1.9		0.9		8.3***		1.2	
Δ df	1		1		1		1		1	

^a Job control, gender, work hours, age, and job tenure are person-level (Level 2) variables. All other variables are at the day level (Level 1).

^b Unstandardized estimates.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 3
Multilevel Estimates for Models Predicting Daily Goal Progress Satisfaction

Parameter ^a	Model 1		Model 2		Model 3		Model 4		Model 5	
	Estimate ^b	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.47***	.11	3.47***	.11	3.47***	.11	3.48***	.11	3.49***	.11
<i>Controls</i>										
Time	.01	.03	.02	.04	-.01	.04	-.01	.04	.03	.04
Job control	.19	.11	.21	.11	.21	.11	.20	.11	.19	.12
Gender	-.17	.24	-.15	.25	-.15	.25	-.15	.25	-.14	.26
Work hours	-.01	.01	-.01	.01	-.01	.01	-.01	.01	-.01	.01
Age	-.01	.01	-.01	.01	-.01	.01	-.01	.01	-.01	.01
Job tenure	-.01	.01	-.01	.02	-.01	.02	-.01	.02	-.01	.02
<i>Main effects</i>										
Anticipated challenge demands (CD)			.09	.14	.07	.16	.05	.17	.08	.15
Unanticipated time pressure (TP)					.03	.10	.03	.10		
Unanticipated role novelty (RN)									-.11	.10
Unanticipated situational constraints (SC)										
Unanticipated ambiguity (A)										
<i>Interaction effects</i>										
CD x TP							-.11	.18		
CD x RN										
CD x SC										
CD x A										
-2*log (lh)	662.3		639.4		633.9		635.2		609.7	
Δ -2*log			22.9***		5.5***		1.1		29.7***	
Δ df			1		1		1		1	

^a Job control, gender, work hours, age, and job tenure are person-level (Level 2) variables. All other variables are at the day level (Level 1).

^b Unstandardized estimates.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 3 (Continued)

Multilevel Estimates for Models Predicting Daily Goal Progress Satisfaction

Parameter ^a	Model 6		Model 7		Model 8		Model 9		Model 10	
	Estimate _b	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.53***	.11	3.47***	.11	3.49***	.11	3.47***	.11	3.48***	.11
<i>Controls</i>										
Time	.02	.04	.01	.04	.01	.04	.01	.04	.01	.04
Job control	.18	.11	.22	.11	.23*	.11	.21	.11	.21	.11
Gender	-.19	.25	-.15	.25	-.14	.25	-.17	.25	-.16	.25
Work hours	-.01	.01	-.01	.01	-.01	.01	-.01	.01	-.01	.01
Age	-.01	.01	-.01	.01	-.01	.01	-.01	.01	-.01	.01
Job tenure	-.01	.02	-.01	.02	-.01	.02	-.01	.02	-.01	.01
<i>Main effects</i>										
Anticipated challenge demands (CD)	.15	.14	.14	.14	.08	.15	.12	.17	.13	.16
Unanticipated time pressure (TP)										
Unanticipated role novelty (RN)	-.12	.09								
Unanticipated situational constraints (SC)			-.23	.14	-.22	.13				
Unanticipated ambiguity (A)							-.28	.15	-.28	.14
<i>Interaction effects</i>										
CD x TP										
CD x RN	-.62**	.23								
CD x SC					-.63	.37				
CD x A									-.28	.32
-2*log (lh)	604.0		623.2		620.6		614.9		614.7	
Δ -2*log	5.7***		16.2***		2.6*		24.5***		0.02	
Δ df	1		1		1		1		1	

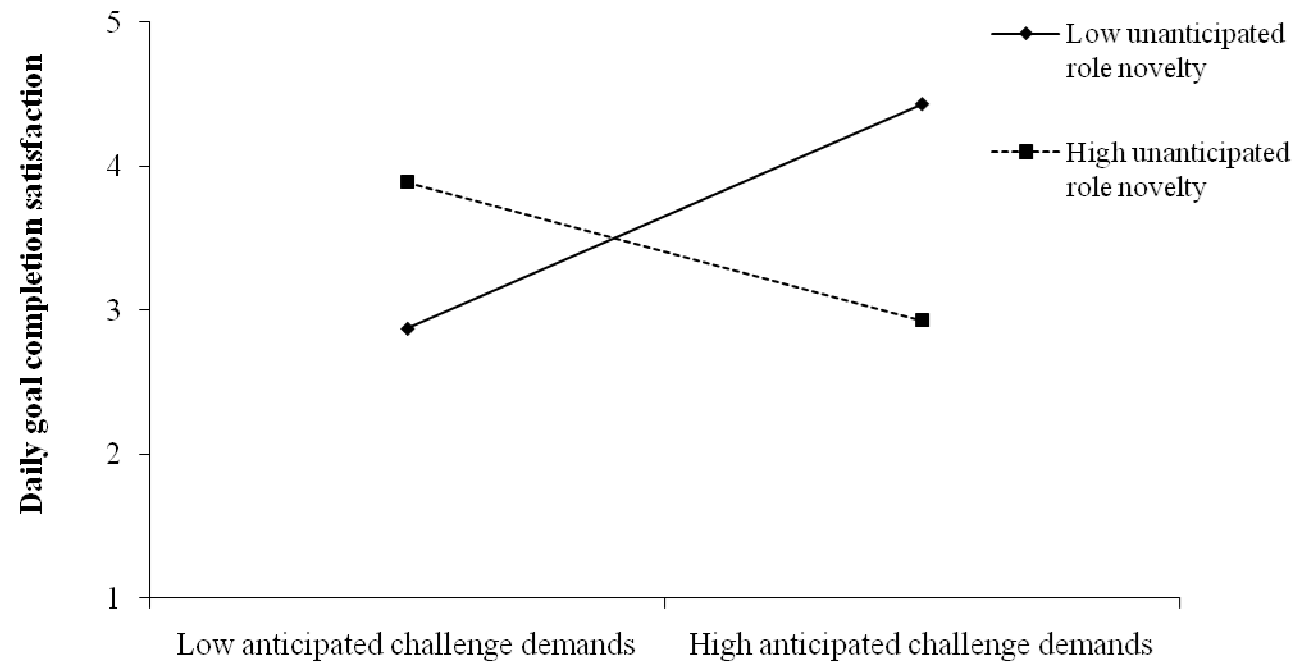
^a Job control, gender, work hours, age, and job tenure are person-level (Level 2) variables. All other variables are at the day level (Level 1).

^b Unstandardized estimates.

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 4

Interaction Effect of Anticipated Challenge Demands and Unanticipated Role Novelty on Daily Goal Progress Satisfaction



Discussion

The aim of this study was to examine the dynamic effects of work stressors. Based on an integration of Mandler's (1975) theory of interruptions and the challenge and hindrance stressors framework, I consider the interplay between daily challenge and hindrance demands on employees' work engagement and goal progress satisfaction. While it is generally considered that challenge stressors would have a positive effect on desired work outcomes and hindrance stressors would have a negative influence (Cavanaugh et al., 2000), I suggested that both challenge and hindrance stressors will be deleterious if they are unanticipated and are encountered when employees are already in a challenging situation.

As expected, based on the challenge and hindrance stressors framework, the anticipation of having high levels of challenge demands during the day was significantly related to increased daily work engagement; however, there was no association with respect to goal progress satisfaction at the end of the work day. Incorporating Mandler's (1975) theory of interruptions, I expected that encountering unanticipated demands during the work day, when already experiencing challenges, would result in a detrimental situation that would be deleterious to achieving high levels of work engagement and satisfaction with daily goal progress. Results indicated that the moderating effect of unanticipated role novelty on the relationship between anticipated challenge demands and goal progress satisfaction was significant, but not in the direction expected. As predicted, when low levels of unanticipated role novelty were experienced during the day, anticipated challenge demands were positively associated with goal progress satisfaction at the end of the work day since employees' work flow was not interrupted due to the

need to stop and learn a new method or skill. However, I did not expect that when unanticipated role novelty during the day is high it would have such a detrimental effect that it would change the direction of the relationship between anticipated challenge demands and goal progress satisfaction from positive to negative but only that it would decrease the strength of the positive relationship between the two. I predicted that such a deleterious effect would be the result of encountering unanticipated hindrance demands (*i.e.*, situational constraints and ambiguity) and not when facing unanticipated challenge demands, such as role novelty. Thus it is possible that the deleterious effect from an interrupting and unexpected demand during the day is so strong that whether the interruption is caused by a challenge or hindrance demand does not matter. Contrary to expectations, I did not find any significant interaction effects of the specific unanticipated demands of time pressure, situational constraints and role ambiguity with anticipated challenge stressors. Since only one of the hypothesized interactions was significant, this study cannot provide support for the proposed integration of Mandler's (1975) theory of interruptions and the challenge and hindrance stressors framework. Thus the evidence that experiencing unanticipated interrupting demands within an already challenging work day will be deleterious to daily work engagement and goal progress satisfaction is at best very limited.

Theoretical Implications

Since the introduction of the challenge and hindrance stressors framework scholars have assumed that challenge stressors would always be positively associated with beneficial work outcomes, while hindrance stressors would have a negative relationship with these outcomes (*e.g.*, Cavanaugh et al., 2000; LePine et al., 2005).

However, in this study I suggested that when demands are unanticipated and when they are experienced under already challenging circumstances, employees' work flow will be disrupted, no matter the type of unanticipated demand, to the extent of diminishing their satisfaction with accomplishing important daily goals, as well as their daily engagement in work activities. Results from this study did not provide sufficient support for the proposition that specific challenge and hindrance demands, when experienced as unanticipated events during day and when employees are already under stress due to preexisting demands, would represent a deleterious work flow interruption. Thus I could not provide sufficient evidence for the proposition that challenge demands would not have the usually assumed beneficial effects if encountered unexpectedly in an already challenging situation. In this study, this was only the case for the unanticipated challenge demand of role novelty in relation to goal progress satisfaction.

I further proposed that the challenge stressors of role novelty and time pressure would not be equally detrimental and time pressure would be in fact more deleterious. The same was suggested for the hindrance stressors of situational constraints and ambiguity, where ambiguity would be the more harmful one. Since only one of the hypothesized interactions was significant, the evaluation of the above propositions is problematic. However, it can be inferred that since the interaction containing role novelty was significant while the interactions with other demands are not, the challenge demand of role novelty is different than the other demands. Most notably, role novelty is different than time pressure, which is also classified as a challenge demand. Thus, while results are inconclusive, there is the possibility that different challenge demands do not have

equivalent effects on individuals, as previously assumed in management literature (Cavanaugh et al., 2000).

Limitations and Future research

A possible theoretical limitation is that the independent variable of anticipated challenge stressors represents a global measure of the challenge demands that employees could encounter on a daily basis. The reason for not selecting a more specific measure, which would assess different anticipated stressors, was to decrease complexity and put the focus on unanticipated stressors instead. However, future research can further break down the proposed model and test more specific interactions, for example, the joint effect of anticipated and unanticipated role novelty on various work outcomes.

Since I did not find significant interactions when time pressure, situational constraints, and ambiguity were considered, it is possible that some other demands could have a stronger influence on employees when encountered as unanticipated interruptions during the day. While the above demands were specifically chosen since employees are likely to encounter them on a day to day basis, other demands could also be tested in the future. For example, a possible challenge demand could be role responsibility and a possible hindrance demand could be hassles. However, an additional problem is that no measures currently exist for these demands that could be easily adapted to fit analysis at the day level.

It is also possible that the degree to which interrupting unanticipated demands are seen as detrimental depends on personal differences. The transactional theory of stress (Lazarus & Folkman, 1984), on which the challenge and hindrance stressors framework is based, suggests that individual factors will qualify the effects of stressors on

individuals. According to this theory, differences between people can affect their cognition and thus affect the way they interpret stressful events. In the context of daily anticipated challenge demands and unanticipated interrupting job demands, the tendency of individuals for accomplishment striving or Type A behavior, for example, can be relevant in stressful situations. Such individuals tend to be more goal-oriented and thus they may be more detrimentally affected by a delay in task progress due to encountering unanticipated demands. For example, Rogelberg and colleagues (2006) found that employees who are high on accomplishment striving are more likely to perceive work meetings as hindering interruptions to their workflow. In addition, Kirmeyer (1988), found evidence that individuals with Type A behavior would be more severely affected by interruptions than others who were low on this personality pattern. Thus future research can look at personal differences such as these in order to further understand the interplay among work demands within the work day.

In terms of methodological limitations, it is possible that the results might be inflated by common method variance since the measures are assessed by the same source (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However since the independent variable of anticipated challenge demands and the dependent variables of goal progress satisfaction and work engagement are collected at two different time points during the work day (*i.e.*, morning and afternoon, respectively), the likelihood of common method bias decreases (Podsakoff et al., 2003). In addition, group mean centering (*i.e.*, centering the Level 1 within-individual variables relative to each individual's mean score) also decreases the possibility of common method bias (Podsakoff et al., 2003; Rodell & Judge, 2010).

