

EXAMINING THE POSSIBLE REDUNDANCY OF TRANSFORMATIONAL
LEADERSHIP AND SUPERVISOR SOCIAL SUPPORT

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EXAMINING THE POSSIBLE REDUNDANCY OF TRANSFORMATIONAL
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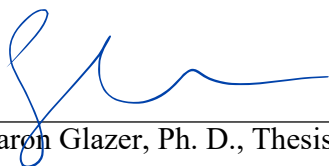
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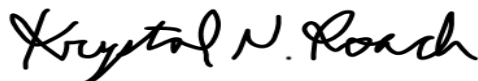
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ABSTRACT

EXAMINING THE POSSIBLE REDUNDANCY OF TRANSFORMATIONAL LEADERSHIP AND SUPERVISOR SOCIAL SUPPORT

Cross-cultural empirical evidence indicates that transformational leadership (TFL) and supervisor social support help employees cope with stressors in the workplace. Examination of the item content across measures of both constructs suggests that they might be addressing the same concept. Two studies examine whether TFL and supervisor social support are discrete or redundant. Study 1 consisted of 234 participants from the general adult working population in the USA, and Study 2 consisted of nurses from the USA ($n = 390$), Germany ($n = 118$), and Spain ($n = 132$). The constructs were correlated with each other and several stress-related variables. Principal Component Analyses (PCAs), as well as correlational and invariance analyses, were used to determine the potential construct redundancy. The results indicated likely redundancy of TFL and supervisor social support. Moreover, all independent correlations between TFL and supervisor social support with the other stress-related variables were mostly invariant. Theoretical implications of these findings suggest that TFL and supervisor social support may be studied as the same construct, expanding the relevant literature on each concept. Practical implications may include advances in the development of leadership interventions and leadership training programs.

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INTRODUCTION

Supervisor behaviors significantly influence employees' attitudes, emotions, and actions in the workplace (e.g., Saez, 2020; Schin & Racovita, 2013; Wu et al., 2021). Ineffective leadership has a significant impact on the occupational strain experienced by employees, as 44% of the participants in Jacobs et al.'s (2013) study reported leaving their career paths due to dissatisfaction caused by the stress induced by poor leadership. Employees who report that their supervisors are more supportive typically report having less strain (Fukui et al., 2019). The findings were the same for employees who report having a transformational type of leader (Salem, 2015). Both a) transformational leadership and b) supervisor social support are often studied in relation to employee attitudes, affects, and behaviors (Bhanthumnavin, 2003; Dung & Hai, 2020; Islam et al., 2021), however their relation to one another has had limited inquiry. Liaw et al. (2010) found that supervisor social support mediated the relationship between transformational leadership style and customer orientation; however, given the strong and positive correlation between the two constructs in their study, it is still not clear if they are redundant.

Transformational leadership (TFL) and supervisor social support have both been linked with reduced employee strain (Fukui et al., 2019; Salem, 2015), and they have even been connected with increased customer orientation, job performance, and employee engagement (Hayati et al., 2014; Liaw et al., 2010; Manzoor et al., 2019; Mohamed & Ali, 2016; Park et al., 2018). Because both TFL and supervisor social support have been associated with positive work-related outcomes, further understanding their relationship with each other may help practitioners and organizations develop more

in-depth leadership interventions and conduct more focused research regarding employee effectiveness in the workplace. Better understanding employee experiences of supervisory behaviors can guide interventions that maintain or create a more positive work environment for employees, specifically when implementing research regarding supervisory behaviors' links with employee experience outcomes (Saez, 2020; Smith, 2015).

In addition to their commonalities with work-related variables, TFL and supervisor social support both leverage an emotional component to guide employees towards shared vision and job-related efficiency (Bass, 1999; Bhanthumnavin, 2003; Burns, 1978). TFL is a style in which a leader leverages an emotional connection with followers in order to (a) create a shared vision, (b) to identify needed organizational change, and (c) to inspire team members towards this change (Bass 1999; Burns, 1978). Supervisor social support refers to the emotional, informational, and material backing supervisors give to their employees (Haas, 2019). Given the commonalities between the two constructs, the emphasis on emotional connection, and the common goal of fostering success and motivation in employees, further inspection of their possible redundancy is needed. Specifically, as supervisor social support can involve emotional backing, understanding whether the two constructs are redundant can be beneficial to the comprehension and application of TFL and supervisor social support practices.

Addressing this possible redundancy is important for the field of organizational science, as redundant constructs conflict with the canon of parsimony mandated in scientific research (Le et al., 2010). Occam's razor, a central principle to behavioral and scientific research, suggests that concepts or constructs should not be subject to

extraneous conceptualization, and should not be multiplied “beyond necessity” (Schaffer, 2014). Redundancy in constructs can deter the process of cumulative and systematic research via proliferation (Le et al., 2010). Construct redundancy has been found to be a problematic issue within leadership literature, violating the principle of parsimony (Banks et al., 2018). As TFL and supervisor social support are similar theoretically and empirically, understanding whether they are the same construct has important implications for the future of workplace research. In particular, it would provide insight into whether these constructs are discrete and should continue to be studied as such, or whether they should be studied as the same construct. This study examines TFL and supervisor social support in relation to each other, as well as to role stressors, employee psychological well-being, anxiety, affective organizational commitment (AOC), and turnover intention in order to determine whether the constructs are discrete or whether they are redundant. Moreover, these relationships are examined in two studies. Study 1 focuses on a general sample of working adults in the United States of America (USA) and Study 2 focuses on nurses from three countries: USA, Germany, and Spain.

LITERATURE REVIEW

Same or Discrete Constructs?

The organizational literature has largely examined supervisor social support and transformational leadership constructs in isolation (see Chen & Wu, 2020; Cheung & Wong, 2011; and Liaw et al., 2010, for exceptions). Specifically, there is an abundance of research regarding each construct in relation to other work-related variables. For example, TFL and supervisor social support have each been studied individually in relation to employee well-being, AOC, and turnover intention (Jacobs et al., 2013; Mahdi

& Top, 2021; Porter, 2015). Moreover, TFL and supervisor social support are operationalized in distinct manners. That is, the most common measures of TFL and supervisor social support, respectively, are different in terms of content and technique. For example, measures of TFL often emphasize characteristics of the leader in relation to both employees and to the job role and the organization. Two sample items (i.e., content) include, “I have trust in his/her ability to overcome any obstacle,” or “S/he gets us to rely on reasoning and evidence to solve problems” (Berger et al., 2012). A measure such as this emphasizes not only the leader’s behaviors towards subordinates, but also subordinates’ perceptions of a leader’s abilities and characteristics. Measures of supervisor social support, however, include items that pertain to the supervisor’s direct behaviors in relation to subordinates. For example, items may include “My supervisor at work goes out of his or her way to do things to make my work life easier for me” or “It is easy to talk with my supervisor at work” (Caplan et al., 1975). TFL is often operationalized in reference to inspiring employees and fostering organizational commitment through a specific style of leadership, while emphasizing specific leader characteristics (Bass, 1995). Supervisor social support, in contrast, refers more specifically to supervisors’ practices (i.e., technique) that equip employees to succeed in their positions (Kossek et al., 2011).

However, upon closer inspection, TFL and supervisor social support behaviors appear to share remarkable similarities and considerable overlap. For example, both attend to empathy, address respectful treatment and acceptance, and focus on utility of the interpersonal interaction. Moreover, both variables appear to help subordinates in similar ways. For example, both buffer against the adverse consequences of stressors on

strains (e.g., Diebig et al., 2017; Fukui et al., 2019; Schmidt et al., 2014). Measures of TFL also include items that are similar to those on supervisor social support measures with regard to supervisor or leader taking empathetic actions towards subordinates. Whether the constructs overlap enough to be considered similar has not been examined adequately. Understanding the relationship between TFL and supervisor social support can assist researchers in determining whether it is necessary to capture both employee perceptions of TFL and supervisor social support or whether capturing one of the two is sufficiently parsimonious.

As will be shown, TFL and supervisor social support have similar functions; TFL leverages an emotional bond, and supervisor social support involves emotional support and connection. In studies that have examined both constructs, there appears to be a strong positive relationship between the two. For example, Chen and Wu (2020) found that TFL led to a higher degree of perceived supervisor support and Liaw et al. (2010) found supervisor social support mediated the relationship between TFL and customer orientation. These conflicting findings suggest that, on the one hand, TFL and supervisor social support may have some degree of redundancy (e.g., one construct may be a facet of the other); on the other hand, they might still be discrete constructs. Since it is not clear if the two constructs are discrete or redundant, the current study attempts to examine their redundancy. In this section, I present literature on TFL and supervisor social support and their connection to employee work-related stressors, strains, and organizational outcomes (Jacobs et al., 2013; Mahdi & Top, 2021; Porter, 2015).

Transformational Leadership

The term “transformational leadership” was originally coined by James Burns

(1978) to describe how leaders guide their followers towards a higher level of motivation and morality. Its origins focused on a shared vision guided by a moral compass, in which leaders inspired their followers to work towards a shared greater cause, rather than to focus solely on their own needs or interests. Burns (1978) defines TFL as the process by which a leader employs a strong emotional attachment with followers to drive collective commitment to organizational success and growth, which fosters group performance beyond expectation. Several years later, Bass (1985) expanded on TFL in his development of the Full-Range Leadership Theory model. Bass's explanation of leadership focused less on morality and more on the various goals that might underlie different styles of leadership. This model also expands on different leadership styles, differentiating between different leader relationships with employees, to explain how leaders foster performance and commitment (Antonakis & House, 2014).

Bass's (1985) Full-Range Leadership model consists of three main leadership styles across a spectrum: *laissez-fair*, transactional, and transformational. *Laissez-faire leadership* is a passive leadership style in which leaders provide little or no guidance to subordinates and allow a fully autonomous work model for their subordinates.

Transactional leadership style is one in which the leader guides subordinates in a more contractual manner; it is based on a "give and take" exchange. For example, a leader might give tangible rewards, such as bonuses or promotions, for meeting production deadlines, and subordinates might give more of their time to performing work so as to enjoy those rewards, bonuses, or other desired outcomes. Finally, *transformational leadership*, the focal style of leadership in this paper, refers to leader behaviors that emphasize the goals and needs of their followers, utilizing intrinsic motivation to guide

them towards a desired direction (Bass, 1999). Bass's (1985) definition of a transformational leader is someone who uses open communication, empowers their followers, understands that each follower is an individual, and coaches and mentors subordinates to work toward their personal potential.

Bass (1995) also delineated four components of TFL. In "idealized influence" leaders embody the ideal role model for followers and possess desired qualities, with charisma being central to the component (Conger, 1999). In "inspirational motivation" leaders provide a clear mission or direction for followers and inspire them toward this shared vision. In "individualized consideration" leaders express concern for the specific needs and feelings of each follower and exercise empathy and care towards each individual. The individualized consideration component of TFL involves individual support, consideration, and appreciation (Franke & Felfe, 2011). Finally, in "intellectual stimulation" leaders create motivational challenge for followers such that followers are urged to challenge the status quo and strive for new ideas and approaches.

Research on TFL has shown it to have important implications for employee experiences of role stressors, well-being, and work-related attitudes and behavior. TFL has been shown to positively predict employee well-being (Arnold, 2017; Nielsen et al., 2008) and reduce the effects of job stressors (Salem, 2015). TFL has been associated with lower strain experienced by employees (Schmidt et al., 2014) and has also been found to decrease employee anxiety (Kloutsiniotis et al., 2022). Franke and Felfe's (2011) research found that specifically, individualized consideration and idealized influence were related to higher levels of employee well-being, with AOC moderating this relationship.