Another limitation is that daily goal progress satisfaction was measured with one item “Please rate the degree to which you feel satisfied with your progress towards achieving your work goal for the day.” While this does not allow for calculation of inter-item reliability, it is appropriate for the purpose of this study since the goal was to assess how satisfied employees are with their progress in relation to one specific daily goal. Thus goal progress satisfaction did not need to capture a broader content domain, as is the case with more general attitudinal measures.

Generalizability of the findings may also be limited to some extent since data is collected in Bulgaria. This may require the study to be replicated in the future with employees from different countries in order to generalize the findings to a larger population of employees. In addition, current participants were only representative of three industries (*i.e.*, finance, engineering, and architecture), thus further replication of the study findings with employees from a greater variety of industries could be beneficial.

Finally, it is possible that while the number of within-individual observations was 260, the small sample size of 52 for between-individual scores was not enough to detect the complex interaction effects proposed. Conducting this study with a larger sample size could possibly provide greater power for finding significant interactions.

Practical Implications

While daily job outcomes might fluctuate, they are likely to affect the more stable job outcomes as well and thus be meaningful in the long-term (Kühnel, Sonnentag, & Bledow, 2011; Ohly & Fritz, 2010). Therefore, it is necessary to understand how daily satisfaction with achieving work goals and daily work engagement are influenced by daily work demands. Results in general do not provide support that encountering

unanticipated work demands in an already challenging situation would have a deleterious effect on daily work outcomes. Thus this study cannot provide sound suggestions for organizations in relation to the management of daily interrupting demands.

Conclusion

Through combining the challenge and hindrance stressors framework (Cavanaugh et al., 2000) and Mandler's (1975) theory of interruptions, I suggested that within a given work day, no matter whether challenge or hindrance type demands are encountered, if these are unexpected and experienced already in the context of a highly challenging situation, they would represent deleterious interruptions to work flow. Thus the usual benefits associated with experiencing work demands of a challenging nature (*e.g.*, role novelty, time pressure) would not be present, while on the other hand hindrance demands (*e.g.*, situational constraints, ambiguity) would have even more deleterious effects than usual. Results provide limited support in that encountering unexpected role novelty during the work day when already experiencing high levels of challenge demands would have a deleterious effect on employees' satisfaction with daily goal progress. Thus this study could not provide sufficient evidence for amending the challenge and hindrance stressors framework with the proposition that challenge demands would not have beneficial effects if encountered in an already challenging situation.

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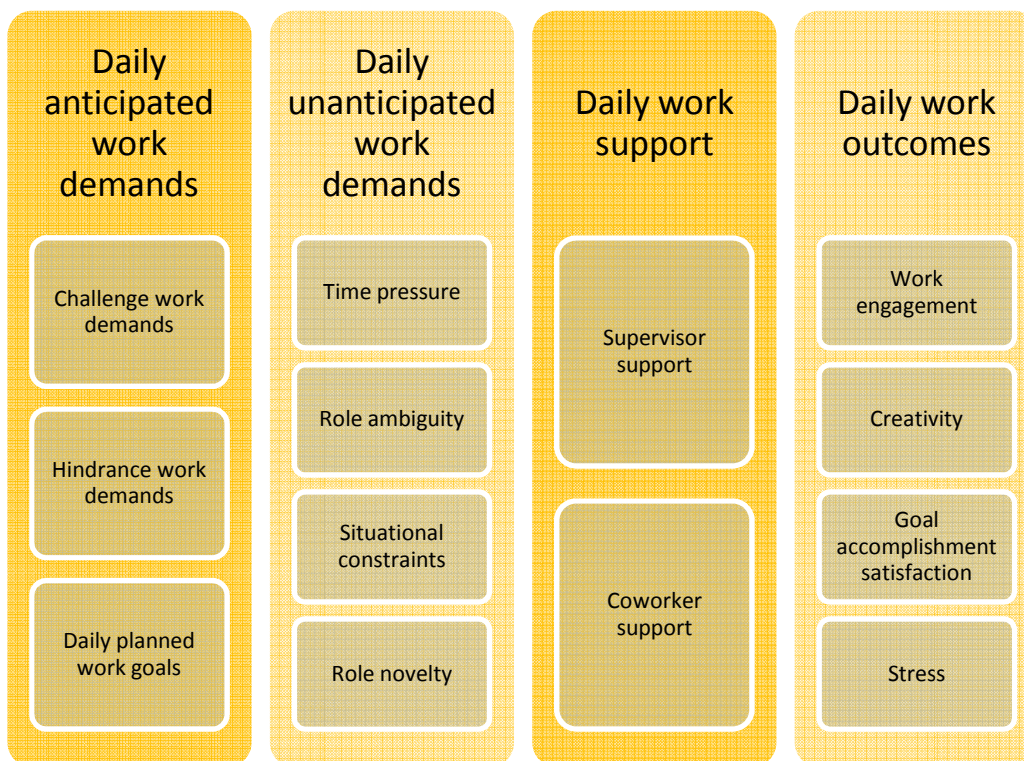
APPENDIX A*Correspondence*

Dynamic Effects of Daily Work Demands



We are interested in understanding the influence of daily work demands on key work outcomes, such as employee engagement and creativity – *to help firms ensure that employees have a productive and enjoyable work day, every day.* Although research generally recognizes that some demands are motivating, we are not sure what happens when employees experience multiple demands at the same time. To understand this reality of the workplace, we examine the effects of both anticipated and unanticipated work demands on employees' daily work outcomes. We also consider the role of social support in this process.

Below are the main daily work events that will be examined in this study.



What does participation in this study require?

Your participation in this project will simply require you to help us direct your employees to online surveys, and to offer them the chance to participate. Since we are collecting daily data, we will need employees to commit to completing very short surveys twice a day for five consecutive work days. In addition, there will be a pre-study survey and a post-study survey, which will be administered a few days before and after the daily data collection. These surveys will only take about 15-20 minutes to complete; the daily surveys will take only about 5 minutes to complete. As a token of appreciation for their participation, employees will each have the chance to win one Apple iPad4.

All employee responses will remain confidential. To further protect privacy, firm names will not be shared with anyone outside the research team.

How will this benefit your company?

In return for your cooperation with the survey administration, we will provide you with feedback on our findings. Throughout this report, *company and employee names will remain anonymous*. This report will include:

- A summary of the overall survey results
- Suggestions for improving employees' experiences during the work day
- Suggestions for facilitating overall work engagement and creativity at your company and reducing employee stress

Who are the study researchers?

Dr. Margaret Shaffer
University of Wisconsin-Milwaukee

Mihaela Dimitrova
University of Wisconsin-Milwaukee

For more information, contact:

Mihaela Dimitrova
Sheldon B. Lubar School of Business
University of Wisconsin-Milwaukee
Milwaukee, WI USA 53201-0742

Tel/Fax: + 1(414) 737-9013/ (+359)
889-428-792
E-mail: mihaela@uwm.edu

Initial Letter to Participants

Dynamic Effects of Daily Work Demands

Dear (insert company name) employee,

Are your work days productive and enjoyable? We believe that the type and timing of work demands you face during the day play a key role in whether or not you have a good day at work. To find out more about how your daily work demands affect you and your work, we are conducting a research study and we need your help!

If you agree to participate, you will be asked to complete a series of online surveys. For five consecutive work days you will be asked to complete one survey in the morning (5 minutes) and one survey in the afternoon (10 minutes). These surveys will ask about work experiences during the day. In addition, there will be an initial 15-20 minute survey and a 10-15 minute survey at the end of this study so we can learn more about you and your work.

As an expression of our gratitude for your participation in this study, you will be eligible to participate in a lucky draw to win one Apple iPad4. Each time you complete a survey, your name will be entered in the drawing. If you participate in all 12 surveys, your name will be entered 12 times.

If you agree to participate, just go to *this link* and complete the first survey. It will only take you about 20 minutes.

Your participation in this study is voluntary. Your responses will be **confidential**, and will be used only for research purposes. We assure you that no one, not even your employer, will be allowed access to your completed questionnaire.

Thank you for your time and your honest responses! The results of this study will be internationally disseminated and will help organizations shape an engaging work day, every day, for employees.

If you have any questions about this research, please contact Mihaela Dimitrova (mihaela@uwm.edu) or Dr. Margaret Shaffer (shafferm@uwm.edu). *If you have questions about your rights as a research participant, you may contact the University of Wisconsin Milwaukee Institutional Review Board at 414-229-3173.*

Sincerely,
Mihaela Dimitrova, ABD

PhD Candidate
Lubar School of Business
University of Wisconsin-Milwaukee

Additional iPad drawing information:

Pursuant with the laws of the State of Wisconsin and University of Wisconsin System policy, participation in the study is not needed to be eligible to enter the drawing. You may alternatively enter the drawing by mailing your full name, email address, and telephone number, with a notation "Drawing Entry" to:

University of Wisconsin-Milwaukee, Sheldon B. Lubar School of Business
Attn: Ms. Mihaela Dimitrova – Drawing Entry
PO Box 742
Milwaukee, WI 53201

Such entries must be postmarked by September XX, 2013. Limit one entry per person. Prizes shall be evaluated pursuant to the laws of the State of Wisconsin. Void where prohibited.

Consent Form (Appears in the Beginning of the Online Survey)

Study Title: Dynamic Effects of Daily Work Demands

Persons Responsible for Research: Dr. Margaret Shaffer and Mihaela Dimitrova

Study Description: The purpose of this research study is to examine influences of daily work demands on employees and work outcomes. Approximately 150 subjects will participate in this study. If you agree to participate, you will be asked to complete a series of online surveys. For five consecutive work days you will be asked to complete one survey in the morning (5 minutes) and one survey in the afternoon (10 minutes). These surveys will ask about work experiences during the day. In addition, there will be an initial 15-20 minute survey so we can learn more about you and your work. At the end of the study you will be asked to complete a final 10-15 minute survey about your attitudes towards your work.

Risks / Benefits: Risks to participants are considered minimal. Collection of data and survey responses using the Internet involves the same risks that a person would encounter in everyday use of the Internet, such as breach of confidentiality. While the researchers have taken every reasonable step to protect your confidentiality, there is always the possibility of interception or hacking of the data by third parties that is not under the control of the research team.

There will be no costs for participating.

As an expression of our gratitude for your participation in this study, you will be eligible to participate in a lucky draw to win one Apple iPad4. Each time you complete a survey, your name will be entered in the drawing. If you participate in all 12 surveys, your name will be entered 12 times. Winning participants will receive the iPad directly from the researchers and confidentiality will be ensured.

Limits to Confidentiality: Identifying information such as your name and e-mail will be collected for research purposes so that the surveys you have completed can be matched. Data will be retained on the Qualtrics website until the end of the study (approximately 2 months) and will be deleted after this time. However, data may exist on backups or server logs beyond the timeframe of this research project. Data transferred from the survey site will be saved in an encrypted format for five years. Only Dr. Shaffer and Ms. Dimitrova will have access to the data collected by this study. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records. The research team will remove your identifying information after linking the data and all study results will be reported without identifying information so that no one viewing the results will ever be able to match you with your responses.

We assure you that no one, not even your employer, will be allowed access to your completed questionnaire.

Voluntary Participation: Your participation in this study is voluntary. You may choose to not answer any of the questions or withdraw from this study at any time without penalty. Your decision will not change any present or future relationship with the University of Wisconsin-Milwaukee. Your employer will not know if you have participated or not and your participation will not affect your relationship with your employer.

Who do I contact for questions about the study: For more information about the study or study procedures, contact Ms. Mihaela Dimitrova at mihaela@uwm.edu or Dr. Margaret Shaffer at shafferm@uwm.edu.

Who do I contact for questions about my rights or complaints towards my treatment as a research subject? Contact the UWM IRB at 414-229-3173 or irbinfo@uwm.edu

Research Subject's Consent to Participate in Research:

By entering this survey, you are indicating that you have read the consent form, you are age 18 or older and that you voluntarily agree to participate in this research study.

Thank you!

Letter to Participants in the Beginning of the Daily Surveys

Dynamic Effects of Daily Work Demands

Dear (insert name),

Thank you for completing the first survey for our research study on daily employee work experiences! As we explained in our first email to you, we want to fully understand the way daily demands affect you and your work. To achieve this, we need you to answer two very short surveys (5-10 minutes) **each day for five consecutive work days**. If you agree to participate in this phase of the study, please complete the **first daily survey** *before you arrive at work in the morning or just after you arrive*. Please complete the **second daily survey** – in the *afternoon just before you leave work*.

We know you are really busy and it may slip your mind to complete the surveys, so we will send you daily e-mail reminders. So, don't be surprised when you hear from us every day. We're not trying to be a pest – we are just conscientious researchers.

As an expression of our gratitude for your participation in this study, you will be eligible to participate in a lucky draw to win one Apple iPad4. Each time you complete a survey, your name will be entered in the drawing. If you participate in all 12 surveys, your name will be entered 12 times.

As with the previous survey, your participation is voluntary. Your responses will be **confidential**, and will be used only for research purposes.

Please go to *this link* in the morning before you go to work (or soon after you arrive at work) and complete the first daily survey.

You can access all subsequent daily surveys from the link above.

Thank you again for your time and your honest responses! If you have any questions about this research, please contact Mihaela Dimitrova (mihaela@uwm.edu) or Dr. Margaret Shaffer (shafferm@uwm.edu). *If you have questions about your rights as a research participant, you may contact the University of Wisconsin Milwaukee Institutional Review Board at 414-229-3173.*

Sincerely,

Mihaela Dimitrova, ABD
PhD Candidate
University of Wisconsin-Milwaukee

APPENDIX B

Study Variables Codebook

Morning Survey

Anticipated daily challenge job demands

Source: adapted from Rodell & Judge (2009)

Scale: 1 = strongly disagree to 5 = strongly agree

Please indicate how much you agree with the following statements about the tasks you anticipate at work today.

Today, I anticipate that...

1. I will have to work on a large number of projects and/or assignments.
2. my job will require me to work very hard.
3. it will be difficult to accomplish the volume of work that must be done.
4. I will experience severe time pressures in my work.
5. I will feel the pressure of the amount of responsibility I have at work.
6. I will be responsible for counseling others and/or helping them solve their problems.
7. my job will require a lot of skill.
8. my job will require me to use a number of complex or high-level skills.

Rodell, J. B., & Judge, T. A. (2009). Can "good" stressors spark "bad" behaviors? The mediating role of emotions in links of challenge and hindrance stressors with citizenship and counterproductive behaviors. *Journal of Applied Psychology*, 94(6), 1438.

Anticipated Daily Goal

Please briefly describe a work goal/task that you plan to achieve today?

Afternoon Survey

Unanticipated Daily Time Pressure

Source: Semmer (1984) provided by Sonnentag

Scale: 1 = not at all to 5 = to a great extent

Throughout the workday, employees may encounter unexpected or unanticipated events that may disrupt or interfere with their ability to focus on their planned tasks or

activities. For the items below, please indicate the extent to which you were unexpectedly disrupted by each as you worked to achieve your goals today.

Today, I unexpectedly...

1. faced time pressure.
2. was required to work fast.
3. worked faster than I do usually.

Semmer, N. (1984). *Streßbezogene Tätigkeitsanalyse* [Stress-oriented task analysis]. Weinheim, Germany: Beltz.

Unanticipated Daily Role Novelty

Source: Adapted from Nicholson & West (1988)

Scale: 1 = not at all to 5 = to a great extent

Throughout the workday, employees may encounter unexpected or unanticipated events that may disrupt or interfere with their ability to focus on their planned tasks or activities. For the items below, please indicate the extent to which you were unexpectedly disrupted by each as you worked to achieve your goals today.

Today, I unexpectedly . . .

1. was involved in tasks that I don't usually do.
2. needed to use new skills that I don't usually use.
3. had to use different methods than those I usually use to do the job.
4. had to engage in interactions with people that I don't usually need to interact with.

Nicholson, N. & West, M.A. (1988). *Managerial job change: Men and women in transition*. Cambridge: Cambridge University Press

Unanticipated Daily Situational Constraints

Source: Semmer (1984) provided by Sonnentag

Scale: 1 = not at all to 5 = to a great extent

Throughout the workday, employees may encounter unexpected or unanticipated events that may disrupt or interfere with their ability to focus on their planned tasks or activities. For the items below, please indicate the extent to which you were unexpectedly disrupted by each as you worked to achieve your goals today.

Today, I unexpectedly...

1. had to work with materials and information that were incomplete and outdated.
2. had to spend a lot of time in order to get information and/or materials needed to get my work done.
3. had to work with materials and/or equipment which were not good for my work.
4. had to deviate from departmental policies to get my work done.

Semmer, N. (1984). Streßbezogene Tätigkeitsanalyse [Stress-oriented task analysis]. Weinheim, Germany: Beltz.

Unanticipated Daily Ambiguity

Source: adapted from Zohar (1997)

Scale: 1 = not at all to 5 = to a great extent

Throughout the workday, employees may encounter unexpected or unanticipated events that may disrupt or interfere with their ability to focus on their planned tasks or activities. For the items below, please indicate the extent to which you were unexpectedly disrupted by each as you worked to achieve your goals today.

Today, I unexpectedly. . .

1. was unsure how to solve a problem.
2. had to take action without knowing exactly what was expected of me.
3. made a mistake or was concerned about making one.
4. had difficulty obtaining needed information.
5. had to respond without clear priorities or goals.

Zohar, D. (1997). Predicting burnout with a hassle-based measure of role demands. *Journal of Organizational Behavior*, 18(2), 101-115.

Daily work engagement

Source: adapted from Rothbard (2001)

Scale: 1 = strongly disagree to 5 = strongly agree

Please indicate the extent to which you agree with each of the following statements about your work.

1. Today, I focused a great deal of attention on my work.
2. Today, I concentrated a lot on my work.
3. Today, I often got carried away by what I was working on.
4. When I was working today, I was totally absorbed by it.

Rothbard, N. P. (2001). Enriching or depleting? The dynamics of engagement in work and family roles. *Administrative Science Quarterly*, 46(4), 655-684.

Daily goal progress satisfaction

Please rate the degree to which you feel satisfied with your progress towards achieving your work goal for the day.

Scale: 1 = not at all to 5 = very satisfied

General Survey (Before the Daily Surveys)

Job control

Source: Karasek (1979)

Scale: 1 = never to 5 = extremely often

Please answer the following questions.

1. To what extent do you have the freedom to decide how to organize your work?
2. To what extent do you have control over what happens on your job?
3. To what extent does your job allow you to make a lot of your own decisions?
4. To what extent are you assisted in making your own decisions?

Karasek Jr, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative science quarterly*, 285-308.

Gender

Gender:

- a. Male
- b. Female

Hours worked

On average, how many hours each week do you work?

Age *Age:*

Job Tenure *How long have you worked for your current organization?*

**CHAPTER 3: INTERNATIONAL BUSINESS TRAVELERS' CAREER
SATISFACTION: COMPLEX EFFECTS OF WORK AND FAMILY
ADJUSTMENT AND DEMANDS**

As more and more organizations continue to expand globally in response to rising economic and financial pressures, they are increasingly opting to send their employees on multiple international business trips instead of relocating them to foreign locations, as is the case with traditional expatriates (Mayerhofer, Hartmann, & Herbert, 2004; Welch, Welch, & Worm, 2007). These global employees are known as international business travelers (IBTs). They make multiple short business trips crossing international boundaries to various locations without relocating their family members (Shaffer, Kraimer, Chen, & Bolino, 2012).

While this form of global employment is becoming increasingly popular, there is scant research that examines IBTs' experiences and most is atheoretical, with a few exceptions (see Shaffer et al., 2012, for a recent review). Thus we lack a comprehensive model that would help us evaluate the conditions and processes under which IBT's global experience would be successful.

While international business travelers differ from more traditional expatriates in that they do not relocate themselves and their families to another country but instead frequently travel to international locations (Shaffer et al., 2012), both groups share certain similarities. Both international business travelers and expatriates have to adjust to working conditions across borders and the families of both are affected by the international aspect of the work, such as relocation for expatriate families and dealing with often irregular and disruptive separation for the families of IBTs. Therefore, in order to comprehensively examine IBTs' experiences, it is important to consider both the work and family domains. To do this I use an integration of role theory (Kahn, Wolfe, Quinn,

Snoek, & Rosenthal, 1964; Katz & Kahn, 1978) with the challenge and hindrance stressors framework (Cavanaugh, Boswell, Roehling, & Boudreau, 2000).

I focus on understanding the factors ultimately leading to IBT's work and family role adjustment and subsequent career satisfaction. Work and family role adjustment represents the state of comfort global employees experience within their work and family roles in regard to role responsibilities and their relations with other actors within the role (Lazarova, Westman, & Shaffer, 2010; Shaffer, Reiche, Dimitrova, Lazarova, Chen, & Westman, 2013). As one indicator of career success, career satisfaction is defined as employees' favorable attitudes towards their line of work and career achievements (Greenhaus, Parasuraman, & Wormley, 1990). In the case of IBTs, the degree to which they evaluate their career positively can represent a sound signal of their willingness to continue their global employment experiences. In fact, career satisfaction has been found to be associated with lower turnover intentions, higher organizational commitment (Veiga, 1983) and lower job search intentions (Granrose & Portwood, 1987).

Furthermore, the majority of the literature on expatriates adopts a stress perspective and focuses on understanding the stressors associated with being a global employee (Harrison, Shaffer, & Bhaskar-Shrinivas, 2004; Takeuchi, Lepak, Marinova, & Yun, 2007). Thus in order to begin to understand the work and family experiences of international business travelers, I also adopt the stress perspective and suggest that IBTs' career satisfaction will be indirectly influenced by work and family stressors/demands through a process of work and family adjustment, respectively.

In the global employment literature, demands arising from participation in work and family life are considered to be purely detrimental to global employees' work and

family adjustment (Lazarova, Westman, & Shaffer, 2010). However, recent advancements in the general management literature (Cavanaugh et al., 2000) have suggested a differential effect of stressors, where they are not always deleterious and some of them could be even beneficial to employees. Cavanaugh and colleagues (2000) developed a two-dimensional framework of job demands: challenge and hindrance demands. Challenge demands represent stressors that are seen as instrumental for achieving valuable goals and create opportunities for personal growth, while hindrance demands represent impediments to these. Across employees, differentiated effects of challenge and hindrance stressors have been consistently demonstrated in regards to employee work attitudes (see Podsakoff, LePine, & LePine, 2007, for a meta-analysis).

While this framework has become influential in the general management literature, its incorporation into the global employment literature has been minimal and the few efforts in this regard have been concentrated only within expatriates' work-related experiences (*e.g.*, Firth, Chen, Kirkman, & Kim, 2013) and not in the context of international business travelers. In addition, while the family domain has been established as an important influence on employees and work outcomes (for a recent review see: Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005), demands within the family context are still seen as purely detrimental not only within the literature on international business travel but also within the general management literature. Thus with the focus on challenge and hindrance stressors within both the family and work domains, the aim of this study is to contribute not only to the more rounded understanding of demands in regards to business travel but also to a more nuanced view of family stressors within the general work-family literature.

In addition, all of the challenge and hindrance demands considered in the past are task-related with the exception of engaging in office politics and supervisor-related stress. The relational aspect of the global experience is, however, vital to determining its success (for a review see: Takeuchi, 2010). The importance of fostering relationships with host-country nationals at work (Harris & Brewster, 1999), adjustment to relational interactions within the foreign environment (Black, Mendenhall, & Oddou, 1991; Fischlmayr & Kollinger, 2010), and adjustment within the new global work and family contexts (Lazarova, Westman, & Shaffer, 2010) have been repeatedly emphasized. Therefore, this study focuses not only on differentiating the effects of *task* challenge and hindrance stressors but also on distinguishing between *relational* challenge and hindrance stressors. Better understanding relational type demands is important since the relational aspect is not only relevant to the global careers literature, but to general management. Employees are expected to both perform their assigned tasks and form strong and cooperative relationships within the workplace (Welbourne, Johnson, & Erez, 1998; Van Scotter & Motowidlo, 1996).

Thus the purpose of this study is to create and test a model examining the differentiated beneficial and detrimental effects of demands within IBTs' work and family roles and their influence on subsequent evaluations of career success through work and family role adjustment. I employ a longitudinal approach with data collected at two time points. While it has been seen as necessary to move away from cross-sectional studies in global work research, there has been little progress in this regard in relation to work experiences (*e.g.*, Firth et al., 2013) and virtually none in relation to family

influences. Thus assessing subsequent career satisfaction would help us to more accurately examine the experience of international business travelers over time.

Theory and Hypotheses

Integration of Role Theory and the Challenge and Hindrance Stressors Framework within the Context of International Business Travel

In order to paint a more comprehensive picture of how demands faced by international business travelers affect their global employment experience, I integrate role theory (Kahn et al., 1964; Katz & Kahn, 1978) with the challenge and hindrance stressors framework (Cavanaugh et al., 2000). At the core of role theory is the perspective that individuals assume different roles as they participate in various social structures (Biddle, 1986). People generally simultaneously hold multiple roles that correspond to the different social positions they have in society (Katz & Kahn, 1978). Role demands constitute factors within the role environment that focal actors, in this case the international business traveler, would perceive as taxing (Katz & Kahn, 1978). Role demands can be role expectations set forth by other role actors (*e.g.*, role responsibilities), as well as other demanding in-role experiences (*i.e.*, emotional conflict) (Katz & Kahn, 1978).

Thus, no matter the profession and the line of work, each member in an organization is directly associated with others who constitute the member's role-set (*e.g.*, supervisor, subordinates, colleagues) (Katz & Kahn, 1978). These represent the other actors within the work role, who set relational and task expectations to be fulfilled by the focal actor. Similar to the work role, the family role is also comprised of both task

responsibilities and relationships with other role actors (*e.g.*, children, spouse, parents, extended family, etc). Since role participation consists of engaging in different role tasks, as well as, interacting with other role actors (Katz & Kahn, 1978), role demands can be both task and relationship-based.