TFL also increases AOC (Amin et al., 2018; Gyensare et al., 2016) and AOC has been found to mediate the relationship between TFL and turnover intention (Almas et al., 2020; Gyensare et al., 2016; Mahdi & Top, 2021). Additionally, when employees perceive a TFL style from their leaders, turnover intention decreases (Park & Pierce, 2020; Sun & Wang, 2017). Thus, not only does TFL directly influence turnover intention, but supervisors who employ a TFL style stimulate their subordinates' increased affective commitment, which indirectly influences subordinates' intentions to stay with their company.

Congruent with Frank and Felfe's (2011) findings that individualized consideration (marked by empathy and emotional care for each follower) is a key element for higher levels of employee well-being, a study conducted in Spain found that emotional demands and engagement mediated the relationship between TFL and positive leadership perceptions (Martinez et al., 2020). Thus, the emotional component of TFL may be important to the effectiveness of TFL on worker engagement and well-being. As supervisor social support also utilizes emotional connection, this component may be the source of redundancy between supervisor support and TFL.

Supervisor Social Support

One of the earliest conceptualizations of supervisor social support is the belief that one's supervisor values and cares for the employee (Kossek et al., 2011). Global measures of supervisor social support generally focus on a combination of feelings of being valued at work and having access to helping relationships in the workplace (Kossek et al., 2011). Although there are many different sources of support in the workplace—including supervisors, managers, and colleagues, as well as overall organizational support

(Beehr & Glazer, 2001)—the present study focuses on supervisor functional social support, addressing a positive work interaction between subordinate and supervisor, including the emotional, material, and informational guidance that supervisors provide (Caplan et al., 1975).

Supervisor social support can be given or experienced in two different ways: structural support and functional support (Beehr & Glazer, 2001). *Structural support* is the understanding that others are simply present and available to give support when needed, whereas *functional support* refers to the tangible or intangible supportive actions taken by supportive figures (Glazer, 2006). Functional support can be further differentiated by *emotional support*, which enhances a person's esteem or attends to the emotions of a person, and *instrumental support*, which could be in the form of tangible and/or informational assistance to (re)solve problems or complete tasks.

Emotional support from the supervisor involves providing general expressions of concern for employee well-being (Kossek et al., 2011). This expression of concern can include asking employees about their well-being, listening to their needs, and expressing empathy. Material (or tangible) support can include supervisors providing resources to employees, including, for example adequate office space and proper technology. Informational support involves the supervisor providing necessary knowledge to the employee (Glazer, 2006; Kossek et al., 2011), such as training or information on how to access necessary databases.

Employees who feel valued by their supervisors and have quality helping relationships with their supervisors have adequate supervisor social support. Supportive supervision can motivate subordinates to work more effectively (Bhanthumnavin, 2003).

It also has been found to be a vital factor in employee well-being in the workplace (Brough & Pears 2004; Hämmig, 2017; Harms et al., 2017; Talukder & Galang, 2021). Paralleling results between TFL and the same important work-related outcomes, research has shown a significant correlation between supervisor social support and increased well-being, increased AOC, and reduced turnover intention (Boamah et al., 2017; Dung & Hai, 2020; Hämmig, 2017; Mohamed & Ali, 2016; Orgambídez & Almeida, 2019; Pradhan & Pradhan, 2015; Sun & Wang, 2017). In contrast, inadequate supervisor social support relates to increased turnover intention (Galletta et al., 2011; Hämmig, 2017; Nagami et al., 2010). Supervisor social support has also been shown to directly reduce employee anxiety (Beehr & McGrath, 1991) and burnout (Hämmig, 2017), as well as to buffer the statistical effect of employee stressors and strains (Beehr et al., 1990).

TFL and supervisor social support have both been found to help create a positive work environment (Salem, 2015). However, their similar effects on outcome variables indicate the possibility of some level of redundancy. In short, TFL and supervisor social support appear to have similar positive impacts on the same work-related variables.

Overlap of Literature on Transformational Leadership and Supervisor Social Support

Given the above findings, it is clear that both TFL and supervisor social support involve an emotional tie with subordinates. Both act as motivators that enhance well-being (Jacobs et al., 2013) while reducing undesired attitudes, behaviors, and organizational consequences (Hämmig, 2017; Sun & Wang, 2017). For these reasons, it is likely that the constructs of TFL and supervisor social support overlap conceptually. Specifically, in light of prior studies' findings that individualized consideration enhances well-being and AOC and decreases psychological strains and turnover intention, it is

expected that TFL and supervisor social support will prove to be redundant, with individualized consideration being the primary element of this redundancy.

Understanding the extent to which TFL and supervisor social support are redundant or unique constructs would help to develop organizational interventions, as research regarding both TFL and supervisor social support could be referenced. It could also provide a more in-depth understanding of how these constructs can be used to benefit organizations. For example, if the constructs are indeed redundant, then research on supervisor social support could be referenced when implementing transformational leadership approaches.

Study Summary

It is imperative to determine whether TFL and supervisor social support are redundant because uncaptured redundancy potentially violates the principle of parsimony and hinders optimal development of research within the fields (Le et al., 2010; Pradhan & Pradhan, 2015). Due to similar correlations with variables, as well as a common reliance on emotional connection (Liaw et al., 2010), it is possible that TFL and supervisor social support represent the same construct.

The next section presents a general overview of the study, the populations, and contexts. It is followed by a methods section for each of two studies, their results, discussion, and general discussion.

GENERAL OVERVIEW OF METHODS

Overview

The present two-part study tests whether TFL or supervisor social support are stronger predictors of various individual and organizational outcomes. Study 1 employs a

general working population of adults, across many different professions, in the USA. Study 2 examines the extent to which the relationships between TFL and supervisor social support and outcomes are similar in a focused sample of nurses in the USA, as well as in Germany and Spain. To determine the role professional or national culture might play in results, it is advised to keep as many characteristics about the samples as consistent as possible (Broesch et al., 2020). A comparison of a sample of the general population of working adults in the USA to a sample of nurses in the USA shares the national, but not professional culture, whereas across national cultures, the samples share professional culture. The nursing profession is one that is rather consistent across national cultures (Glazer & Gyurak, 2008). Examining TFL and supervisor social support in different professional and national cultures can provide a more nuanced understanding of how these constructs are perceived and function, as culture acts as a shared meaning system (Fischer, 2009). Specifically, if relevant cultural differences are identified then different strategies for organizational assessments may be suggested. For this reason, rather than simply accepting that TFL and supervisor social support are discrete, it is important to confirm the assumption across different professional and national cultural contexts (Boussebaa, 2020; Fischer, 2009).

In Study 1, individual ratings of TFL in the workplace and individual ratings of supervisor social support are considered in relation to the variables of role stressors, employee psychological well-being, anxiety, AOC, and turnover intention, in order to determine whether the constructs are discrete or whether they are redundant. Prior research has supported the constructs' links to these variables.

Due to the emotional connection with employees that TFL leverages, along with the leader-subordinate relationship fostered with supervisor social support, TFL and supervisor social support may be redundant. Because TFL involves the leader creating an emotional connection with followers, and supervisor social support includes emotional guidance, it is possible that supervisor social support is involved in the process of TFL. The constructs may converge in that they will have similar relationships with other variables, with supervisor social support specifically converging due to the emotional connection component of TFL manifested through individualized consideration.

In Study 2, I test the same relationships with similar variables in samples of nurses from USA, Germany, and Spain. If the constructs appear to be redundant and do so in a similar manner across countries, then there might be some indication that the constructs are not clearly discrete and results of studies examining TFL or supervisor social support are leading to similar conclusions.

Focal Population and Context

The target population of interest in Study 1 is the general population of workers in the USA, and the target population of interest in Study 2 is nurses in hospitals and elder care facilities across three countries (USA, Germany, and Spain). Data for Study 1 included workers across different professions and with varying job titles. Some of the job titles of participants included “engineer,” “claims examiner,” “administrative assistant,” and “skydiving instructor.” High diversity of study participants assists in creating a more generalizable sample (Cheung et al., 2017).

Study 2 compares results between nurses in the USA, Germany, and Spain. In cross-national research, studying a single profession allows isolation of variation of

findings to be attributed to national culture (van de Vijver & Leung, 1997). Healthcare providers represent a group that faces numerous day-to-day stressors (Kelly & Hearld, 2020; Sang Long et al., 2014). Stressors they experience include high workload, low advancement opportunity, aggressive patients, and low financial compensation (Kelly & Hearld, 2020; Sang Long et al., 2014). Beehr and Glazer (2005) found that the stressors of role overload, role ambiguity, and role conflict were significant precursors to anxiety in nurses, which, in turn, was found to predict AOC.

As there are increasing levels of globalization in the modern workplace, it is also becoming increasingly important to examine variables and constructs across multiple cultural lenses (Boussebaa, 2020). The three countries examined in Study 2 have cultural similarities (including similar levels of individualism, power distance, and assertiveness) that suggest possible shared meanings and attitudes towards TFL and supervisor social support, but the redundancy between the two constructs in these countries remains unexplored thus far. The nurse sample is compared across cultures to examine the extent to which the findings are generalizable to cultures outside the USA.

STUDY 1

Study 1 examines convergence between TFL and supervisor social support constructs. In testing the extent to which the constructs overlap, their relationships with role-related stressor variables, well-being, anxiety, AOC, and turnover intention are compared within a general working adult population.

Hypotheses (H)

The aforementioned literature suggests that TFL may be redundant with supervisor social support. Both constructs leverage the emotional connection between

leaders and their employees in order to provide motivation. Given that TFL involves the individualized consideration of employees—working closely with them to develop their strengths and understand their viewpoints—it appears as though supervisor social support is a necessary element in the successful practice of TFL, or that individualized consideration is a necessary element of supervisor social support. Although studies have included both TFL and supervisor social support, to date no studies have examined whether TFL and supervisor social support are discrete constructs.

H_{1a}: TFL and supervisor social support will strongly positively correlate.

H_{1b}: The correlations between each of the components of TFL (idealized influence, inspirational motivation, individualized consideration, intellectual stimulation) and supervisor social support will not be invariant; individualized consideration will most strongly correlate with supervisor social support.

Research has also shown that the two focal constructs have remarkably similar relationships with the same work-related outcomes, including decreased work-related stress (Fukui et al., 2019; Salem, 2015), increased employee psychological well-being (Hämmig, 2017; Lyons & Schneider, 2009; Salem, 2015), increased AOC (Mahdi & Top, 2021; Orgambidez & Almeida, 2019), and decreased turnover intention (Fukui et al., 2019; Sun & Wang, 2017). The present study sets forth to demonstrate their redundancies.

H₂: TFL will positively correlate with (a) psychological well-being and (b) AOC, but TFL will negatively correlate with (c) role overload, (d) role conflict, (e) role ambiguity, (f) anxiety, and (g) turnover intention.

H₃: Supervisor social support will positively correlate with (a) psychological well-being

and (b) AOC, but TFL will negatively correlate with (c) role overload, (d) role conflict, (e) role ambiguity, (f) anxiety, and (g) turnover intention.

Finally, although null hypotheses are typically not posed in psychological research, this study's aim is to demonstrate that TFL and supervisor social support are redundant. Therefore, it is expected that:

H₄: The correlations between TFL and supervisor social support with role stressors, anxiety, work-related well-being, AOC, and turnover intention will be invariant.