According to the challenge and hindrance framework, however, not all demands would have purely deleterious effects (Cavanaugh et al., 2000). Challenge demands are more motivational (LePine, LePine, & Jackson, 2004) and are seen to bring personal and career benefits (Cavanaugh et al., 2000). On the other hand, hindrance demands are perceived to impede motivation (LePine, LePine, & Jackson, 2004) and are detrimental to personal and career goals (Cavanaugh et al., 2000).

Incorporating the challenge and hindrance framework within role theory it is possible to think of in-role demands (*i.e.*, work and family demands) as separated into ones that are beneficial and ones that are deleterious to achieving valued outcomes. According to role theory, the role taker would aim at achieving success and satisfaction within life roles. Therefore, if demands within the role environment are perceived by the focal actor as facilitative to a positive role experience, they would constitute challenge demands. While they will be taxing for the focal actor, they will be also motivating and thus contributing to in-role success. On the other hand, stressful factors within the role environment that are not perceived by the focal actor as facilitative to a positive role experience will be hindrance demands. Either overcoming these stressors is seen as impossible, or overcoming them would not result in valued outcomes. In addition, since the focal actor's participation within a role is comprised of engaging in role tasks and interacting with other role actors (Katz & Kahn, 1978), which essentially separate in-role

demands to be either task or relational focused, challenge and hindrance demands will also exist within each of these demand types.

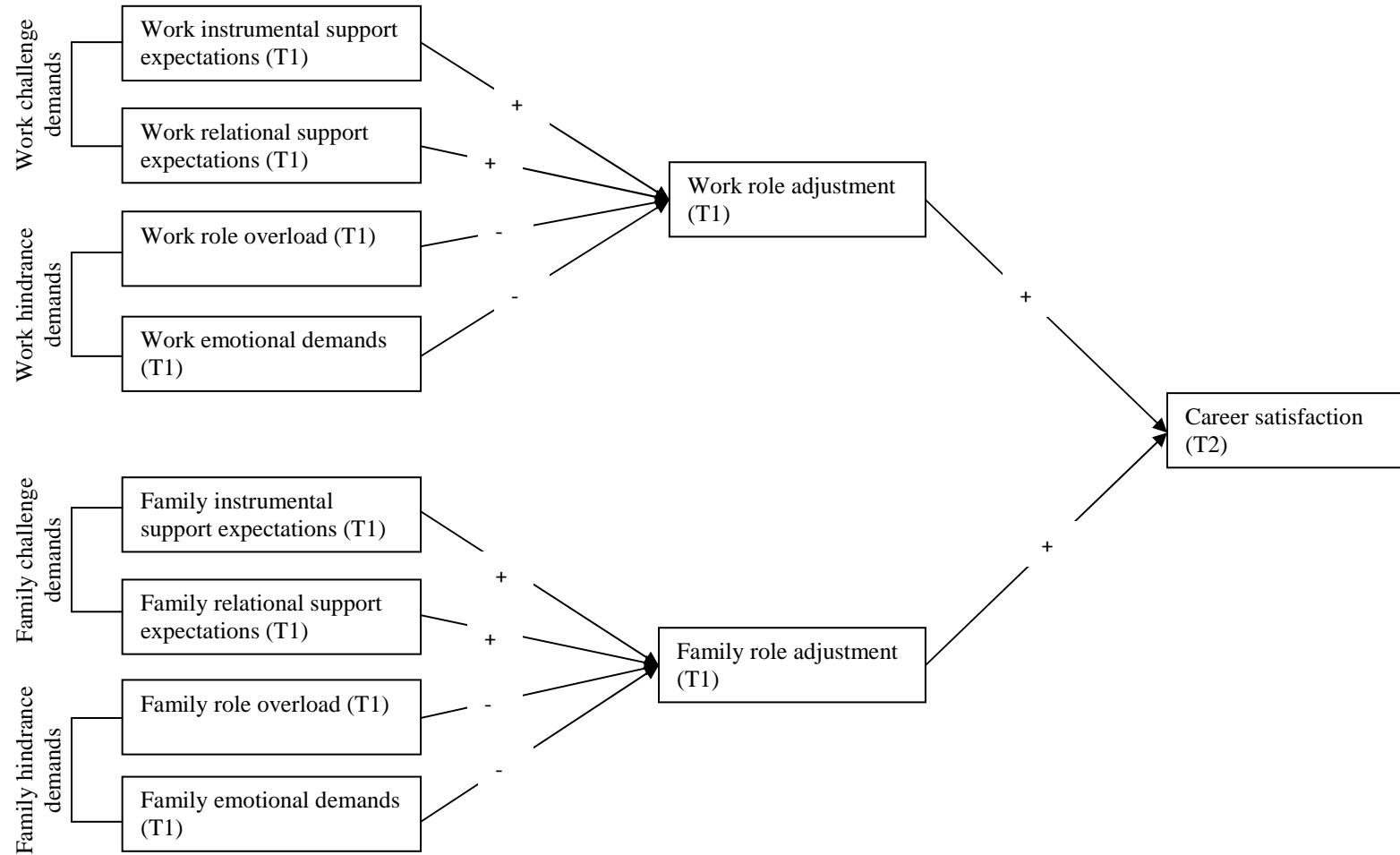
In the context of international business travelers, transitioning to global work involves a process of role change, where new roles are defined (*e.g.*, becoming an international business traveler), existing roles are redefined (*e.g.*, a parent would need to be absent from home due to international travels), new responsibilities are accepted (*e.g.*, IBTs accept additional work tasks such as overseeing international subsidiaries), and new in-role relationships are created (*e.g.*, new coworkers to interact with at the foreign locations) (Allen & van de Vliert, 1984; Rosch & Irle, 1984). Thus IBTs' comfort in their work and family roles would be disrupted until they become once again adjusted to these now re-defined life roles.

Purely based on role theory and past research of global employment experiences, role demands would be a barrier to achieving comfort within a life role or, in other words, adjustment. However, based on the challenge and hindrance stressors framework, challenge demands would trigger positive emotions, such as excitement, happiness, and exhilaration. Due to this, individuals would not see the demands that caused them to experience these pleasant feelings as a burden and would experience a degree of comfort when engaging in them. Since challenge demands invoke a motivational response (Firth et al., 2013; LePine, LePine, & Jackson, 2004; LePine, Podsakoff, & LePine, 2005; Webster, Beehr, & Love, 2010), in the IBTs' context such demands may be related to a greater effort for adaptation to the new and redefined work and family roles. On the other hand, while challenge demands would be facilitative to work and family role adjustment, hindrance demands would be a barrier to adaptation. Since they are not seen as

instrumental in achieving valued goals, they are associated with negative emotions, such as anger and fear (Lazarus & Folkman, 1984, 1991), and are seen as detrimental to motivation (LePine et al., 2004; LePine et al., 2005; Webster et al., 2010). These stressors may also invoke passive coping responses that would allow individuals to distance themselves from the demand and withdraw from in-role participation (Lazarus & Folkman, 1984; Crawford, LePine, & Rich, 2010). In the context of IBTs, high levels of hindrance demands within the work and family domains would then prevent them from adapting to their new roles and to the global employment experience as a whole.

Therefore, I suggest that task and relational demands within the work and family role will either facilitate or hinder the ability of international business travelers to adjust to their redefined work and family roles within the context of international business travel. Ultimately I propose that the type of demands experienced within the work and family roles will affect the degree to which international business travelers feel satisfied with their career, through a process of adjustment to the redefined work and family roles. The proposed model is presented in Figure 1.

Figure 1
Hypothesized Model



Work and Family Challenge Demands and Their Relationship to IBTs' Adjustment

Based on role theory, demands within work and family can be classified as either task or relational. Work or family *task* demands (*e.g.*, instrumental support expectations) would be any demands that the focal actor (*i.e.*, the IBT) experiences in relation to specific work or family task responsibilities or interactions with other role actors that are primarily task related. Unlike *task* demands, *relational* demands (*e.g.*, relational support expectations) are associated with the general interaction with other work or family actors and with navigating within role relationships.

A common task demand within both work and family roles is the expectations of fellow coworkers or family members for support in the execution of work tasks and projects (*i.e.*, work instrumental support expectations) or help with family tasks and daily chores (*i.e.*, family instrumental support expectations). While such demands may be taxing for IBTs', as they are in addition to regular duties and responsibilities, they would also allow for faster immersion within the re-defined work and family roles. Thus instrumental support expectations could be considered a challenge-type demand. In fact, similar additional work responsibilities have been cited as challenge demands within the general employment literature (Cavanaugh et al., 2000). Within the work domain, being asked for help on a regular basis and the additional responsibility could lead employees to feel respected at the workplace and regarded as experts within their line of work by others in the organization and thus contribute to work role adjustment (Aycan, 1997). Similarly, in the family domain, requests for instrumental help from family members represent additional responsibilities that can help IBTs feel that despite their frequent travels they are still an integral part of the family unit and are needed by family members,

again contributing to faster adaptation to the re-defined family role. Thus being faced with work and family support expectations, IBTs would experience greater state of adjustment within their work and family roles, respectively.

Hypothesis 1: Work instrumental support expectations will be positively related to work role adjustment.

Hypothesis 2: Family instrumental support expectations will be positively related to family role adjustment.

Similarly, relational work and family challenge demands such as the expectations of role actors for emotional or non-task related support (*i.e.*, work and family relational support expectations) could contribute positively to IBTs' in-role adjustment. Such demands may entail to be sympathetic and understanding about problems fellow employees are experiencing or be a good listener when family members need to discuss issues (Lawrence, Gardner, & Callan, 2007). While these demands can be time consuming and distracting from other duties, engaging in them would mean more frequent instances of positive interaction with in-role actors, which has been repeatedly cited as a factor contributing to the adjustment of traditional expatriates (Aycan, 1997; Black, 1990; Briody & Chrisman, 1991; Caligiuri & Lazarova, 2002). Within the family role, in particular, sound family relationships (*e.g.*, good communication) have been found to be related to the adjustment of the entire family within the context of foreign assignments (Caligiuri, Hyland, Joshi, & Bross, 1998). Since adjustment to relationships with other role actors is an integral part of both work and family adjustment (Lazarova,

Westman, & Shaffer, 2010), work and family relational support expectations would be positively associated with IBTs' adjustment within the respective role.

Hypothesis 3: Work relational support expectations will be positively related to work role adjustment.

Hypothesis 4: Family relational support expectations will be positively related to family role adjustment.

Work and Family Hindrance Demands and Their Relationship to IBTs' Adjustment

Within their work and family roles, individuals inevitably will encounter hindrance demands that are purely deleterious to achieving valued personal and career goals. Similarly to challenge demands, work and family hindrance demands could also be separated into two categories based on role theory. These can be either *task* demands (e.g., role overload), associated with the execution of work and family role responsibilities by the IBT, or *relational* demands (e.g., emotional demands), associated with the interaction with other role actors.

Role overload represents a situation where individuals feel that the tasks and responsibilities expected of them within their work and family roles exceed the resources they have available to cope with these demands (Kahn et al., 1964). Classified as a hindrance demand (LePine et al., 2005), role overload has been found to be deleterious to attitudinal outcomes such as job satisfaction (Eatough, Chang, Miloslavic, & Johnson, 2011; Jex & Bliese, 1999; Jex, Adams, Elacqua, & Bachrach, 2002; Jones, Chonko, Rangarajan, & Roberts 2007) and organizational commitment (Jex & Bliese, 1999; Jones et al., 2007). In regard to global employment, role overload, both within work and family,

has been suggested as a demand that could negatively impact in-role adjustment for expatriates (Lazarova, Westman, & Shaffer, 2010). Such detrimental demands within a role could have a deleterious influence on successful role functioning (Katz & Kahn, 1978). Thus, in the context of IBTs, perceiving work and family tasks and responsibilities to be overwhelming may prevent IBTs from successfully adjusting to their redefined work and family roles. Consequently:

Hypothesis 5: Work role overload will be negatively related to work role adjustment.

Hypothesis 6: Family role overload will be negatively related to family role adjustment.

Emotional demands are defined as emotionally charged situations involving other role actors at work (*e.g.*, coworkers, customers) or at home (*e.g.*, spouse, children). Based on role theory, work emotional demands, such as exposure to complaints and intimidation (Bakker, Demerouti, & Euwema, 2005), and family emotional demands (*e.g.*, disrespect and undermining at home) can be an impediment to successful interaction and communication with within role actors and thus achieving comfort within the respective life role.

While emotional demands have not been studied in relation to adjustment, they are generally considered to exhibit the detrimental properties of hindrance stressors as roadblocks to achieving goals and personal growth (*e.g.*, Tims, Bakker, & Derks, 2013) and thus may prevent adjustment to the particular life role. In support, Vegchel and colleagues (2004) found emotional demands to negatively affect feelings of personal

accomplishment and Taris and Schreurs (2009) found a deleterious association with on-the-job-learning. Although emotional demands have not received the same research attention in regard to the family domain as in the work domain, I expect that family emotional demands would similarly exhibit hindering properties in regards to achieving comfort within IBTs' redefined family role. Thus I suggest that:

Hypothesis 7: Work emotional demands will be negatively related to work role adjustment.

Hypothesis 8: Family emotional demands will be negatively related to family role adjustment.

The Direct and Mediating Effect of Work and Family Adjustment on International Business Travelers' Subsequent Career Satisfaction

While work and family adjustment are important factors when evaluating IBTs' global experience, the focus here is on IBTs' subsequent career satisfaction. In the global employment context, the influence of work adjustment on career satisfaction has not been directly examined. However, the association of work adjustment and other attitudinal outcomes (*e.g.*, job satisfaction, job commitment) similar to career satisfaction has been well documented (*e.g.*, Shaffer & Harrison, 1998; Takeuchi, Yun, & Tesluk, 2002). In fact, in a meta-analysis Bhaskar-Shrinivas, Harrison, Shaffer, and Luk (2005) found a strong positive association between work adjustment and expatriates' job satisfaction. Similar to job satisfaction, career satisfaction represents an evaluation of the overall work experience. Within the global employment context, such positive attitudinal evaluations of the work role are thought to arise from adjusting to work role experiences (Shaffer &

Harrison, 1998), since it entails adaptation to the redefined work requirements and to interactions with foreign employees or customers.

Career satisfaction is more closely associated with the work role domain. Based on the role enrichment perspective, which suggests that participation in multiple roles can be beneficial to the extent that experiences in one role can improve life in another domain (Greenhaus & Powell, 2006), the positive experiences of comfort and psychological and emotional wellbeing as a result of achieving family role adjustment (Searle & Ward, 1990) could then spill over and positively affect the work domain. In fact, Lazarova and colleagues (2010) proposed that adjustment to the family role would positively impact the work role. Reaching high levels of family adjustment would then mean that IBTs would more favorably evaluate their experiences in the work domain and thus increase their subsequent career satisfaction. Thus:

Hypothesis 9: Work role adjustment (T1) will increase career satisfaction (T2).

Hypothesis 10: Family role adjustment (T1) will increase career satisfaction (T2).

In addition to suggesting that work and family role adjustment have a direct effect on IBTs' career satisfaction I examine the intervening role of adjustment in the relationship between in-role demands and career satisfaction. Stemming from role theory, Kahn (1992) discussed that achieving a state of comfort within a life role represents a link between the role environment and successful in-role functioning. Employees'

evaluation of their life role experiences is then only distantly affected by the types of demands present in the role environment through the psychological state of role adjustment. In the global employment literature, work and family role factors are also often seen as having distant effects on attitudinal outcomes, usually through adjustment (e.g., Bhaskar-Shrinivas et al., 2005). Thus I suggest that the detrimental influence of hindrance role demands and the beneficial one of challenge role demands would more proximally be associated with a state of comfort and psychological wellbeing within the respective life role and through this they would affect IBTs' attitudes. Therefore, I propose that work role demands would indirectly affect IBTs' career satisfaction through work role adjustment, whereas family role demands would indirectly affect career satisfaction through family role adjustment.

Hypothesis 11: Work role adjustment mediates the relationship between work role demands and career satisfaction.

Hypothesis 12: Family role adjustment mediates the relationship between family role demands and career satisfaction.

Methods

Data Collection and Sample

International business travelers were recruited from a voluntary online panel (Qualtrics) of English-speaking adults residing in the United States. This method of data collection provides for a sampling of global workers across many occupations and industries (Montes & Zweig, 2009). Online data collection agencies like this have

recently started to be utilized in a growing number of empirical studies (*e.g.*, Montes & Zweig, 2009; Piccolo & Colquitt, 2006). In exchange for their participation, respondents are given reward points, which they can redeem for merchandise.

There were 1,841 panel members who attempted to complete the survey. Employees, who did not travel in the past year, only worked part-time, or were aircrew personnel were excluded. In addition, within-survey attention quality checks were implemented and participants who did not pass them successfully were also excluded. The data collection was terminated when completed surveys reached 620. After deletion of missing data and additional quality checks, the final sample size became 580. A Time 2 survey was administered approximately one month after data for the Time 1 survey was collected. Of the individuals who completed the first survey, 258 attempted to complete the second. The final sample size for Time 2 was reduced to 209 due to some participants not successfully passing quality checks and missing observations in the data.

Approximately 58% of the participants who completed both time waves were male, 73% were married or in a committed relationship, the majority had one or more children (65%), and the average age was 40 years. This demographic composition is comparable to other IBTs' samples, however, women are somewhat more represented in this sample (*e.g.*, Espino, Sundstorm, Frick, Jacobs, & Peters, 2002; Westman, Etzion, & Chen, 2009). The majority traveled internationally for business at least one to two times each quarter (76%), with the trips lasting on average approximately six days. The most frequent countries visited were Canada, United Kingdom and other European countries. Majority of the participants were in middle-level management positions (48%) and were in a global role involving frequent international business travel on average for seven

years. The industry representation was diverse (*e.g.*, manufacturing, communication, wholesale trade, transportation, etc.).

Measures

At Time 1, I collected demographics, work and family role demands, and work and family adjustment. Career satisfaction was assessed at Time 2.

Dependent variables. *Career satisfaction* is measured through Greenhaus, Parasuraman and Wormley's (1990) scale. It consists of five items, rated on a 1 (strongly dissatisfied) to 5 (strongly satisfied) scale ($\alpha = .89$). An example item is "How satisfied are you with the progress you have made toward meeting your overall career goals?"

Work and family role adjustment is measured using Shaffer and colleagues' (2013) scale. Work role adjustment is comprised of eight items ($\alpha = .92$), while family role adjustment consists of six items ($\alpha = .94$). Both work and family role adjustment are assessed on a 1 (not at all) to 5 (to a great extent) scale. A sample item from work role adjustment is "I feel comfortable with my activities or tasks at work" and a sample item from family role adjustment is "I feel comfortable with how we handle role responsibilities in our family."

Independent variables. *Work instrumental support expectations* were adapted from ten Brummelhuis, Bakker, and Euwema's (2010) work instrumental support scale to reflect coworkers' expectations of task related support to be provided by the global employee. The scale consists of four items on a 1 (never) to 5 (always) scale ($\alpha = .75$). A sample item is "I am expected to regularly help my colleagues with job tasks and activities." Similarly, *family instrumental support expectations* were adapted from ten Brummelhuis, Bakker, and Euwema's (2010) family instrumental support scale to assess

the degree to which global employees are expected to provide task related support to family members. This is a four-item scale measured from 1 (never) to 5 (always) ($\alpha = .89$). A sample item is “I am often expected to help out when my family members fail to carry out a task at home.”

Work relational support expectations is adapted from Lawrence, Gardner and Callan’s (2007) scale to reflect the expectations coworkers have for emotional support from the global employee. This scale consists of 12 items measured from 1 (not at all) to 5 (very much) ($\alpha = .95$). A sample item is “My colleagues expect me to be sympathetic and understanding about their problems.” *Family relational support expectations* were similarly adapted from Lawrence, Gardner and Callan’s (2007) scale to both reflect the family domain and to assess the degree to which family members expect the global employee to provide them with relational support. This 12-item scale is measured on a 1 (not at all) to 5 (very much) scale ($\alpha = .96$). A sample item is “My family members expect me to reassure them about their ability to deal with problems.”

Work role overload was assessed with Bolino and Turnley’s (2005) three-item scale. This is a 5-point Likert scale (1- "strongly disagree" to 5 - "strongly agree") and a sample item is “It often seems like I have too much work for one person to do” ($\alpha = .77$). *Family role overload* was measured with a scale from Cammann, Fichman, Jenkins, and Klesh (1979). This was originally a three-item scale measured from 1 (strongly disagree) to 5 (strongly agree) but one item was removed to increase reliability ($\alpha = .81$). The removed item is “The amount of work I am asked to do at home is fair (reverse scored).” A sample question from this scale is “I never seem to have enough time to get everything done at home.”

Work emotional demands (Van Veldhoven & Meijman, 1994) consisted originally of five items but one item was removed to increase reliability ($\alpha = .82$). The removed item is “People at work treat me with appropriate respect and politeness (reverse scored).” Work emotional demands were measured on a 1 (never) to 5 (always) scale. A sample item from this scale is “My work puts me in emotionally upsetting situations.” *Family emotional demands* were adapted from Van Veldhoven and Meijman (1994) to reflect the family domain. This scale consists of three items (one item was removed to increase reliability and one item was removed a priori for not fitting the family domain) ($\alpha = .95$). The item removed in order to increase reliability is “Family members treat me with appropriate respect and politeness (reverse scored).” Family emotional demands were measured on a 1 (never) to 5 (always) scale. A sample item from this scale is “I face emotionally charged situations at home.”

Control variables. I controlled for *gender* (0- male, 1 - female), *marital status* (0- married or in a committed relationship and 1- single), *age*, and *IBT tenure* (*i.e.*, number of years in an international business traveler role). These variables have been accepted to have an influence on global employees’ experiences (*e.g.*, Stahl & Caligiuri, 2005; Takeuchi, Lepak, Marinova, & Yun, 2007; Westman, Etzion, & Gattenio, 2008). Means, standard deviations, correlations, and internal reliabilities are presented in Table 1.

Table 1

Means, Standard Deviations, Internal Consistency Reliabilities, and Pearson Correlations^a

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Career satisfaction (T2)	4.08	0.69	(.89)								
2. Work role adjustment (T1)	4.21	0.68	.51	(.92)							
3. Family role adjustment (T1)	4.04	0.90	.43	.57	(.94)						
4. Work instrumental support expectations (T1)	3.62	0.87	.11	.28	.10	(.75)					
5. Family instrumental support expectations (T1)	3.38	1.02	.18	.28	.21	.49	(.89)				
6. Work relational support expectations (T1)	3.86	0.81	.27	.37	.30	.48	.38	(.95)			
7. Family relational support expectations (T1)	4.01	0.88	.32	.38	.58	.13	.39	.38	(.96)		
8. Work role overload (T1)	3.14	1.02	-.18	-.11	-.06	.30	.27	.19	.01	(.77)	
9. Family role overload (T1)	2.77	1.15	-.11	-.06	-.17	.26	.40	.13	.02	.57	(.81)
10. Work emotional demands (T1)	2.82	1.02	-.01	.07	-.07	.50	.46	.37	.19	.36	.56
11. Family emotional demands (T1)	2.67	1.34	.01	.14	-.06	.42	.58	.31	.02	.40	.57
12. Age (T1)	39.51	10.94	.06	.03	.12	-.16	-.22	.08	.12	-.13	-.18
13. Gender (T1)	0.42	0.49	-.04	.13	.07	.12	.09	.05	.09	.06	.10
14. Marital status (T1)	0.27	0.45	-.13	-.12	-.26	.01	-.15	-.01	-.26	-.01	-.03
15. IBT tenure (T1)	7.06	6.34	.11	.11	.15	-.10	-.08	.10	.15	-.09	-.08

^a All correlations larger than .14 are significant at $p < .05$ and all correlations larger than .18 are significant at $p < .01$
 n = 209

Table 1 (Continued)

Means, Standard Deviations, Internal Consistency Reliabilities, and Pearson Correlations^a

Variable	Mean	SD	10	11	12	13	14	15
1. Career satisfaction (T2)	4.08	0.69						
2. Work role adjustment (T1)	4.21	0.68						
3. Family role adjustment (T1)	4.04	0.90						
4. Work instrumental support expectations (T1)	3.62	0.87						
5. Family instrumental support expectations (T1)	3.38	1.02						
6. Work relational support expectations (T1)	3.86	0.81						
7. Family relational support expectations (T1)	4.01	0.88						
8. Work role overload (T1)	3.14	1.02						
9. Family role overload (T1)	2.77	1.15						
10. Work emotional demands (T1)	2.82	1.02	(.95)					
11. Family emotional demands (T1)	2.67	1.34	.52	(.96)				
12. Age (T1)	39.51	10.94	-.14	-.29	-			
13. Gender (T1)	0.42	0.49	.06	.09	-.01	-		
14. Marital status (T1)	0.27	0.45	.03	-.03	-.16	.01	-	
15. IBT tenure (T1)	7.06	6.34	-.06	-.13	.51	-.04	-.12	-

^a All correlations larger than .14 are significant at $p < .05$ and all correlations larger than .18 are significant at $p < .01$
 n = 209