Method

Participants

The sample for Study 1 is based on data gathered across three time points, from June to September 2021, through an online panel, available via Amazon's Mechanical Turk (MTurk). In the first wave, data were gathered from 334 respondents. In the second wave data were gathered from 261 respondents who completed Wave 1, and by Wave 3 239 respondents had submitted all three surveys. This study, however, is based on 234 U.S. working adults, as five individuals failed to pass attention checks or complete 75% of the survey in the final wave.

The gender identities of the final sample included 53% females ($n=124$), 46.2% males ($n=108$), .4% trans women ($n=1$), and .4% who preferred not to disclose ($n=1$). In terms of ethnicity of the final sample, 72.2% were White ($n = 169$), 10.3% were Asian or Asian-American ($n=24$), 9% were Black or African-American ($n = 21$), 7.3% were Hispanic, Latino, or of Spanish origin ($n = 17$), .4% were Middle Eastern or North African ($n = 1$), and .9% ($n = 2$) preferred to self-describe or preferred not to disclose. Ages ranged from 21 to 83 years, with most participants ranging between 35 to 40 years

of age ($n = 76$). The mean age was 40.99 years ($SD = 10.88$). The sample is mostly representative of the general US working adult population as stipulated in the 2020 US Bureau of Labor Statistics (BLS). The BLS found the general US population to be 77% White and 9% Black, which reflects slightly higher percentages than in the MTurk sample. The BLS found 6% of the US population to be of Asian background, indicating a lower percentage than the sample, and 18% to identify with Hispanic, Latino or Spanish origin, representing a much higher percentage than the MTurk sample.

Finally, the educational characteristics of survey respondents were relatively similar to that of the US labor force. Of the study sample, 52.6% had a bachelor's degree ($n = 123$), 23.1% had a high school diploma ($n = 54$), 19.7% had a master's degree ($n = 46$), 2.1% self-disclosed that they had associate degrees ($n = 5$), 2.1% had a doctorate ($n = 5$), and .4% self-disclosed that they attended trade school ($n = 1$). Regarding marital status, 44% of the participants were married or re-married ($n = 103$), 31.6% were single ($n = 74$), 11.5% were living with partner(s) ($n = 27$), 9.4% were divorced ($n = 22$), 1.7% were widowed/widower ($n = 4$), .4% were separated ($n = 1$), .9% preferred not to disclose ($n = 2$), and .4% indicated "other" ($n = 1$).

Measures

The main study variables were measured in Waves 2 and 3. All items were rated on a 7-point Likert-type scale, ranging from 1, 'strongly disagree,' to 7, 'strongly agree.' For all variables, higher mean scores (closer to 7) represented the variable's namesake. All measures used for Study 1 and Study 2 can be found in Appendix B.

Transformational Leadership. This study employed the Human System Audit Transformational Leadership (HSA-TFL) Short Scale, an 8-item measure developed by a

multinational team of researchers located in Spain (Berger et al., 2012). An example HSA-TFL item is “S/he is concerned with training those who need it.” TFL was assessed during the second wave. This measure contains two items for each of the four components of TFL. For idealized influence a sample item is “I have trust in his/her ability to overcome any obstacle.” A sample item for inspirational motivation is “S/he develops ways of motivating us.” A sample item for individualized consideration is “S/he is concerned with training those who need it.” A sample item for intellectual stimulation is “S/he promotes the use of intelligence to overcome obstacles.” Most research addressing TFL style employed the Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1995). However, because of its length, inaccessibility (it is not an open-source questionnaire), and questionable distinction between inspirational leadership and charisma, Berger et al. (2010, 2012) validated a short-form measure of TFL vis a vis the Human Systems Audit (HSA), a survey that includes several key variables for organizational diagnostics, amongst them—leadership. The HSA-TFL measure in relation to the MLQ, had strong psychometric properties and a positive correlation ($r = .84, p < .001$; Antonakis et al., 2003; Berger et al., 2012). Convergent validity has been found between the MLQ-5x (a version of the MLQ updated to contain a broader range of leadership measures) and HSA-TFL measures, indicating that both are adequate measures of TFL (Berger et al., 2012). The HSA-TFL measure was further found to have sufficient validity utilizing data from Spain, Portugal, Poland, and the United Kingdom, indicating that it sufficiently measures the intended TFL construct across countries (Berger et al., 2010). The Cronbach’s alpha for this measure was found to be .96 for this sample, which indicates solid internal consistency. In past research, reliability for the HSA-TFL has

been between .92 and .95, indicating strong internal consistency (Berger et al., 2010).

Supervisor Social Support. A four-item measure of supervisor social support (Caplan et al., 1975) was administered during the second wave. An example item is “It is easy to talk with my supervisor at work.” Respondents rated each item to indicate how their supervisor behaves towards them. The Cronbach’s alpha for this measure was found to be .96, which indicates solid internal consistency.

Role Stressors. Role overload, role conflict, and role ambiguity were assessed using a measure adopted from Beehr and Glazer (2005) during the second wave. Five items assessed each role stressor. A sample item for role overload is: ‘On my present job, the amount of work seems to interfere with how well I can do the job.’ One role overload item was reverse coded. An example role conflict item is: ‘I work with two or more groups who operate quite differently.’ Finally, an example item measuring role ambiguity is: ‘I have clear, planned goals and objectives for my job.’ All five role ambiguity items were reverse coded. Cronbach’s alpha reliability coefficients in the present study were found to be between .81 and .88, indicating sufficient reliability. Previous research has found these role stressors to display alphas between .70 and .85. (Beehr & Glazer, 2005).

Well-Being. Well-being was assessed during the second and third waves by 11 items from the 12-item version of Goldberg’s (1972, as cited in Banks et al., 1980) General Health Questionnaire (GHQ-12), adapted to the work context. One item was excluded due to its use of the ambiguous word, “stress.” A sample item is “I have been able to concentrate on what I am doing.” Five items were reverse scored. The alpha coefficients for this measure were .85 and .86, indicating strong internal consistency. Previous research has shown an alpha of .89 for the GHQ-12 (Zhong et al., 2022).

Anxiety. Job-related anxiety was assessed using four items from Parker and Decotiis' (1983) Job Stress Scale during the third wave. An example item is "My job gets to me more than it should." The Cronbach alpha coefficient for this measure was .94. Prior research has found the measure to have an alpha of .87 (Wu & Shih, 2010). Both indicate adequate reliability.

Affective Organizational Commitment. AOC was measured during the second and third waves using the Allen and Meyer (1990) Affective Commitment Scale, which consists of eight items. A sample item is "I would be very happy to spend the rest of my career with this organization." Four of the eight items were reverse coded. The present study found Cronbach alpha coefficients to be .95 (at T2) and .96 (at T3). Both of these analyses indicate adequate reliability.

Turnover Intention. Turnover intention was measured during the second and third waves with three items adapted from Beehr and Glazer (2005). An example item is "I will actively look for a new job in the next year." This measure was found in the present study to have a Cronbach's alpha of .95 for each wave. Prior research has shown the alphas for this measure to range from .75 to .86 (Beehr & Glazer, 2005), indicating adequate internal consistency.

Procedures

From June 2021 to September 2021, data were collected in three waves through an online panel design software, MTurk. Through MTurk, researchers are able to gather data from adults who are registered to complete surveys. When registered users acknowledge a Human Intelligence Task (HIT) – a virtual task that a worker can complete, submit, and obtain a reward for completion (Litman et al., 2017) - they may

choose to complete a survey, usually in exchange for some payment. Respondents are referred to as MTurkers and are reached in batches through CloudResearch (formerly known as TurkPrime). CloudResearch is a toolkit that evaluates participants (based on criteria set by researchers) from the MTurk database to allow researchers to save time and money sending out surveys (Litman et al., 2017). CloudResearch can accommodate specific sample sizes, variables, and control variables (Eyal et al., 2021). For this study, only MTurkers who self-identified as US citizens and worked at least 20 hours per week were invited to complete the survey.

Wave 1 was a screener survey with an estimated completion time of 10 to 15 minutes. The survey was open from mid-June to mid-July 2021 and data were gathered from 334 MTurkers. All respondents who submitted a secret code that was presented to them upon completion of the Wave 1 survey were compensated \$2.00 for their participation, even if they missed any attention check questions (i.e., “How many days are in the week?” “Orange is the first color represented in the rainbow,” “What would you say is your favorite beverage?” and “How many days are in the year?”) or did not qualify to take the survey based on eligibility inclusion criteria (working at least 20 hours per week and being a US citizen). In total, 36 respondents were not invited to complete the Wave 2 survey because either they did not fit the inclusion criteria, they did not pass the attention check questions, or they did not complete at least 75% of the first survey.

The remaining 298 respondents were invited to complete Wave 2 survey, which was administered from July to early August 2021. These respondents received the second survey two weeks after the initial screener survey. Of those, 261 completed the approximately 20-minute survey and earned another \$2.00. The Wave 2 survey focused

on transformational leadership, social support, stressors, and strains. Wave 2 respondents who did not pass the attention check questions were not invited to complete the survey at Wave 3, but they were compensated, nonetheless. Those individuals who completed at least 75% the second survey and did not miss any attention check questions were invited to complete the third survey, which was distributed about five to six weeks after the second survey, between early to end of September. For completion of the third, 8-to-10-minute survey, participants were compensated \$2.50. This amount is higher than previous amounts as a token of appreciation for participants' time. The total number of respondents who completed all three surveys was 239. Five of these participants were removed as they did not pass attention check questions, leaving 234 individuals in the final dataset.

Data Management

Data Cleaning. After each wave of data collection, another research assistant and I reviewed the database to ensure the respondents met the inclusion criteria (Wave 1) and then invited those who met the criteria and passed attention check questions to complete Wave 2 and then Wave 3. Failure to select the correct answer in the attention check questions rendered the respondents' answers invalid. Additionally, participants were not invited to complete subsequent surveys and were excluded from the analyses if they did not complete at least 75% of each survey administration. This exclusion was to ensure adequate attention and responsiveness. Five participants who failed attention check questions and did not complete 75% of the questions in the third survey were also excluded from the final dataset.

Data Analysis. This study employs inter-item correlations, assessments of

Cronbach's alpha coefficient for internal consistency, principal component analyses, and intercorrelations among variables. Item correlations above .60 are empirically indicative of items measuring the same construct (Piedmont, 2014).

Results

Inter-item correlations within the TFL and supervisor social support measures were analyzed to provide evidence that each measure assessed its intended construct. The item-correlations between the TFL and supervisor social support measures were analyzed as well (see Table 1). The inter-item correlations within the TFL measure, as well as within the supervisor social support measure were above .81, which indicates strong

Table 1

Inter-Item Correlations between TFL and Supervisor Social Support Items

Items	1	2	3	4	5	6	7	8	9	10	11	12
1. TFL 1	--											
2. TFL 2	.90	--										
3. TFL 3	.91	.91	--									
4. TFL 4	.84	.88	.87	--								
5. TFL 5	.87	.85	.85	.85	--							
6. TFL 6	.87	.87	.86	.81	.86	--						
7. TFL 7	.86	.84	.87	.83	.86	.88	--					
8. TFL 8	.88	.90	.91	.87	.84	.85	.86	--				
9. SSS 1	.85	.84	.87	.79	.79	.79	.81	.85	--			
10. SSS 2	.85	.85	.87	.82	.84	.83	.85	.84	.83	--		
11. SSS 3	.87	.85	.87	.81	.83	.82	.82	.85	.88	.89	--	
12. SSS 4	.81	.83	.82	.76	.79	.80	.81	.80	.81	.88	.85	--

Note. All correlations were significant at $p < .01$. TFL = Transformational Leadership;

SSS = Supervisor Social Support.

internal consistency (Tavakol & Dennick, 2011). The item correlations between TFL items and supervisor social support items were all above .79.