Confirmatory Factor Analysis

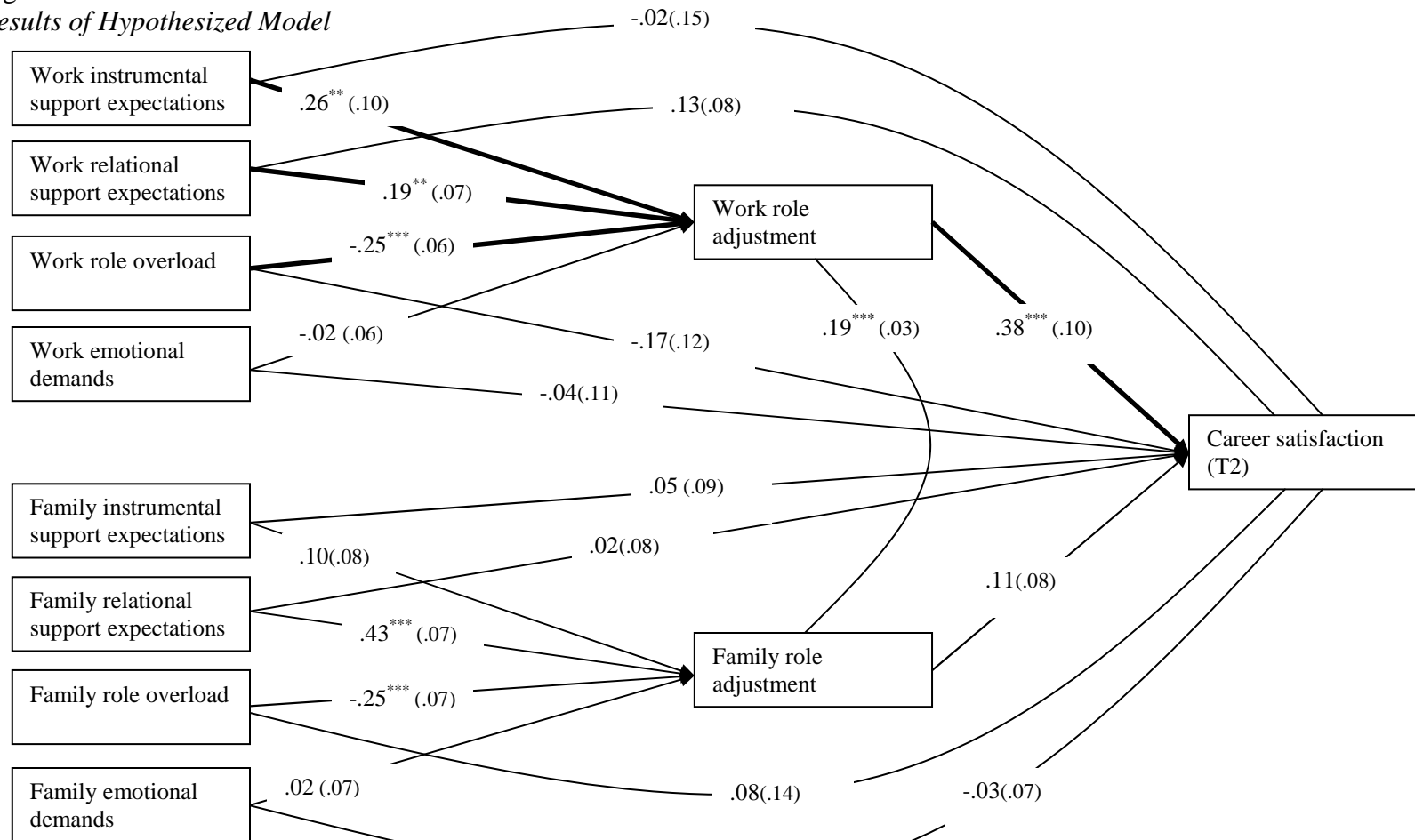
I conducted a confirmatory factor analysis (CFA) on all latent variables included in the model. The analysis was conducted using LISREL 8.80 (Jöreskog & Sörbom, 1996). The proposed 11 factor model provided acceptable fit to the data. The chi-square of this model was 3,491.81 with 1,836 degrees of freedom and the model fit was adequate (CFI = .96; RMSEA = .07; SRMR = .08). All factor loadings were statistically significant and loaded at over .50 on their respective factor, a loading of at least .40 is desirable (Nunnally, 1978). In addition, I tested a model, which collapsed across the work role adjustment and family role adjustment factors since these variables were originally created as dimensions of an overall role adjustment measure. This second model provided a significantly worse fit to the data: $\Delta\chi^2 = 573.79$; $\Delta df = 10$, $p < .05$ CFI = .94; RMSEA = .09; SRMR = .09.

Results

I tested the proposed model with structural equation modeling (SEM) using LISREL 8.80 (Jöreskog & Sörbom, 1996). Due to the relatively small sample size ($n=209$), the “one-item” approach was utilized, where a single composite indicator of the latent variable was used. The error variance was set to $(1-\alpha)*\text{variance}$. The error terms for work role adjustment and family role adjustment were allowed to covary to account for the higher order common factor of overall adjustment. In addition, I included direct effects from all exogenous work and family demand variables to career satisfaction since these are needed to test mediation (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The model provided good fit to the data ($\chi^2 = 30.665$; $df = 8$, $p < .05$ CFI = .98; NFI = .98). In addition, the predictor variables were found to explain 28% of the

variance in work role adjustment and 39% of the variance in family role adjustment. The predictor variables and the work adjustment variables explained 37% of the variance in career satisfaction. Unstandardized path coefficients along with standard errors are presented in Figure 2a. Completely standardized path coefficients are presented in Figure 2b.

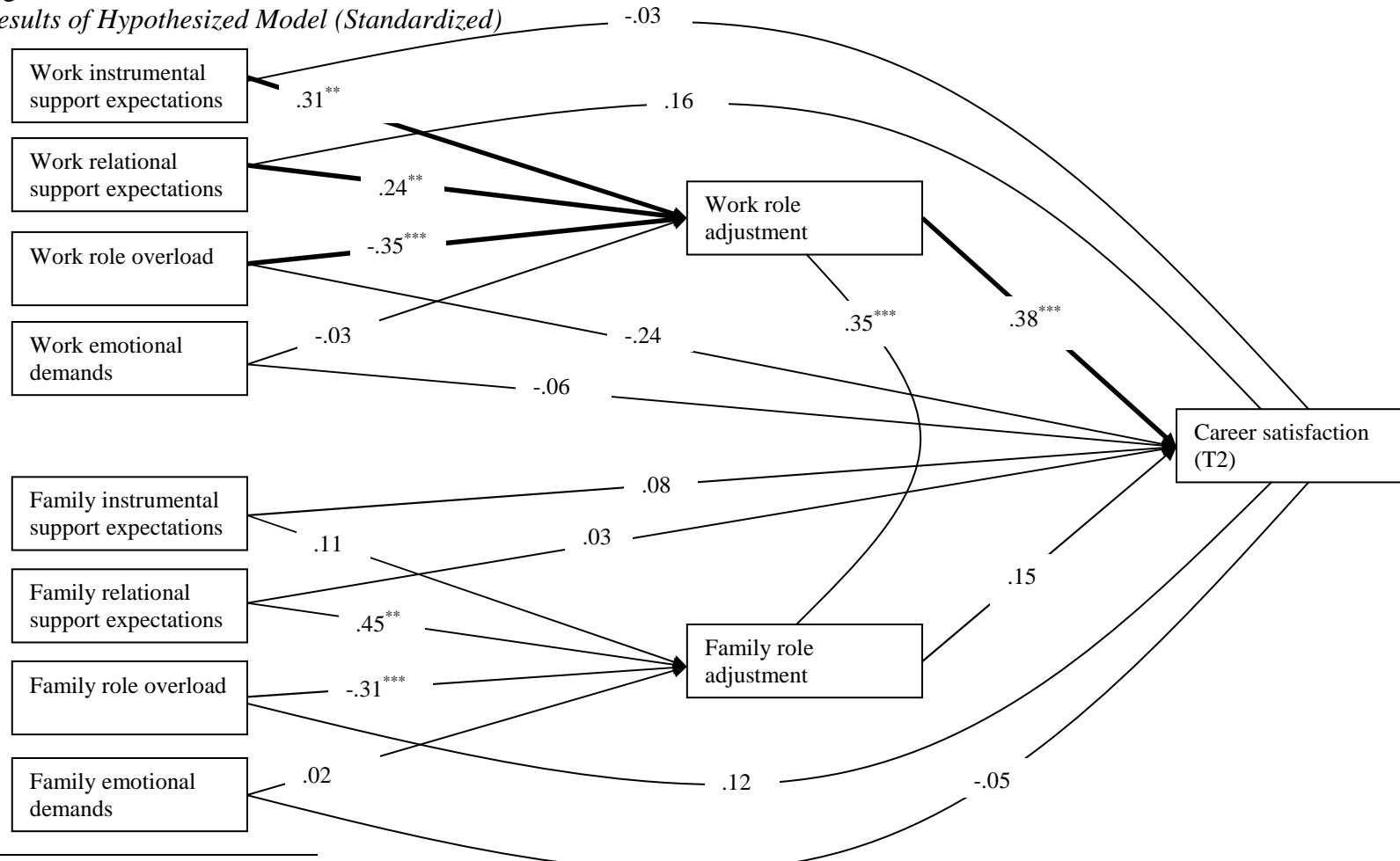
Figure 2a²
Results of Hypothesized Model



² Numbers in parentheses are standard errors; Unstandardized estimates are presented; All variables except Career Satisfaction are measured at T1; **Bolded** lines represent mediation; Coefficients of the relationships among exogenous variables provided upon request; Controls not shown (i.e., age, marital status, gender, IBT tenure), coefficients provided upon request; n=209; *p<.05, **p<.01, ***p<.001

Figure 2b³

Results of Hypothesized Model (Standardized)



³ Completely Standardized estimates are presented; All variables except Career Satisfaction are measured at T1; **Bolded** lines represent mediation; Coefficients of the relationships among exogenous variables provided upon request; Controls not shown (i.e., age, marital status, gender, IBT tenure), coefficients provided upon request; n = 209; p < .05, ** p < .01, *** p < .001

In Hypotheses 1 and 2, I predicted that the task challenge demands of work and family instrumental support expectations will be positively related to work and family role adjustment, respectively. Work instrumental support expectations indeed had a significant and positive relationship with work role adjustment ($b = .26; p < .01$). However, family instrumental role expectations did not have a significant relationship with family role adjustment ($b = .10; p > .05$). Thus, Hypothesis 1 is supported but Hypothesis 2 is not.

Hypotheses 3 and 4 predicted that the relational challenge demands of work and family relational support expectations will be positively related to work and family role adjustment, respectively. Work relational support expectations were significantly and positively related to work role adjustment ($b = .19; p < .01$). Family relational support expectations also had a positive and significant relationship with family role adjustment ($b = .43; p < .001$). Thus both Hypotheses 3 and 4 are supported.

Hypotheses 5 and 6 predicted that the task hindrance demands of work and family role overload will be negatively related to work and family role adjustment, respectively. Work role overload was significantly and negatively related to work role adjustment ($b = -.25; p < .001$). Family role overload also had a significant and negative relationship with family role adjustment ($b = -.25; p < .001$). Thus Hypotheses 5 and 6 are supported.

Hypotheses 7 and 8 predicted that the relational hindrance demands of work and family emotional demands will be adversely related to work and family role adjustment, respectively. Work emotional demands were not significantly related to work role adjustment ($b = -.02; p > .05$). This was the case also in regard to the relationship

between family emotional demands are family role adjustment ($b = .02$; $p > .05$).

Therefore, Hypotheses 7 and 8 are not supported.

Hypothesis 9 and 10 proposed that work and family role adjustment at Time 1 would significantly increase the career satisfaction of international business travelers at Time 2. Work role adjustment did indeed significantly increase career satisfaction ($b = .38$; $p < .001$), however, family role adjustment was not significantly related to career satisfaction ($b = .11$; $p > .05$). Therefore, Hypothesis 9 was supported but there was no support for Hypothesis 10.

Mediation was tested using the “product of coefficients” approach (MacKinnon et al., 2002). In this case, mediation is demonstrated by a statistically significant indirect effect as provided by effect decomposition statistics in LISREL 8.80.

Hypothesis 11 predicted that the relationship between all work role demands and the career satisfaction (T2) of international business travelers at Time 2 will be mediated by work role adjustment. Work instrumental support expectations, work relational support expectations and work role overload all had significant indirect effects on career satisfaction through work adjustment ($b = .10$, $b = .07$, $b = -.10$; respectively). Only work emotional demands did not have a significant indirect effect. Thus Hypothesis 11 is partially supported.

Hypothesis 12 predicted that the relationship between all family role demands and the subsequent career satisfaction (T2) of international business travelers will be mediated by family role adjustment. No significant indirect effects were found. Thus Hypotheses 12 is rejected.

Discussion

The purpose of the proposed study was to create and test a comprehensive model of international business travelers' (IBTs) global employment experience by considering both their work and family roles. Based on an integration of role theory (Kahn et al., 1964; Katz & Kahn, 1978) with the challenge and hindrance stressors framework (Cavanaugh et al., 2000), I proposed that IBTs' career satisfaction is indirectly affected by work and family role demands through a process of adjustment to re-defined work and family roles.

In regard to challenge demands, as predicted, the work challenge demands of work instrumental support expectations (*i.e.*, task) and work relational support expectations (*i.e.*, relational), had a significant and positive effect on work role adjustment and also indirectly affected IBTs' career satisfaction at Time 2 through in-role adjustment. With respect to the family role, the family challenge demand of family relational support expectations (*i.e.*, relational) had a significant and positive effect on family adjustment, however, the challenge demand of family instrumental support expectations (*i.e.*, task) was not significantly associated with family adjustment.

Hindrance demands, on the other hand, were expected to relate negatively to work and family adjustment and indirectly detrimentally affect IBTs' career satisfaction. Within the work role, this was the case for work role overload (*i.e.*, task) but work emotional demands (*i.e.*, relational) did not have a significant association with work adjustment or an indirect effect on career satisfaction. With respect to the family role, again only family role overload (*i.e.*, task) was found to have a positive association with

family adjustment, while family emotional demands (*i.e.*, relational) were not related to this outcome.

In addition, it was expected that work and family role adjustment would increase IBTs' career satisfaction at Time 2. This was only the case for work role adjustment. Stemming from this, the indirect effect of any family demands on career satisfaction through family role adjustment was not found to be significant.

Results, in general, provide support for the proposed model. However, emotional demands, classified as hindrances, did not significantly affect work or family role adjustment. It is possible that these demands do not have strong detrimental effects as expected but they are more of a mixed nature, where they may be appraised differently by different IBTs or their effect may depend on context and circumstances. In fact, some have found no relationship of emotional demands to desirable work outcomes (Fox, Dwyer, & Ganster, 1993; Huynh, Xanthopoulou, & Winefield, 2012), while others have even found a positive association (Clausen & Borg, 2011). Therefore, it is possible that the detrimental effects of emotional demands may not be as strong especially when analyzed in conjunction with other hindrance demands, which was the case in this study. In addition, while work role adjustment was a strong factor influencing IBTs' career satisfaction, family adjustment was not as strong when evaluated together with work adjustment. However, when evaluated without the influence of other predictors, the correlation between family adjustment and career satisfaction was strong and significant (see Table 1). This may point to the possibility that family adjustment indirectly affects career satisfaction, through the more proximal factor of work adjustment. This would be

consistent with spillover theory (Judge & Ilies, 2004; Williams & Alliger, 1994), where experiences in one domain can transfer and affect another. However, instead of family role adjustment directly affecting career satisfaction, as proposed in the study, perhaps family role adjustment indirectly affects career satisfaction by first affecting work role adjustment. The positive and significant relationship between work and family role adjustment in this study and in past research looking at the association between the two forms of adjustment (*e.g.*, Caligiuri et al., 1998) point to the possibility that this may in fact be the case.

Future Research

A possible theoretical extension from this model is to consider the cross-domain effect of work and family demands. Based on spillover theory, it is possible that demands experienced in one life role (*e.g.*, work role) could affect another role (*e.g.*, family role). Two perspectives in this literature guide our understanding of spillover: conflict and enrichment. In the core of the conflict perspective is the idea that people have limited resources (*e.g.*, energy)(Hobfoll, 1989) and participation in one role depletes scarce resources that then cannot be used for participation in another life role (Greenhaus & Beutell, 1985) thus creating conflict between the two roles. On the other hand, the enrichment perspective suggests that participation in multiple roles can be beneficial to the extent that experiences in one role can improve life in another domain (Greenhaus & Powell, 2006). It is possible that challenge stressors would allow for the accumulation of new positive experiences, such as feelings of accomplishment and the ability to develop new skills and acquire knowledge. Therefore, facing challenge stressors in one life

domain may spill over and enrich another domain. On the other hand, hindrance stressors would have purely deleterious cross-domain effects. Such a spillover effect of challenge and hindrance stressors has been suggested by LePine and colleagues (2007) but has not been empirically analyzed. In regard to work and family role adjustment, it is possible that employees' perceptions of their role adjustment could be influenced by cross-domain challenge and hindrance demands.

In this study the focus was on understanding the direct and indirect effects of different types of life role demands on IBTs' career satisfaction, however, the model can be expanded by adding relevant moderators, which would paint a more comprehensive picture of IBTs' experiences. It is especially interesting to examine whether the indirect effect of work and family demands on IBTs' career satisfaction through adjustment is conditional on different levels of relevant factors (*i.e.*, moderated mediation). For example, personality has been found to influence the relationship of challenge and hindrance demands to various attitudinal and behavioral outcomes (*e.g.*, Rodell & Judge, 2009). Personal (*e.g.*, cognitive flexibility) or domain specific resources (*e.g.*, family or work social support) could also have an influence, as suggested in the Job Demands-Resources (JD-R) model (Demerouti, Nachreiner, Bakker, & Schaufeli, 2001). Furthermore, moderators specific to IBTs (*e.g.*, frequency of travel), can further elucidate this global employment experience.

While this model considered some of the most common demands experienced within the work and family domains, it would be valuable to assess the effects of other demands affecting the global employment experience. For example, in relation to task

stressors, time pressure, usually considered a challenge demand, could be a relevant stressor within both work and family roles. The commonly encountered relational demand of interpersonal conflict, which could be considered a hindrance, may also be examined as part of understanding global employees' work and family roles.

It would be interesting to see whether this model could be applied to other forms of global employees, who do not travel frequently or to diverse foreign locations (*e.g.*, corporate expatriates who remain in one foreign location, international commuters). Application of this model to other forms of global employment could perhaps yield slightly different results. For example, it is possible that for traditional expatriates, who very often relocate with their families, the family domain factors could have a stronger influence on career satisfaction. In addition, since the challenge and hindrance stressors framework has received very limited attention in the global employment literature (*e.g.*, Firth et al., 2013) and not at all where family demands are considered, it would be beneficial to examine this differentiated classification of demands in all forms of global employment.

While the present study focused on the career satisfaction of IBTs, I encourage future research to examine other theoretically relevant success indicators of IBTs' global work responsibilities. The global employee literature has looked at outcomes such as performance and turnover intentions (*e.g.*, Birdseye & Hill, 1995; Kraimer, Wayne & Jaworski, 2001), which are also relevant in the context of international business travel. Based on role theory, other domain specific outcomes could also be of interest, such as work and family satisfaction or work and family performance.

Limitations

As with all studies, this has some limitations that can provide a basis for future research. A possible empirical limitation is that the family domain demand of role overload was assessed with only two items. While this decreases confidence in regard to the content validity of this measure (Hinkin, 1998), the rest of the variables in this study exhibited strong psychometric properties and were assessed with a greater number of items to accurately capture the content domain of their respective constructs. Nevertheless, it would be beneficial to examine the model using a more robust and comprehensive family role overload measure.

Another empirical limitation is that the data were self reports. Although this data collection approach can be very useful in assessing perceptions (*e.g.*, work and family adjustment) of employees (Spector, 1994), problems due to common method bias might be an issue (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, data for the outcome of career satisfaction was collected approximately one month later, which should remedy to an extent the problem of common method bias (Podsakoff et al., 2003). It would be beneficial, however, if in the future, the model is re-tested with a three-wave data collection approach instead of with two waves as in this study. In addition, this study can be replicated with multiple-source data. For example, information on family challenge and hindrance demands could be obtained from spouses, also spousal family role adjustment and family satisfaction could be examined to provide additional insights.

Theoretical and Practical Implications

The first contribution of this study lies within the creation and test of a theoretically grounded and holistically derived model of the global employment experience of international business travelers. While the use of this form of global employees has been on the rise, research is lacking behind with the creation of theoretically sound and comprehensive models. By basing my theoretical arguments on role theory, both the work and family life domains were examined in order to more fully understand direct and indirect influences on IBTs' career satisfaction.

The focus on both the work and family domains also allowed for further and more thorough examination of the effect of in-role demands. The second contribution of the study is in regard to providing evidence that demands do not have a purely detrimental effect on successful global employment as previously thought. Integrating the challenge and hindrance stressors framework, I was able to show that, while some demands have a detrimental effect on adjustment, others are beneficial. This phenomenon has been well reported in the general management literature (*e.g.*, Cavanaugh et al., 2000; LePine et al., 2004; LePine et al., 2005) but is rarely realized in regard to traditional expatriation and not applied at all in the context of international business travel. Third, by examining not only the work but also the family domain, I expanded the application of the challenge and hindrance stressors framework to the understanding of family demands. Previously thought to be purely detrimental, family role demands in this study exhibited differentiated positive and negative effects on IBTs' family role adjustment. Finally, the challenge and hindrance stressors framework mainly focuses on task-related demands and does not specifically address demands that arise from person to person interaction. With

the help of role theory, which addresses the importance of both the task and relational factors affecting in-role experiences, I expand the content domain of the challenge and hindrance stressors framework to include relational demands. This would allow for a more comprehensive understanding of the types of demands experienced not only by IBTs but by employees in general.

From a practical standpoint, with increased expatriation costs, the necessity of companies to rely more and more on international business travelers (IBTs) increases and thus it is vital to gain a comprehensive understanding of this global employment experience and the work and family factors that contribute or deter its success. This study suggests that work and family demands may have a differentiated beneficial or deleterious effect on IBTs' work and family role adjustment. While there is evidence of such differentiated effect in the context of domestic employees, there is little consideration given to global employees. Moreover, this study allows for the ability to better understand the influence of family stressors, as well as, of stressors associated with the various interactions that IBTs engage in. Based on this study companies should focus on minimizing deleterious work demands for IBTs, such as work role overload and embrace motivational demands, such as coworkers' expectations for social support. While family adjustment was not as strongly related to career satisfaction as was work adjustment, it is still advisable that organizations design support programs for IBTs that consider addressing not only work factors but also factors within the family.

Conclusion

Integrating role theory with the challenge and hindrance stressors framework I create and test a model of the influence of work and family demands on international business travelers' (IBTs) subsequent career satisfaction through work and family role adjustment. I suggest that demands within work and family roles have differentiated beneficial and deleterious effects for IBTs. Results provide general support for the proposed model and emphasize the importance of the work role over the family role for IBTs evaluation of their career success.

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APPENDIX A

Consent Form (Appears in the Beginning of the Online Survey)

University of Wisconsin – Milwaukee: Consent to Participate in Online Research

Study Title: Work, Family, and Global Careers

Person Responsible for Research: Dr. Margaret Shaffer and Ms. Mihaela Dimitrova, University of Wisconsin-Milwaukee

Study Description: The purpose of this research study is to understand how employees and their families are affected by global work responsibilities and experiences. Approximately 500 subjects will participate in this study. If you agree to participate, you will be asked to complete two online surveys within the next few months that will each take about 15-20 minutes to complete. The questions will ask about your experiences as an international business traveler, attitudes towards your work and your family, and general demographic information.

Risks / Benefits: Risks to participants are considered minimal. There will be no costs for participating. Collection of data and survey responses using the internet involves the same risks that a person would encounter in everyday use of the internet, such as breach of confidentiality. While the researchers have taken every reasonable step to protect your confidentiality, there is always the possibility of interception or hacking of the data by third parties that is not under the control of the research team.

Confidentiality: Your responses are completely confidential and no individual participant will ever be identified with his/her answers. Identifying information such as your Qualtrics ID number will be collected to link your responses on the first survey with your answers on the second survey. The researchers receive no other identifying information from Qualtrics, and as such, cannot link your Qualtrics ID number to you personally. Data will be retained on the Qualtrics website server for 3 weeks following the release of the survey and will be deleted after this time. However, data may exist on backups or server logs beyond the timeframe of this research project. Data transferred from the survey site will be saved in an encrypted format for approximately five years. Only the persons responsible for the research (Dr. Margaret Shaffer and Ms. Mihaela Dimitrova) will have access to the survey responses. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records. The research team will remove your identifying information after linking the data and all study results will be reported without identifying information so that no one viewing the results will ever be able to match you with your responses.

Voluntary Participation: Your participation in this study is voluntary. You may choose to not answer any of the questions or withdraw from this study at any time without penalty. Your decision will not change any present or future relationship with the University of Wisconsin Milwaukee.

Who do I contact for questions about the study: For more information about the study or study procedures, contact Ms. Mihaela Dimitrova at mihaela@uwm.edu.

Who do I contact for questions about my rights or complaints towards my treatment as a research subject? Contact the UWM IRB at 414-229-3173 or irbinfo@uwm.edu

Research Subject's Consent to Participate in Research:

By entering this survey, you are indicating that you have read the consent form, you are age 18 or older and that you voluntarily agree to participate in this research study.

Thank you!

IF YOU AGREE TO PARTICIPATE IN THIS STUDY, PLEASE CLICK "NEXT" TO BE TAKEN TO THE SURVEY.

APPENDIX B

Survey Variables Codebook

Study variables collected at Time 2

Career Satisfaction

Source: Greenhaus, Parasuraman and Wormley (1990)

Scale: 1- strongly dissatisfied to 5-strongly satisfied

Please rate the extent of your satisfaction about the progress you have made with respect to your career.

1. How satisfied are you with the progress you have made toward meeting your goals for advancement?
2. How satisfied are you with the progress you have made toward development of new skills?
3. How satisfied are you with the success you have achieved in your career?
4. How satisfied are you with the progress you have made toward meeting your goals for income?
5. How satisfied are you with the progress you have made toward meeting your overall career goals?

Greenhaus, J. H., Parasuraman, S., & Wormley, W. M. 1990. Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal*, 33(1): 64-86.