Principal Component Analyses

To test if the TFL and supervisor social support items resulted in two discrete factors, a principal component analysis (PCA) was performed. A PCA was performed using orthogonal (varimax). As TFL and supervisor social support have continually been studied as discrete constructs, reflected in the literature (Arnold, 2017; Kossek et al., 2011; Nielsen et al., 2008), the present analysis employs orthogonal rotation as the assumption of discrete factors indicates lack of correlation, and orthogonal rotation is used when it is assumed that factors are not correlated (Dattalo, 2014). Oblimin rotation was also performed to further confirm results. Per Ruscio and Roche (2012), as well as Kaiser (1960), factors should be retained when there is a minimum of 5% explained sample variance, and an eigenvalue greater than 1.00. Per Table 2, the PCA with the orthogonal rotation revealed that TFL and supervisor social support were not discrete factors, as 85.85% of the variance was accounted for by the initial factor. Moreover, the subsequent eigenvalue did not surpass 1.00 and accounted for less than 5% of the variance. This suggests redundancy between TFL and supervisor social support. The oblimin rotation presented similar results, with 86.99% of the variance accounted for by the first factor. Eigenvalues for this analysis can be found in Appendix C.

Per Table 3, of the 12 items across the two measures, all of the items loaded on the first factor. When forcing a two-factor solution, the items for TFL loaded better onto Factor 1, whereas the supervisor social support items load better onto Factor 2 (see Table

4). The forced two-factor solution indicated that the items for each construct do load better onto separate factors, however they all had cross-loadings that meet a minimum threshold of .40 (Hair et al., 1998) – indicating support for a one factor model. Overall, based solely on the PCA, TFL and supervisor social support items appeared to coherently address a single factor.

Table 2

Eigenvalues, Percentages of Variance and Cumulative Percentages for 8 TFL and 4 Supervisor Social Support Items (Varimax Rotation)

Factor	Eigenvalue	% of variance	Cumulative %
1	10.31	85.95%	85.95%
2	.34	2.80%	88.75%
3	.26	2.13%	90.88%
4	.19	1.60%	92.48%
5	.16	1.34%	93.82%
6	.15	1.28%	95.09%
7	.13	1.08%	96.18%
8	.12	.99%	97.17%
9	.10	.84%	98.00%
10	.09	.76%	98.76%
11	.08	.65%	99.41%
12	.07	.59%	100.00

Variable Correlations

Pearson's correlation coefficients, means, and standard deviations of the main study variables are presented in Table 5. Consistent with H_{1a}, TFL and supervisor social

support strongly positively correlated ($r = .94, p < .01$). Additionally, TFL (H2) and supervisor social support (H3) each positively correlated with well-being (r s ranged from .38 to .39, $p < .01$) and AOC (r s ranged from .45 to .48, $p < .01$). The two focal constructs also negatively correlated with role overload, role conflict, role ambiguity, anxiety, and turnover intention (r s ranged from -.27 to -.45, $p < .01$).

Table 3

Factor Loadings and Communalities for TFL and Supervisor Social Support Items

	Factor Loadings	Communality
TFL 1	.946	.895
TFL 2	.946	.894
TFL 3	.954	.909
TFL 4	.910	.829
TFL 5	.920	.847
TFL 6	.919	.845
TFL 7	.924	.854
TFL 8	.940	.884
SSS 1	.909	.827
SSS 2	.929	.863
SSS 3	.930	.865
SSS 4	.895	.801

Correlation Invariance

To determine whether the correlations between TFL and each of the other variables and supervisor social support with each of the other variables were invariant, dependent sample correlation comparisons were performed. Of the 11 other variables with which the focal variables correlated, only one pair differed significantly. The

correlation between TFL and role ambiguity ($r = -.43$) was significantly stronger than that of supervisor social support and role ambiguity ($r = -.39$; $z = -1.930$, $p < .05$). H₄ was mostly supported.

Table 4

Factor Loadings and Communalities for Varimax Rotated Two Factor Solution for TFL and Supervisor Social Support Items

	Factor Loadings		Communality
	1	2	
TFL 4	.817	.452	.871
TFL 5	.784	.503	.869
TFL 6	.783	.504	.866
TFL 8	.773	.546	.895
TFL 7	.759	.538	.865
TFL 2	.759	.570	.901
TFL 1	.743	.588	.899
TFL 3	.743	.600	.912
SSS 4	.459	.830	.899
SSS 3	.549	.781	.912
SSS 2	.564	.763	.900
SSS 1	.555	.744	.861

Correlation Invariance for TFL Components with Supervisor Social Support

To determine whether supervisor social support was a factor of TFL via the individualized consideration component of TFL, correlation comparisons were performed. These comparisons were examined to determine whether each of the four components of TFL (idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation) differed significantly in their correlations with supervisor social support. The analysis revealed that the correlation between idealized

influence and supervisor social support ($r = .93$) and the correlation between between inspirational motivation and supervisor social support ($r = .92$) did not differ significantly ($z = 1.088, ns$). The analysis also revealed that the correlation between individualized consideration and supervisor social support ($r = .89$) and the correlation between intellectual stimulation and supervisor social support ($r = .90$) did not differ significantly ($z = -.342, ns$). However, the correlations between both idealized influence and supervisor social support, and inspirational motivation and supervisor social support, differed significantly from the correlation between individualized consideration and supervisor social support ($z = 3.844, p < .05; z = -3.130, p < .05$). These correlations also differed significantly from the correlation between intellectual stimulation and supervisor social support ($z = -3.422, p < .05; z = 2.530, p < .05$). This indicated that the correlations between idealized influence and supervisor social support and inspirational motivation and supervisor social support were significantly stronger than the correlations between individualized consideration and supervisor social support and intellectual stimulation and supervisor social support. H_{1b} was not supported, as individualized consideration did not appear to have a stronger correlation with supervisor social support than any of the other components did. See Table 6 for means and standard deviations of each TFL component. See Table 7 for z-scores of the correlation invariances.

Table 5

Means, Standard Deviations, Cronbach's Alpha Reliability (bold on diagonal), and Correlations Between Main Study Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. TFL	4.95	1.87	.98												
2. SSS	4.77	1.92	.94	.96											
3. TFL/SSS	4.89	1.86	.98	.99	.97										
4. RO	3.21	1.39	-.33	-.33	-.33	.88									
5. RA	2.41	.98	-.43	-.39	-.41	.42	.81								
6. RC	3.33	1.30	-.32	-.31	-.32	.69	.50	.82							
7. WB _{T2}	5.15	1.04	.38	.39	.39	-.37	-.53	-.41	.86						
8. WB _{T3}	5.16	1.01	.38	.39	.39	-.39	-.54	-.43	.99	.85					
9. Anx _{T3}	3.16	1.75	-.27	-.30	-.28	.58	.45	.51	-.68	-.68	.94				
10. AC _{T2}	2.97	1.88	.48	.47	.48	-.39	-.52	-.38	.54	.56	-.52	.96			
11. AC _{T3}	3.04	1.94	.45	.45	.46	-.33	-.46	-.34	.62	.62	-.60	.85	.95		
12. TI _{T2}	5.60	.95	-.44	-.45	-.45	.50	.46	.44	-.57	-.61	.59	-.79	-.69	.95	
13. TI _{T3}	4.38	1.66	-.37	-.39	-.39	.41	.38	.43	-.62	-.63	.67	-.68	-.79	.81	.95

Note. All correlations were significant at $p < .01$. TFL = Transformational Leadership; SSS = Supervisor Social Support; RO = Role

Overload; RA = Role Ambiguity, RC = Role Conflict; WB = Well-Being; Anx = Anxiety; AC= Affective Commitment; TI =

Turnover Intention; T2 = Time 2; T3 = Time 3. Cronbach's Alphas are bolded on the diagonal.

Table 6

Means and Standard Deviations of each TFL Component and their Correlations with Supervisor Social Support

TFL Component	M	SD	r
	<i>n</i> = 234		
Idealized Influence	4.94	1.95	.93*
Inspirational Motivation	4.73	1.97	.92*
Individualized Consideration	5.00	1.95	.89*
Intellectual Stimulation	5.12	1.86	.90*

Note. * $p < .01$ (two-tailed).

Table 7

Z-Scores Reflecting Comparison of Correlations between TFL Components and Supervisor Social Support

	1	2	3	4
1. Idealized Influence	--			
2. Inspirational Motivation	1.088	--		
3. Individualized Consideration	3.844*	-3.13*	--	
4. Intellectual Stimulation	-3.422*	2.53*	-.342	--

Note. ** $p < .05$ (two-tailed)

Study 1 Discussion

Study 1 set out to determine if TFL and supervisor social support measures are addressing the same concept. The PCA was instrumental in revealing the possible redundancy of TFL and supervisor social support. The PCA detected one factor between the two measures, with 85.85% of the variance being accounted for by this initial factor. The analysis did not detect TFL and supervisor social support as discrete factors, supporting the idea that they may be redundant. A PCA transforms a large set of variables into a smaller set by extracting ones that may be the same or similar. In the present study, the PCA identified TFL and supervisor social support as having the ability to load onto

the same construct, yet also having the ability to present as two distinct factors. This suggests that although they may not be completely redundant, the high level of similarity may be addressing an overlapping construct.

The high inter-item correlations revealed in the correlational analyses tither on the line of possible redundancy (Piedmont, 2014). Moreover, the focal constructs correlated with the other study variables, including role stressors, psychological strains, and organizational outcomes, invariantly, with exception of the correlations between TFL and role ambiguity. The correlation was significantly stronger between TFL and role ambiguity than between supervisor social support and role ambiguity. This significant difference, though small, may be due to the “shared vision” aspect involved with TFL. TFL leverages motivation in employees to work towards a shared vision, thus a TFL style may reduce role ambiguity and give employees a clearer vision of what is expected of them. However, supervisor social support may be an aspect that supports employees in their work towards a shared vision yet does not necessarily involve delineating the aspects of a role.

That the two focal constructs displayed positive relationships with well-being and AOC is consistent with prior research (Jacobs et al., 2013; Mahdi & Top, 2021). Although the level of significance differed, both TFL and supervisor social support were significantly negatively correlated with each of the role stressors, indicating support for the constructs’ redundancy. The similarities of TFL and supervisor social support in their correlations with all the other variables, except role ambiguity, supports redundancy. The relationships between affective commitment, anxiety, and turnover intention with TFL and supervisor social support are reflective of the connection between these variables.

Beehr and Glazer (2005) found that anxiety and AOC were significant predictors of turnover intention. The negative relationships of TFL and supervisor social support with turnover intention and anxiety reflect prior research (Beehr et al., 2003; Gyensare et al., 2016; Iqbal et al., 2020; Kloutsiniotis et al., 2022).

Convergent validity, a step in the process of construct validation, states that tests having the same or similar constructs should have strong correlations (Chin & Yao, 2014). The strong correlation between TFL and supervisor social support suggests that they might be tapping into the same experience of their supervisor, just created by different items. However, analyses of the correlations between the four facets of TFL and supervisor social support indicated the individualized consideration and supervisor social support did not have stronger correlations than the other facets. Thus, the idea that individualized consideration is the key component driving the possible redundancy of TFL and supervisor social support is not supported.

STUDY 2

In order to test if the study results generalized to different professional and national contexts, in Study 2 we examined the same variable relationships in samples of nurses from the USA, Spain, and Germany.