Study variables collected at Time 1

Work and Family Role Adjustment

Source: Shaffer et al., (under review)

Scale: 1 – not at all to 5-to a great extent

Please indicate the extent to which you feel comfortable with each aspect of your global employment:

Work role adjustment

1. My specific job responsibilities
2. My activities or tasks at work
3. My work hours
4. Communications among my colleagues (*e.g.*, coworkers, direct reports)
5. The work attitudes of employees in the host country
6. The corporate culture of the host country
7. Collegiality among colleagues
8. Teamwork among my colleagues

Family role adjustment

1. The quality of time I spend with family members
2. How we handle role responsibilities in our family
3. My participation in family activities and tasks
4. My relationship with my partner/family
5. Communication among family members
6. How we make decisions as a family

Shaffer, M.A., Reiche, S., Dimitrova, M., Lazarova, M., Chen, S., & Westman, N. (2013). Expatriate work and family role adjustment: Scale development and validation. *Presented at the Academy of International Business Meeting, Istanbul, Turkey.*

Work instrumental support expectations

Source: adapted from ten Brummelhuis et al., (2010)

Scale: 1-never to 5 always

For each statement, please choose the response that is most applicable to you.

1. My colleagues expect me to help them out when they are late for work.
2. I am often the person that can be counted on to get everything done at work.
3. I am very often expected to help my colleagues when they fail to carry out a task at work.
4. I am expected to regularly help my colleagues with job tasks and activities.

ten Brummelhuis, L. L., Bakker, A. B., & Euwema, M. C. (2010). Is family-to-work interference related to co-workers' work outcomes? *Journal of Vocational Behavior*, 77(3), 461-469.

Family instrumental support expectations

Source: adapted from ten Brummelhuis et al., (2010)

Scale: 1-never to 5-always

1. I am expected to help others in my family when they are late for other activities.
2. My family members expect me to get everything done at home.
3. I am often expected to help out when my family members fail to carry out a task at home.
4. I am expected to help my family members with household chores and care tasks.

ten Brummelhuis, L. L., Bakker, A. B., & Euwema, M. C. (2010). Is family-to-work interference related to co-workers' work outcomes? *Journal of Vocational Behavior*, 77(3), 461-469.

Work relational support expectations

Source: adapted from Lawrence, Gardner and Callan (2007)

Scale: 1-not at all to 5-very much

For each statement, please choose the response that is most applicable to you.

My colleagues expect me to:

1. help them feel better when they experience problems
2. listen to them when they need to talk about problems
3. be sympathetic and understanding about their problems
4. suggest ways to find out more about a situation that is causing their problems
5. share my experience of a problem similar to their
6. provide information which helps to clarify their problems
7. give them practical assistance when they experience problems
8. spend time helping them resolve problems
9. help when things get tough
10. reassure them about their ability to deal with problems
11. acknowledge their efforts to resolve problems
12. help them evaluate their attitudes and feelings about problems

Lawrence, S. A., Gardner, J., & Callan, V. J. (2007). The support appraisal for work stressors inventory: construction and initial validation. *Journal of Vocational Behavior*, 70(1), 172-204.

Family relational support expectations

Source: adapted from Lawrence, Gardner and Callan (2007)

Scale: 1-not at all to 5-very much

For each statement, please choose the response that is most applicable to you.

My family members expect me to:

1. help them feel better when they experience problems
2. listen to them when they need to talk about problems
3. be sympathetic and understanding about their problems?
4. suggest ways to find out more about a situation that is causing their problems
5. share my experience of a problem similar to theirs
6. provide information which helps to clarify their problems
7. give them practical assistance when they experience problems
8. spend time helping them resolve problems?
9. help when things get tough?
10. reassure them about their ability to deal with problems?
11. acknowledge their efforts to resolve problems?
12. help them evaluate their attitudes and feelings about problems?

Lawrence, S. A., Gardner, J., & Callan, V. J. (2007). The support appraisal for work stressors inventory: construction and initial validation. *Journal of Vocational Behavior*, 70(1), 172-204.

Work role overload

Source: Bolino and Turnley (2005)

Scale: 1-strongly disagree to 5-strongly agree

For each statement, please choose the response that is most applicable to you.

1. The amount of time I am expected to work is too great.
2. I never seem to have enough time to get everything done at work.
3. It often seems like I have too much work for one person to do.

Bolino, M. C., & Turnley, W. H. (2005). The personal costs of citizenship behavior: the relationship between individual initiative and role overload, job stress, and work-family conflict. *Journal of Applied Psychology*, 90(4), 740.

Family role overload

Source: Cammann, Fichman, Jenkins, and Klesh, (1979)

Scale: 1- strongly disagree to 5-strongly agree

The following statements refer to your family activities and responsibilities. For each statement, please choose the response that is most applicable to you.

1. I have too much work to do at home to do everything well.
2. The amount of work I am asked to do at home is fair. (R) (item not used in this study)
3. I never seem to have enough time to get everything done at home.

Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1979). *The Michigan Organizational Assessment Questionnaire*. Unpublished manuscript, University of Michigan, Ann Arbor, MI.

Work emotional demands

Source: Van Veldhoven and Meijman (1994)

Scale: 1-never to 5-always

For each statement, please choose the response that is most applicable to you.

1. Others call on me personally in my work.
2. People at work treat me with appropriate respect and politeness. (R) (item not used in this study)
3. I have to contact with difficult people in my work.
4. My work puts me in emotionally upset situations.
5. I face emotionally charged situations in my work.

Van Veldhoven, M., & Meijman, T. 1994. Het meten van Psychosociale arbeidsbelasting (The measurement of psychosocial job demands). Amsterdam: NIA.

Family emotional demands

Source: adapted from Van Veldhoven and Meijman (1994)

Scale: 1-never to 5-always

For each statement, please choose the response that is most applicable to you.

1. Family members treat me with appropriate respect and politeness. (R) (item not used in this study)
2. Others at home are difficult to deal with.
3. My family life puts me in emotionally upset situations.
4. I face emotionally charged situations at home.

Van Veldhoven, M., & Meijman, T. 1994. Het meten van Psychosociale arbeidsbelasting (The measurement of psychosocial job demands). Amsterdam: NIA.

Age

Age:

Gender

Gender:

- a. Male
- b. Female

Marital Status

Which of the following best describes your marital/partner status?

- a. Currently married or in a committed relationship
- b. Never married/single
- c. Divorced/separated
- d. Widowed

IBT experience

How long have you been traveling internationally for business?

MIHAELA N. DIMITROVA
 University of Wisconsin-Milwaukee
 Lubar School of Business
 3202 N. Maryland Avenue
 Milwaukee, WI 53211
mihaela@uwm.edu

EDUCATION

UNIVERSITY OF WISCONSIN – MILWAUKEE, Milwaukee, USA PhD in Organizations and Strategic Management Concentrations: Organizational Behavior/Human Resources and International Business Dissertation: Three essays on refining the challenge and hindrance stressors framework	September 2009 – May 2014
MARQUETTE UNIVERSITY, GRADUATE SCHOOL OF BUSINESS, Milwaukee, US Master of Science in Human Resources	2009
AMERICAN UNIVERSITY IN BULGARIA, Blagoevgrad, Bulgaria Bachelor of Arts degree with majors in Business Administration and European Studies	2007

SCHOLARLY PUBLICATIONS

- Lau, V., Dimitrova, M. N., Shaffer, M.A., Davidkov, T., & Yordanova, D. 2012. Entrepreneurial readiness and firm growth: An integrated etic and emic approach. *Journal of International Management*.
- Dimitrova, M. N., Chia, S. I., Luk, D., Shaffer, M.A., & Tay, C. 2012. International business travelers and commuters: Curvilinear effects of travel frequency. *Best Paper Proceedings of the 2012 Academy of Management Meeting*.

CONFERENCE PRESENTATIONS

- Dimitrova, M., & Shaffer, M. 2014. Dynamic interaction effects of job demands on daily goal achievement satisfaction and daily work engagement. *To be presented at the Academy of Management, Philadelphia, PA.*
- Westman, M., Chen, S., Dimitrova, M., Reiche, S., Lazarova, M., & Shaffer, M. 2014. International assignees' work and family role performance: A demands and resources perspective. *To be presented at the Work and Family Research Network Conference, New York, NY.*
- Hsu, Y., Luk, D., Dimitrova, M., Miller, G., & Shaffer, M.A. 2013. The interplay between personal, role and collective identities in the work-family interface. *Presented at the Academy of Management, Orlando, FL.*
- Shaffer, M.A., Reiche, S., Dimitrova, M., Lazarova, M., Chen, S., & Westman, N. 2013. Expatriate work and family role adjustment: Scale development and

validation. *Presented at the Academy of International Business, Istanbul, Turkey*

- Dimitrova, M.N., Yunlu, D., Lau, V., Shaffer, M.A., Davidkov, T., & Yordanova, D. 2013. Internalizing legitimacy: How entrepreneurs' perceptions of their status in society increases innovative behaviors. *Presented at the Academy of International Business, Istanbul, Turkey*
- Dimitrova, M. N., Chia, S. I., Tay, C., Shaffer, M.A., & Luk, D. 2012. Effects of international travel frequency on the career attitudes of global business travelers. *Presented at the Society for Industrial and Organizational Psychology, San Diego, CA.*
- Sekhar, S., & Dimitrova, M. 2011. Effects of firm resource characteristics on shareholder activism. *Nominated for Best Paper Award at the Midwest Academy of Management, Omaha, NE.*
- Dimitrova, M.N., Lau, V., Shaffer, M.D., Davidkov, T., & Yordanova, D. 2011. Entrepreneurial social status and business growth: The interdependent relationship between society and entrepreneurs across Bulgaria, Hong Kong, and mainland China. *Presented at the Academy of International Business, Nagoya, Japan.*
- Dimitrova, M.N., Davidkov, T., Yordanova, D., & Shaffer, M.A. 2011. Entrepreneurial social status: The interdependent relationship between society and entrepreneurs. *Presented at the Society for Industrial and Organizational Psychology, Chicago, IL.*
- Dimitrova, M. N., Winkel, D. E., Joplin, J. R. W., Francesco, A. M., & Lau, T. 2010. Work and family role salience: Comparison of individual differences across and within geographical clusters. *Presented at the Academy of International Business, Rio de Janeiro, Brazil.*
- Luk, D. M., Dimitrova, M. N., & Wyland, R.W. 2010. Influence of cross-cultural adjustment on international commuters and their families: A spillover and crossover model of work family conflict. *Presented at the Academy of International Business, Rio de Janeiro, Brazil.*

MANUSCRIPTS UNDER REVIEW AND IN PROGRESS

- Shaffer, M.A., Reiche, S., Dimitrova, M., Lazarova, M., Chen, S., & Westman, N. Expatriate work and family role adjustment: Scale development and validation. *Journal of International Business Studies*. (R&R)
- Dimitrova, M.N., Yunlu, D., Lau, V., Shaffer, M.A., Davidkov, T., & Yordanova, D. Internalizing legitimacy: How entrepreneurs' perceptions of their status in society increases innovative behaviors. *Target Journal of Management*
- Dimitrova, M. N., Chia, S. I., Luk, D., Shaffer, M.A., & Tay, C. International business travelers: Curvilinear effects of travel frequency on career satisfaction. *Target Journal of Applied Psychology*

Luk, D. M., Dimitrova, M. N., Shaffer, M.A., & Wyland, R.W. Opening the black box within work and family conflict and facilitation: Conservation of resources perspective. *Target Journal of Applied Psychology*

Hsu, Y., Luk, D., Dimitrova, M., Miller, G., & Shaffer, M.A. 2013. The interplay between personal, role and collective identities in the work-family interface. *Target Journal of Applied Psychology*

TEACHING EXPERIENCE

- Human Resource Management (Graduates, Lecturer Spring 2014)
- Organizational Behavior at Marquette University (Undergraduates, Adjunct Lecturer, Fall 2013)
- International Business (Undergraduates, Lecturer Summer 2013, 4.3/5 SFQ).
- Future Success Program (Introducing high-school students to Human Resource Management, 2013)
- Organizational Behavior (Undergraduates, Lecturer 2012, 4.3/5 SFQ).
- Organizational Behavior (Undergraduates, Teaching Assistant 2011-2012, 4.8/5 SFQ).
- Introduction to Business (Undergraduates, Teaching Assistant Fall 2010, 4.7/5 SFQ)
- In the process of completing Basic Teaching Certificate awarded by University of Wisconsin-Milwaukee

PROFESSIONAL AND SERVICE ACTIVITIES

- Reviewer Academy of Management conference 2011-2014
- Reviewer Academy of International Business conference 2011, 2013
- Member Academy of Management, Academy of International Business, Society of Industrial and Organizational Psychology
- Student consultant for the PhD Program Committee at the University of Wisconsin-Milwaukee 2013

AWARDS

- Chancellor's Fellowship from Lubar School of Business, University of Wisconsin-Milwaukee
- Roger L. Fitzsimonds Doctoral Scholarship (\$5,000), University of Wisconsin-Milwaukee
- Business Advisory Council Doctoral Scholarship (\$2,000), University of Wisconsin-Milwaukee
- Nominated for Best Paper Award at the 2011 Midwest Academy of Management, Omaha, NE