Nurses

Nurses represent a high stakes profession (Gelsema et al., 2006). Research has shown that nurses thrive on having transformational leaders (Devi et al., 2021; Wang et al., 2021) and supportive supervisors (Modaresnezhad et al., 2021). There is an abundance of literature on the topic of stress, social support, and leadership amongst nurses across cultures, making them a particularly relevant sample to draw upon (Al

Nuaimi et al., 2021; El Rahman Gaber et al., 2021; Gelsema et al., 2006; Kagan, 2021; Türe & Akkoç, 2020). Study 2 is based on archival data the thesis chair had gathered. The national cultures of the chosen countries are sufficiently different, such that if redundancy is not found, some explanations may be, in part, presented around contextual factors, including cultural values. Should redundancy be found, having data from multiple societal cultures and professional cultures would tentatively support the transportability of theory and findings (Lievens, 2015).

In order to determine transportability, it is important to have at least three cultural contexts so that one serves as a referent point (Friedlmeier et al., 2005). Research from each of the three countries supports the notion that TFL and supervisor social support have positive associations with positive work-related factors across each country (Jacobs et al., 2013; Orgambidez & Almeida, 2019; Perilla-Toro & Gómez-Ortiz, 2017). Perceptions of both TFL and supervisor social support appear to be influenced by culture (Beehr & Glazer, 2001; Glazer & Amren, 2018; Poturak et al., 2020). Comparing US nurses to the US general working adult sample could provide incremental support for the generalizability of the findings across professions. In the subsequent section, cultural characteristics regarding USA, Germany, and Spain are presented. Additionally, as available, specific information on nurses and general adult samples will be discussed too.

Culture

The USA, Germany, and Spain are considered western, educated, industrialized, rich, and democratic (WEIRD; Broesch et al., 2020), and the utilization of such countries provides a relatively similar cultural context within which the constructs are studied. Although similar in some domains, Germany and Spain are, of course, both European

countries, governed under European Regulations for management of healthcare (Avanzas et al., 2017; U.S. National Library of Medicine, 2018), but they also have their own national regulations (Avanzas et al., 2017; Bernal-Delgado et al., 2018; U.S. National Library of Medicine, 2018). These regulations differ from those in the United States. Therefore, variations in organizational norms and culture are to be expected and influence TFL and supervisor social support. Indeed, the national culture of employees influences interaction patterns at the individual level (Morris et al., 2008).

To date, there is conflicting research on the generalizability of TFL across cultures. On the one hand, Crede et al. (2019) found that TFL had a much more significant impact on work-related outcomes in developing countries than it did in developed nations (despite having been originally researched in developed nations). On the other hand, Poturak et al. (2020) found that transformational leaders tend to be more effective in developed nations. Another study found that followers were universally similar in satisfaction with and perceptions of TFL, regardless of culture (Caza et al., 2021).

Almas et al.'s (2020) study, conducted in Spain, found that TFL had a negative relationship with turnover intention, partially mediated by job satisfaction, organizational commitment, and role identity. The relationship between TFL and turnover intention was also supported in a US-only based study (Sun & Wang, 2017). Furthermore, comparable to results found in Allen et al.'s (2017) US-only based study, Felfe et al.'s (2004) Germany-only based study supports the idea that TFL is a positive predictor of affective commitment. Supervisor social support has also been found in the USA to reduce burnout and turnover intention (Fukui et al., 2019), as well as increase employee well-being

(Terry et al., 1993). A Spain-based study found that the effects of supervisor support on employee well-being may be moderated by gender. García-Cabrera et al. (2018) found that supervisor support was more important for men's well-being ($\beta = .272, p < .05$) than for women's well-being ($\beta = .167, p < .05$). It is evident from these studies that TFL and supervisor social support are established constructs in the United States, Germany, and Spain. Examining TFL and supervisor social support within the context of their value dimensions can provide a reference for understanding them within a shared meaning system (Fischer, 2009). Understanding that these countries reinforce individualism can help contextualize the findings of the present study.

Furthermore, Glazer (2006) found several cross-cultural differences in people's perceptions of social support in the workplace (including Eastern and Western Europeans, Anglos, Latinos, and Asians). Given the variability in social support across cultures, location in which data are collected might impact the implications of social support on outcomes. Thus, utilizing data from multiple countries could help gain broader insight into the role of social support in relation to outcomes.

In addition to geographic location, countries can be characterized by cultural values (Hofstede, 2001; Schwartz, 1999). Both Hofstede (2001) and Schwartz (1999) identify cultural values that address a group's need to belong, attitudes towards social status, experiences of equality, and relationship to others and the world. More specifically, individualism versus collectivism (Hofstede, 2001), as well as autonomy versus conservatism (Schwartz, 1999), reflect social framework and expectations towards the self and family. Power distance (Hofstede, 2001) and hierarchy (Schwartz, 1999) reflect structural positioning and power rankings in society. Masculinity versus

femininity (Hofstede, 2001), and mastery versus harmony and egalitarianism (Schwartz, 1999) reflect social norms towards fitting in and getting ahead. Finally, uncertainty avoidance reflects how a group reacts to and tolerates ambiguity. Specific value dimensions (that may be relevant to TFL and supervisor social support) of the three countries are further addressed below.

Individualism and Autonomy

Individualistic cultures reinforce individuals to see themselves as distinct from the group, whereas collectivistic countries reinforce individuals seeing themselves as part of a group (Hofstede, 2001). People in individualistic cultures might look out for themselves and not pay much concern over others' needs, whereas collectivistic cultures will often take care of each other in exchange for loyalty. USA, Germany, and Spain all fall within Hofstede's (2001) category of high individualism. The United States ranked by far the highest with a score of 91, followed by Germany with a score of 67, then Spain with 51, each having been ranked on a scale of 0 (lowest) to 100 (highest). Spain is also lower on individualism than other western European countries. Subordinates in individualistic countries might hold individualized consideration in high regard, whereas subordinates in countries lower on individualism might not necessarily view individualized consideration as an important leadership practice or perhaps it would simply have little implications on well-being. For example, Poturak et al. (2020) found that TFL was more effective in countries that were *not* group oriented.

In contrast to Hofstede (2001), Schwartz's (1999) findings revealed that each of these countries leaned more towards autonomy than conservatism (later referred to as embeddedness), though the USA was much less autonomous than Germany and Spain. In

fact, Spain is higher in intellectual and affective autonomy than Germany and USA, though Germany and Spain are nearly identical in level of endorsed autonomy values. Countries that display higher affective autonomy tend to promote the pursuit of leisure rather than work centrality, however intellectual autonomy promotes the individual pursuit of ideas and intellectual paths (Schwartz, 1999). Reinforcing autonomy indicates that the countries favor creating individual experiences and cultivating individual ideas and preferences (Schwartz, 1999).

Power Distance

Power distance, documented by both Hofstede (2001) and the GLOBE (2004) study, refers to the extent to which a culture accepts different power roles and endorses the discrepancies in power levels. GLOBE scholars found that, on a scale of 1 to 7, Spain, Germany, and the USA scored relatively low on power distance cultural value (Spain – 2.26; Germany – 2.69; United States – 2.85), thereby indicating that these countries endorse closer connections with formal authority figures or with leaders. Similar results were reached in Hofstede’s study too. On a scale between 1 and 100, the countries were fairly low on power distance (Spain – 57, Germany – 35, United States – 40). Employee affective commitment has been found to be higher in cultures with lower power distance (Loi et al., 2012). Due to similarity in these aspects of culture, utilizing data from each of these cultures may provide a more in-depth understanding of how the constructs are operationalized and interact with the variables examined in the present study.

Uncertainty Avoidance

Hofstede’s (2001) cultural dimension of uncertainty avoidance, or uncertainty avoidance index (UAI), refers to the extent to which a culture mitigates ambiguity and

creates rules, structures, and regulations. High uncertainty avoidant cultures have more rules, structures, and regulations, whereas countries tolerant of ambiguity have fewer institutional rules, structures, and regulations. Leaders in high (vs. low) uncertainty avoidant cultures tend to be viewed more as experts rather than facilitators. Cultures high on this dimension are likely to have lower labor turnover and higher resistance to change. Lower uncertainty avoidant cultures view leaders as facilitators, and employees are more susceptible to high labor turnover (Robbins & Stylianou, 2002).

Among the three countries in the present study, Spain scored significantly higher on the uncertainty avoidance dimension (out of 100), followed by Germany, then the USA (Spain – 86, Germany – 65, United States – 46). In fact, when asked whether they wanted to work in long-term civil service roles, 75% of young Spaniards said they would whereas only 17% of young US Americans indicated interest in a civil service job that ensures long-term employment (Hofstede Center, n.d., p. 1). Thus, Spain, Germany, and the United States are all Western countries, they all have different contextual factors influencing them. If the constructs behave similarly within the different cultural contexts, there is more evidence to support the redundancy of TFL and supervisor social support.

Summary

In order to determine whether the findings of Study 1 are generalizable, Study 2 examines TFL and supervisor social support and their relationships with the same variables across different cultures. This study uses samples of nurses in USA, Germany, and Spain.

Hypotheses

If TFL and supervisor social support are found to be redundant, then their

correlations with other variables should be similar too. However, if the focal variables' correlations with other variables greatly differ, that would provide evidence indicating that the variables are discrete. Additionally, if individualized consideration is the primary component of TFL that is redundant with supervisor social support, lack of invariance (with individualized consideration having a significantly stronger relationship with supervisor social support than the other components' relationships with supervisor social support) would substantiate their overlap. Study 2 extends Study 1 by testing if the findings are generalizable across different national contexts.

H5_a: TFL and supervisor social support will strongly and positively correlate in (a) the USA, (b) Germany, and (c) Spain.

H5_b: The correlations between each of the components of TFL and supervisor social support will not be invariant and individualized consideration will have the strongest correlation with supervisor social support pan-culturally and in (a) the USA, (b) Germany, and (c) Spain.

H₆: TFL will positively correlate with (i) psychological well-being and (ii) AOC, but negatively correlate with (iii) role overload, (iv) role conflict, (v) role ambiguity, (vi) anxiety, and (vii) turnover intention in (a) the USA, (b) Spain, and (c) Germany.

H₇: Supervisor social support will positively correlate with (i) psychological well-being and (ii) AOC, but negatively correlate with (iii) role overload, (iv) role conflict, (v) role ambiguity, (vi) anxiety, and (vii) turnover intention in (a) the USA, (b) Germany, and (c) Spain.

H₈: The correlations between TFL and supervisor social support with each of the role stressors, anxiety, work-related well-being, AOC, and turnover intention will be

invariant pan-culturally and across each country.

Method

Participants

The sample for Study 2 ($N = 640$) consisted of nurses from the United States ($n = 390$), Germany ($n = 118$), and Spain ($n = 132$). Pan-culturally, the age range of participants was between 17 and 71 ($M = 44.76$, $SD = 11.62$). The mean age was 44.76. Also pan-culturally, 5.4% were male ($n = 35$), 75.2% were female ($n = 481$), and 19.4% declined to answer ($n = 124$). Of these participants, 49.5% were married or remarried ($n = 317$), 12% of these participants were single ($n = 77$), 8.4% were divorced or separated ($n = 54$), 7.3% were living with partner(s) ($n = 47$), 1.1% were widows or widowers ($n = 7$), .3% indicated “other” ($n = 2$), and 21.3% declined to answer ($n = 136$).

In the United States, nurses’ ages ranged between 24 and 71 years ($M = 47.33$ years, $SD = 10.72$ years). Most US nurses were female (72.1% or $n = 281$), 4.4% ($n = 17$) were male, and 23.6% ($n = 92$) declined to answer. Most of the respondents (38.7%) were White ($n = 151$), 14.1% were Asian ($n = 55$), 4.9% were Pacific Islander ($n = 19$), 3.1% were Hispanic ($n = 12$), 2.1% were Black ($n = 8$), 4.1% indicated “other” ($n = 16$), and 33.1% declined to answer ($n = 129$). In terms of marital status, 50.8% were married or remarried ($n = 198$), 10.8% were divorced or separated ($n = 42$), 10.3% ($n = 40$) were single, 1.8% were living with partner(s) ($n = 7$), 1.5% were widows or widowers ($n = 6$), .3% indicated “other” ($n = 1$), and 24.6% declined to answer ($n = 96$). Most respondents (36.4%) had a bachelor’s degree ($n = 142$), 10% had a master’s degree ($n = 39$), 1% of these participants had a high school diploma ($n = 4$), .5% had a doctorate ($n = 2$), 14.9% indicated “other” ($n = 58$), and 37.2% declined to answer ($n = 145$).

In Germany, nurses' ages ranged between 17 to 66 years ($M = 41.36$ years, $SD = 12.70$ years). Most nurses (83.9%) were female ($n = 99$), 11% were male ($n = 13$), and 5.1% declined to answer ($n = 6$). In terms of racial identification, 83.1% were White ($n = 98$), .8% indicated "other" ($n = 1$), and 16.1% declined to answer ($n = 19$). Most nurses (54.2%) in Germany were married or remarried ($n = 64$), 16.9% were single ($n = 20$), 16.1% were living with partner(s) ($n = 19$), 6.8% were divorced or separated ($n = 8$), .8% indicated "other" ($n = 1$), and 5.1% declined to answer ($n = 6$). In terms of education, 64.4% of German nurses had vocational training ($n = 76$), 6.8% ($n = 8$) had a diploma degree, 5.1% had a high school degree ($n = 6$), 3.4% had a bachelor's degree ($n = 4$), 3.4% had a doctorate degree ($n = 4$), 1.7% indicated "other" degree ($n = 2$), and 14.4% ($n = 17$) declined to answer.

In Spain, nurses' ages ranged between 21 to 60 years ($M = 41.48$ years, $SD = 11.06$ years). Most (76.5%) of the Spanish participants were female ($n = 101$), 3.8% were male ($n = 5$), and 19.7% declined to answer ($n = 26$). Additionally, 59.8% were White ($n = 79$), 3.8% indicated "other" ($n = 5$), and 36.4% declined to answer ($n = 48$). In terms of marital status, 41.7% were married or remarried ($n = 55$), 15.9% were living with partner(s) ($n = 21$), 12.9% were single ($n = 17$), 3% were divorced or separated ($n = 4$), .8% were widows or widowers ($n = 1$), and 25.8% declined to answer ($n = 34$). Of the Spanish group, 41.7% ($n = 55$) had a diplomat degree¹, 11.4% had a postgrad or master's degree ($n = 15$), 9.8% had vocational training, 3% had a bachelor's degree ($n = 4$), 1.5%

¹ A diplomat degree is the equivalent of a secondary school diploma.

had a licentiate degree² ($n = 2$), 1.5% had a graduate degree ($n = 2$), .8% indicated “other” ($n = 1$), and 30.3% declined to answer ($n = 40$).

Measures

The same study variables from Study 1 were examined in Study 2, with some minor exceptions. Nurse managers expressed concern over the length of the survey and implored that the researchers cut down its length. Therefore, the original researchers of the nurse data collection effort selected three to four items for each role stressor and AOC based on those that had the strongest factor loadings in a four country (USA, UK, Italy, and Hungary) cross-cultural study (Beehr & Glazer, 2005), as well as data from Israel (Glazer & Kruse, 2008). Instead of five items per each of the three role stressors and eight items for AOC, there were four items for role overload, and three items each for role conflict, role ambiguity, and AOC. The same rating scales were used as in Study 1.

Procedures

Archival data were obtained from this thesis' chair. Data on the focal variables for this study of nurses were collected via paper-pencil survey from two hospitals in the USA (about 750 nurses from Hospital 1 and about 1050 from Hospital System 2) and one hospital in each of Germany and Spain. Two waves of data collection were administered for the sample of nurses in the USA, but only one wave of data collection occurred for the sample of nurses in Germany and Spain. Only the first wave of data collected from the USA, along with the single waves from Spain and Germany, were used for the present analyses. Surveys were distributed in different ways depending on hospital

² A licentiate degree is a higher education degree, similar to a master's degree and preceding a doctoral degree.

preference, for example, some nurses received their surveys directly from their supervisors and others received it in their mailbox. Completed surveys were returned via internal mailing to the researcher or by picking up completed surveys, sealed in their own envelopes, from each hospital unit. Nurses in the USA received free movie theater tickets, whether they completed the survey or not and then entered into a raffle for prizes if they completed both surveys. No compensation or prize was offered to nurses in Spain and Germany.

Statistical Analyses

As in Study 1, Study 2 also employed inter-item correlations, assessments of Cronbach's alpha coefficient for internal consistency, PCA, variable correlations, as well as tests for significant invariance within samples and tests of invariance across country samples through Fischer's z -transformations (Cohen & Cohen, 1983).

Results

First, an inter-item correlational analysis was performed between the TFL and supervisor social support measures to determine the extent to which items overlap (see Table 8). Based on this analysis, it was clear that the TFL items correlated strongly (r s were above .60 pan-culturally and across each country) and that supervisor social support items correlated strongly (r s were above .60 pan-culturally and across each country). Furthermore, analyses revealed that the items for each of the variables correlated across constructs too (r s are above .50 pan-culturally and in USA and Germany, and r s are above .23 but still significant in Spain).

Principal Component Analyses

To test if the TFL and supervisor social support items resulted in two discrete

factors within each country, a PCA (using orthogonal rotation) was performed for each country's data. As discussed earlier, factors should be retained when the minimum of the explained sample variance is 5%, and when the eigenvalue is greater than 1.00 (Kaiser, 1960; Ruscio & Roche, 2012). The eigenvalues are presented in Table 9. The varimax rotated factor loadings and communalities for the forced extraction are presented in Table 10. Per Table 9, only one factor was extracted in the US and German samples, suggesting redundancy. In the Spanish sample, two factors appeared. The first factor's eigenvalue was 7.45 and accounted for 62.07% of the variance, and the second factor's eigenvalue was 1.39 and accounted for 11.56% of the variance. The drop in percentage, however,

Table 8

Inter-Item Correlations for TFL and Supervisor Social Support

Items	1	2	3	4	5	6	7	8	9	10	11
Pan-Cultural (<i>n</i> = 640)											
1. TFL 1	--										
2. TFL 2	.78	--									
3. TFL 3	.77	.83	--								
4. TFL 4	.65	.72	.74	--							
5. TFL 5	.70	.76	.78	.80	--						
6. TFL 6	.72	.79	.78	.75	.82	--					
7. TFL 7	.73	.79	.79	.76	.79	.87	--				
8. TFL 8	.72	.82	.80	.74	.77	.82	.87	--			
9. SSS 1	.60	.65	.66	.56	.62	.61	.61	.64	--		
10.SSS 2	.53	.62	.67	.56	.62	.63	.60	.62	.70	--	
11.SSS 3	.62	.69	.71	.63	.66	.66	.67	.69	.76	.74	--
12.SSS 4	.53	.58	.65	.56	.62	.58	.59	.58	.67	.72	.71

Items	1	2	3	4	5	6	7	8	9	10	11
United States (<i>n</i> = 390)											
1. TFL 1	--										
2. TFL 2	.84	--									
3. TFL 3	.86	.89	--								
4. TFL 4	.74	.79	.78	--							
5. TFL 5	.76	.82	.82	.83	--						
6. TFL 6	.79	.85	.83	.81	.84	--					
7. TFL 7	.81	.85	.85	.82	.84	.92	--				
8. TFL 8	.83	.90	.86	.80	.83	.86	.89	--			
9. SSS 1	.67	.74	.75	.65	.69	.68	.68	.73	--		
10.SSS 2	.68	.73	.78	.69	.71	.72	.70	.73	.80	--	
11.SSS 3	.76	.78	.79	.74	.74	.73	.75	.76	.82	.81	--
12.SSS 4	.57	.60	.66	.58	.61	.60	.59	.59	.69	.74	.71
Germany (<i>n</i> = 118)											
1. TFL 1	--										
2. TFL 2	.64	--									
3. TFL 3	.60	.79	--								
4. TFL 4	.59	.64	.72	--							
5. TFL 5	.61	.66	.75	.75	--						
6. TFL 6	.59	.71	.75	.72	.84	--					
7. TFL 7	.60	.68	.74	.77	.80	.88	--				
8. TFL 8	.54	.62	.71	.70	.70	.73	.81	--			
9. SSS 1	.68	.56	.57	.56	.57	.58	.60	.60	--		
10.SSS 2	.39	.48	.58	.50	.52	.57	.59	.55	.52	--	
11.SSS 3	.51	.62	.65	.55	.57	.63	.62	.66	.69	.74	--
12.SSS 4	.53	.57	.64	.56	.72	.64	.67	.61	.63	.72	.75

Items	1	2	3	4	5	6	7	8	9	10	11
Spain ($n = 132$)											
1. TFL 1	--										
2. TFL 2	.72	--									
3. TFL 3	.72	.73	--								
4. TFL 4	.49	.60	.63	--							
5. TFL 5	.59	.66	.71	.76	--						
6. TFL 6	.64	.70	.67	.62	.77	--					
7. TFL 7	.63	.74	.70	.59	.64	.74	--				
8. TFL 8	.61	.80	.72	.60	.66	.78	.88	--			
9. SSS 1	.37	.53	.54	.43	.50	.47	.46	.48	--		
10.SSS 2	.24	.45	.49	.38	.47	.46	.35	.41	.61	--	
11.SSS 3	.39	.58	.58	.49	.58	.54	.52	.54	.71	.61	--
12.SSS 4	.44	.53	.65	.49	.55	.47	.53	.53	.66	.68	.68

Note. All correlations were significant at $p < .01$. TFL = Transformational Leadership; SSS = Supervisor Social Support; RO = Role Overload; RA = Role Ambiguity, RC = Role Conflict; WB = Well-Being; Anx = Anxiety; AC= Affective Commitment; TI = Turnover Intention. Dummy variables were used to control for country.

was sharp. Still, a forced extraction employing Varimax rotation, which maximizes the sum of the variance of the squared factor loadings (Jackson, 2005), was employed with the Spanish sample and was explored. This revealed that the items were able to load onto two factors in the Spanish sample. A forced extraction was also done using an Oblimin rotation yielding similar results (see Table C.1 in Appendix C).

Variable Correlations

Means, standard deviations, Cronbach's alpha internal consistency, and correlations of the main study variables are presented in Table 11. The correlations

between the variables for Study 2 were tested pan-culturally (controlling for country using dummy variables) and within each country using a Pearson's r correlation analysis. H_{5a} specified that TFL and supervisor social support would be strongly and positively correlated in the USA, Germany, and Spain. The hypothesis was supported. Pan-culturally, TFL and supervisor social support had a strong positive correlation ($r = .77, n = 640, p < .01$). Within (a) the USA, TFL and supervisor social support had a strong positive correlation ($r = .82, n = 390, p < .01$). Within (b) Germany, TFL and supervisor social support also had a strong positive correlation ($r = .77, n = 118, p < .01$). Finally, within (c) Spain TFL and supervisor social support had a significant positive correlation ($r = .65, n = 132, p < .01$)

Overall, H_6 , that TFL was positively correlated with psychological well-being and affective organizational commitment, but negatively correlated with role overload, role conflict, role ambiguity, anxiety, and turnover intention in the USA, Germany, and Spain was partially supported. Pan-culturally, and after controlling for each country using dummy variables (the referent is the USA), TFL significantly correlated with each of the study variables in the predicted directions.

In each country, TFL correlated positively with well-being and AOC, except for in Spain, where the correlations with well-being and AOC were nonsignificant, but were in the predicted direction. In the USA TFL negatively correlated with role overload, role conflict, role ambiguity, anxiety, and turnover intention ($r_s = -.28$ to $-.37, p < .01$), supporting H_{6a} . In Germany, the results were also supportive of H_{6b} , except for a nonsignificant negative correlation between TFL and role overload. In Spain, however, the relationship of TFL did not significantly correlate with any of the role stressors. The

Eigenvalues, Percentages of Variance and Cumulative Percentages for 8 TFL and 4 Supervisor Social Support Items Across Each Country (Varimax Rotation)

Factor	USA				Germany				Spain			
	% of		% of		% of		% of					
	Eigenvalue	variance	Cumulative %	Factor	Eigenvalue	variance	Cumulative %	Factor	Eigenvalue	variance	Cumulative %	
1	9.23	77.49%	77.49%	1	8.06	67.19%	67.19%	1	7.45	62.07%	62.07%	
2	.81	6.72%	84.21%	2	.93	7.74%	74.93%	2	1.39	11.56%	73.63%	
3	.39	3.26%	87.47%	3	.70	5.82%	80.75%	3	.63	5.22%	78.85%	
4	.29	2.41%	89.88%	4	.46	3.86%	84.60%	4	.51	4.28%	83.13%	
5	.23	1.95%	91.83%	5	.40	3.37%	87.97%	5	.43	3.56%	86.68%	
6	.20	1.68%	93.51%	6	.33	2.77%	90.74%	6	.39	3.26%	89.94%	
7	.19	1.56%	95.07%	7	.27	2.27%	93.01%	7	.29	2.43%	92.38%	
8	.16	1.36%	96.43%	8	.25	2.10%	95.11%	8	.28	2.33%	94.70%	
9	.13	1.11%	97.54%	9	.20	1.68%	96.79%	9	.22	1.81%	96.51%	
10	.12	1.01%	98.55%	10	.18	1.48%	98.27%	10	.17	1.45%	97.96%	
11	.10	.86%	99.42%	11	.13	1.11%	99.38%	11	.15	1.24%	99.20%	
12	.07	.58%	100.00%	12	.08	.62%	100.0%	12	.10	.80%	100.0%	

Table 10

Factor Loadings and Communalities for TFL and Supervisor Social Support Items for US and German Samples

Variable	USA (<i>n</i> = 390)		Germany (<i>n</i> = 118)		Spain (<i>n</i> = 132)				
	Factor Loadings		Factor Loadings		Factor Loadings				
	1	2	1	2	1	2			
TFL 1	.878	.433	.770	.696	--	.541	.733	-.370	.674
TFL 2	.815	.450	.846	.764	.341	.666	.861	--	.774
TFL 3	.762	.530	.860	.769	.422	.754	.864	--	.757
TFL 4	.805	.373	.749	.822	--	.654	.745	--	.582
TFL 5	.804	.422	.801	.816	.361	.757	.841	--	.721
TFL 6	.847	.390	.826	.814	.387	.780	.840	--	.756
TFL 7	.878	.347	.825	.809	.411	.799	.834	--	.773
TFL 8	.851	.413	.859	.728	.421	.697	.860	--	.802
SSS 1	.458	.782	.704	.610	.610	.577	.699	.503	.741
SSS 2	.459	.799	.724	.861	.861	.523	.631	.595	.752
SSS 3	.556	.730	.784	.839	.839	.652	.756	.415	.744
SSS 4	--	.856	.550	.783	.783	.663	.745	.440	.759

Variables	M	SD	1	2	3	4	5	6	7	8	9
4.RA	2.49	1.10	-.37**	-.35**	.33**	.86					
5.RC	4.17	1.38	-.31**	-.33**	.51**	.39**	.76				
6.WB	5.39	.86	.31**	.34**	-.41**	-.45**	-.35**	.83			
7.Anx	3.64	1.70	-.23**	-.28**	.55**	.33**	.45**	-.66**	.92		
8.AOC ^b	4.90	1.32	.53**	.46**	-.30**	-.36**	-.23**	.42**	-.33**	.75	
9.TI	2.80	1.46	-.33**	-.34**	.41**	.28**	.34**	.43**	.44**	.46**	.64
Germany (<i>n</i> = 118)											
1.TFL	5.12	1.44	.95								
2.SSS	5.13	1.52	.79**	.89							
3.RO ^e	4.90	1.26	-.23*	-.13	.51						
4.RA	5.91	1.12	.18	.13	.00	.71					
5.RC	4.36	1.36	-.04	-.02	.37**	.14**	.56				
6.WB	5.00	1.15	.45**	.40**	-.23*	.35**	-.16**	.83			
7.Anx	4.18	1.91	-.25**	-.21*	.36**	-.07	.35**	-.63**	.89		
8.AOC	4.88	1.52	.39**	.43**	-.01	-.01	-.04	.31**	-.17**	.67	
9.TI	2.39	1.84	-.46**	-.46**	.23*	-.14**	.27**	-.46**	.33**	-.38**	.92

Variables	M	SD	Spain (n = 132)											
			1	2	3	4	5	6	7	8	9			
1.TFL	4.24	1.38	.95											
2.SSS	4.67	1.54	.67**	.89										
3.RO	5.19	.98	.11	-.03	.44									
4.RA	4.29	1.78	.08	.04	.07	.89								
5.RC ^d	4.41	1.47	-.15	-.27**	.27**	.11	.69							
6.WB	4.83	.92	.09	.18**	.13	-.31**	-.08	.47						
7.Anx	4.25	1.57	-.20**	-.34**	-.33**	.14	.48**	-.03**	.87					
8.AOC	4.19	1.24	.11	.12	.08	-.22**	-.00	.37**	-.13	.47				
9.TI	2.24	1.39	-.05**	-.04	.08	-.01	.30**	-.02**	.46**	-.05	.83			

Note. ** $p < .01$ (two-tailed). ^{abcd}Correlations between the variables and each of TFL and SSS significantly differed. TFL =

Transformational Leadership; SSS = Supervisor Social Support; RO = Role Overload; RA = Role Ambiguity, RC = Role

Conflict; WB = Well-Being; Anx = Anxiety; AOC = Affective Organizational Commitment; TI = Turnover Intention. Cronbach's

Alphas are bolded on the diagonal.

data from Spain exhibited negative correlations between TFL and anxiety ($r = -.20, n = 132, p < .01$) and turnover intention ($r = -.05, n = 132, p < .01$). Thus, H_{6c} was only partially supported as the results were not consistent across countries.

Overall, H₇ was partially supported. Pan-culturally, supervisor social support negatively correlated with role overload, role conflict, anxiety, and turnover intention (r s ranged from $-.27$ to $-.35, p < .01$). However, although negative, the correlations between supervisor social support with role ambiguity were nonsignificant. Supervisor social support had a significant positive correlation with well-being in the samples from (a) the USA ($r = .28, n = 390, p < .01$), (b) Germany ($r = .39, n = 118, p < .01$), and (c) Spain ($r = .18, n = 132, p < .01$). However, it only had a significant positive correlation with AOC in (a) the USA ($r = .46, n = 390, p < .01$; $r = .45, n = 390, p < .01$) and (b) Germany ($r = .43, n = 118, p < .01$).

Correlation Invariance

To address H₈, that the correlations between TFL and supervisor social support with each of the role stressors, anxiety, work-related well-being, AOC, and turnover intention would be invariant pan-culturally and across each country, and to determine the extent to which TFL and supervisor social support correlations with the outcome variables were convergent, pan-cultural and between-country correlation comparisons were performed. Z-scores to compare the correlations are presented in Table 12. Pan-culturally, the only significant difference in correlations was for the correlation between TFL and anxiety ($r = -.23$) and between supervisor social support and anxiety ($r = -.28; z = -1.840, p < .05$).

In the United States, the only significant difference in correlations was between

TFL and supervisor social support with AOC. The correlation between TFL and AOC ($r = .53$) was significantly stronger than the correlation between supervisor social support and AOC ($r = .46$; $z = 2.360$, $p < .05$). In Germany, the only significant difference in correlations was between TFL and supervisor social support with role overload. The correlation between TFL and role overload ($r = -.23$) was significantly stronger than the correlation between supervisor social support and role overload ($r = -.13$; $z = -1.690$, $p < .05$). In Spain, there were multiple significant differences in the correlations between TFL and supervisor social support and the other variables. For role overload, the correlation between TFL and role overload ($r = .11$) was significantly stronger than the correlation between supervisor social support and role overload ($r = -.03$; $z = 1.960$, $p < .05$).

Additionally, in Spain the negative correlation between role conflict and supervisor social support ($r = -.27$) was significantly stronger than the correlation between role conflict and TFL ($r = -.15$; $z = 1.720$, $p < .05$). Anxiety also displayed significant differences in its correlations with TFL and supervisor social support in Spain. The negative correlation between anxiety and supervisor social support ($r = -.34$) was significantly stronger than the correlation between anxiety and TFL ($r = -.20$; $z = 2.040$, $p < .05$). Overall, H₈ was only partially supported.

Correlation Invariance for TFL Components with Supervisor Social Support

Pan-culturally, correlations between supervisor social support and inspirational motivation ($r = .75$) were significantly different from the correlations between social support and each of individualized consideration ($r = .72$; $z = 1.770$, $p < .05$) and intellectual stimulation ($r = .72$; $z = -2.210$, $p < .05$). The remaining correlation comparisons were invariant.

Table 12

Z-Scores for Variance of Correlations Between TFL and Supervisor Social Support with Stress-Related Variables

Variable	Pan-Cultural	USA	Germany	Spain		
	Anx	AOC	RO	RC	RO	Anx
z-score	1.84*	2.36*	-1.69*	1.72*	1.96*	2.04*

Note. * $p < .05$. Anx = Anxiety; AOC= Affective Organizational Commitment; RO = Role Overload; RC = Role Conflict.

In the USA, the correlation between idealized influence and supervisor social support ($r = .81$) differed significantly from both the correlation between individualized consideration and supervisor social support ($r = .77$; $z = 2.130$, $p < .05$), and intellectual stimulation and supervisor social support ($r = .76$, $z = 3.160$, $p < .05$). The remaining correlation comparisons were invariant. In both Germany and Spain, none of the correlations between components of TFL and supervisor social support differed significantly. Means and standard deviations for each component of TFL in the cross-cultural sample, as well as their correlations with supervisor social support, are presented in Table 13. The z -scores for the correlation invariances for the four components of TFL are presented in Table 14. H_{5b} that the correlations between each of the components of TFL and supervisor social support would not be invariant, with individualized consideration having the strongest correlation with supervisor social support pan-culturally and in each country, was not supported.

Table 13*Means and Standard Deviations for the Components of TFL and their Correlations with Supervisor Social Support*

TFL Component	Pan-Cultural (<i>N</i> = 640)			USA (<i>n</i> = 390)			Germany (<i>n</i> = 118)			Spain (<i>n</i> = 132)		
	M	SD	<i>r</i>	M	SD	<i>r</i>	M	SD	<i>r</i>	M	SD	<i>r</i>
Idealized Influence	4.86	1.61	.74	4.88	1.69	.81	5.18	1.48	.74	4.56	1.49	.57
Inspirational Motivation	4.43	1.74	.75	4.50	1.80	.80	4.82	1.54	.73	3.94	1.64	.62
Individualized Consideration	4.79	1.66	.72	4.83	1.71	.77	5.29	1.58	.69	4.25	1.44	.59
Intellectual Stimulation	4.72	1.67	.72	4.81	1.72	.76	5.08	1.52	.73	4.20	1.49	.59

Note. ***p* < .05 (two-tailed).

Table 14

Z-Scores Reflecting Comparison of Correlations between TFL Components and Supervisor Social Support

Pan-Cultural				
	1	2	3	4
1. Idealized Influence	--			
2. Inspirational Motivation	-.31	--		
3. Individualized Consideration	1.43	1.77*	--	
4. Intellectual Stimulation	1.57	-2.21*	-.07	--
USA				
	1	2	3	4
1. Idealized Influence	--			
2. Inspirational Motivation	.89	--		
3. Individualized Consideration	2.13*	1.58	--	
4. Intellectual Stimulation	3.16*	-2.79*	-.92	--
Germany				
	1	2	3	4
1. Idealized Influence	--			
2. Inspirational Motivation	.12	--		
3. Individualized Consideration	1.22	1.12	--	
4. Intellectual Stimulation	.18	.09	1.19	--
Spain				
	1	2	3	4
1. Idealized Influence	--			
2. Inspirational Motivation	-1.20	--		
3. Individualized Consideration	-.44	.59	--	
4. Intellectual Stimulation	-.52	-.85	.02	--

Study 2 Discussion

The aim of Study 2 was to determine whether the redundancy between TFL and supervisor social support found in Study 1 is generalizable to nurses in the USA, Germany, and Spain. Overall, results of the PCA showed that TFL and supervisor social support may be redundant, particularly in the USA and Germany, as the items successfully loaded on to one factor. Even though a second factor could be extracted in Spain, the second factor's eigenvalue was just barely above the 1.00 threshold for retention. Still, redundancy in Spain is not entirely supported.

Furthermore, H_6 and H_7 , regarding the relationships between each of TFL and supervisor social support with the other stress-related variables were partially supported. That there was no consistency in which correlations differed significantly within and across cultures might suggest random errors rather than suggesting TFL and supervisor social support are discrete constructs. Random error is a particularly appealing explanation because all other correlations between each of TFL and supervisor social support with other variables were invariant. In Spain, however, there were several more noninvariant correlations than in the USA or Germany. Whether this is due to random error, or a lack of redundancy between TFL and supervisor support is unclear. As the PCA revealed two factors in Spain, it is possible that there is a lack of redundancy between the two constructs in Spain.

Unstudied cultural factors may, in part, have confounded the correlations in this study. For example, in Germany and in Spain, rather than attributing the level of role ambiguity solely to TFL or supervisor social support, it might also be linked to high uncertainty avoidance. Organizational role ambiguity has been found to be negatively

related to uncertainty avoidance (Glazer, 2021). Thus, cultures, such as Germany or Spain, which exhibit higher levels of uncertainty avoidance than countries such as the USA, may generally exhibit higher levels of role ambiguity in the workplace, independent of leadership style or level of supervisor support. Perhaps higher levels of TFL and supervisor social support are expected of supervisors when a job role is more ambiguous.

Poturak et al. (2020) found that inspirational motivation with TFL was negatively related to uncertainty avoidance, meaning that countries lower in uncertainty avoidance experienced more effectiveness from higher inspirational motivation. TFL could have more influence in Germany and the USA than in Spain due to their lower uncertainty avoidance.

Higher collectivism has been positively correlated with role conflict (Peterson et al., 1995). Although Spain is considered an individualist country, it is lower on individualism values than USA or Germany, and it is considered collectivist in comparison to many other European countries (Hofstede, 2001). It is possible that Spain's tendency towards lower individualism than the other countries in the study contributed to its higher level of role conflict, and potentially its differing correlations with TFL and supervisor social support. The exact mechanism behind this is unclear, but it would be worth further investigation.

Additionally, Glazer and Amren (2018) found that organizational support reduced the effects of job stressors on organizational outcomes in the USA/Canada region, but not in Germanic Europe (containing Germany) or Latin Europe (containing Spain). The authors posited that this could have been due to higher autonomy values in USA/Canada

than in Latin and Germanic Europe. This discrepancy may explain the nonsignificant relationships of TFL and supervisor social support with role ambiguity and role overload in Spain. Supervisor support has been found to contribute to perceived organizational support (Rhoades & Eisenberger, 2002). If organizational support did not have significant influence on job stressors (e.g., role ambiguity and role overload) in Germany and Spain, it's possible that supervisor support would also lack this influence. TFL has also been found to enhance perceived organizational support (Suifan et al., 2018). Thus, if TFL enhances perceived organization support, but perceived organizational support does not influence effects of job stressors in Germanic or Latin Europe (where Germany and Spain are located; Glazer & Amren, 2018), then this may help explain the differences in the relationships between the variables and TFL and social support in Germany and in Spain versus in the United States.

Despite a few discrepancies in variables' correlations with TFL and supervisor social support across the United States, Germany, and Spain, results suggest that TFL and supervisor social support may also be redundant across cultures. Due to the greater number of discrepancies in correlation invariances in Spain, it is possible that the two constructs are redundant in the USA and Germany.

The correlation invariance testing of each of the components of TFL with supervisor social support suggested that if TFL and supervisor social support are redundant, it is not individualized consideration influencing the correlation.

GENERAL DISCUSSION

This two-part study set out to examine the possible overlap of TFL and supervisor social support. The focal question was: Are these variables are discrete constructs or

redundant? Prior research suggested that both TFL and supervisor social support leverage an emotional element to motivate followers and that both reduce undesired work-related attitudes, behaviors, and organizational consequences (Hämmig, 2017; Sun & Wang, 2017). Both TFL and supervisor social support appeared to have significant correlations with important work-related variables. The literature review showed that TFL, as well as supervisor social support, have been correlated with positive work-related variables, and correlated with decreased employee strain, making them important constructs to understand (Boamah et al., 2017; Dung & Hai, 2020; Mohamed & Ali, 2016). As the two constructs have been previously found to have similar effects on work-related behaviors and attitudes, and as they both leverage an emotional connection as a motivator between the supervisor and employee, the present study aimed to look at the relationship between TFL and supervisor social support, as well as the connection between these constructs and multiple work-related variables. In order to avoid conflict with the principle of parsimony (Le et al., 2010), the present study aimed to investigate possible redundancy between the constructs. The present study also aimed to identify whether the individualized consideration component of TFL had a stronger correlation with supervisor social support than the other TFL components, as both individualized consideration and supervisor social support leverage an emotional connection to employees. Data from three countries were used to test the generalizability of the findings.

In Study 1, TFL and supervisor social support were highly correlated and PCAs indicated that TFL and supervisor social support can be identified as one factor. The magnitude of the finding is supportive of the idea that the focal constructs are addressing

the same concept. If supervisor social support is, in fact, a component of TFL, it is logical that the items would be identified as one factor. The PCA of the MTurk data, as well as the nurse data, revealed that TFL and supervisor social support could be extracted as one factor in the USA and in Germany. This evidence supports the contention that the two variables may be redundant. Data from Spain showed that it was possible to extract them as separate factors. However, Spain's high uncertainty avoidance value orientation may explain its slightly differing results regarding TFL and supervisor social support (Glazer & Amren, 2018; Poturak et al., 2020). Additionally, Latin European countries have been thought to have lower perceptions of supervisor social support than Western European or Anglo countries (Germany and USA; Glazer, 2005), so varied perceptions of supervisor social support may contribute to Spain's differing results. Additionally, although Spain displayed the constructs as two factors, the eigenvalue for the second factor, as well as the variance it accounted for, dropped sharply. This suggests that TFL and supervisor support may be redundant in Spain, or they may at least be addressing very similar constructs that overlap in some capacities.

Overall, in the cross-cultural nurse population, the findings were mostly consistent with the idea that TFL and supervisor social support are redundant. Most of the correlations were invariant between countries, indicating that TFL and supervisor social support are likely redundant. Moreover, the findings suggest that the conceptualizations of TFL and supervisor social support may be more similar than different in other countries too. Because a variety of professions were represented in the MTurk data, and the healthcare field was represented in the cross-cultural data, there is evidence to suggest that the findings of TFL and supervisor social support being redundant are generalizable

across professions.

There are also some possible cultural reasons for the small differences in correlations with work-related variables. For example, there may have been undetermined cultural norms or beliefs that potentially could have slightly obscured the results (Spector et al., 2015). However, in the US MTurk sample, only correlations between TFL and supervisor social support with role ambiguity were non-invariant, whereas in the US nurse sample, correlations between TFL and supervisor social support with AOC were the only non-invariant correlations. Given the lack of consistency, this finding suggests that the redundancy of TFL and supervisor support is a credible assertion. Additionally, a lack of a clear pattern in non-invariant correlations cross-culturally is further support for redundancy (Cheung & Rensvold, 1998). Some research suggests that supervisor support can actually exacerbate nurse stress and sleeping troubles (Chang & Cho, 2021), whereas other research suggests that supervisor social support can improve stress levels among nurses (Hall, 2007; Weigl et al., 2016). Differences in the specific roles of nurses in each country, as well as the systems in which they work (e.g., the American hospital system vs. the Spanish hospital system) might contribute to the way the variables interact with TFL and supervisor social support in each country. More research on the contextual influences may be warranted.

Both in the MTurk sample, and in the cross-cultural nurse sample, individualized consideration did not have a stronger correlation with supervisor social support than any of the other TFL components. This result suggests that individualized consideration is not the primary mechanism of possible redundancy. Although individualized consideration is the primary TFL component that leverages emotional connection, it does not appear to be

the lynchpin that makes the two focal variables redundant.

Overall, the redundancy of TFL and supervisor social support is supported in the USA and in Germany. In Spain, the support is less strong, as seen in the PCA and in the higher number of noninvariant correlations with work-related variables. However, the reasons for these results are not entirely clear. It is possible that generalizability of the redundancy is possible in Spain, or it is possible that they are discrete constructs that address a very similar concept.

Theoretical Implications

The theoretical implications for this study involve the conceptualization of TFL and supervisor social support. If these two constructs are indeed redundant, then studying the two as such would assist in avoiding violation of the principle of parsimony. The possible redundancy suggests that the two may be one singular construct, and one might not be providing any more or less relevant information when it comes to the role of supervisor support and leadership styles. That said, there is indication that sometimes social support from a supervisor helps and sometimes it does not (Kaufmann & Beehr, 1986). Could it be that when supervisor social support does not help it is because the leader is not transformational, but instead transactional or laissez-faire? This is an area that needs further exploration.

Initially, the present study posited that through individualized consideration, supervisor social support may be a mechanism of TFL, specifically with regard to the emotional bond involved in TFL for motivating employees. However, upon closer inspection, individualized consideration did not exhibit a stronger correlation with supervisor social support than any of the other components of TFL. For this reason,

further investigation may be needed into the specific mechanism of the redundancy between TFL and supervisor social support.

Both TFL and supervisor social support have significant correlations with work-related variables and appear to be correlated with low levels of strain in the workplace (Atkin-Plunk & Armstrong, 2013). Low levels of job strain have been correlated with high levels of productivity (Rani et al., 2021), suggesting that understanding the possible redundancy of the focal constructs could help facilitate further research aimed at improving organizational productivity.

An additional theoretical implication of this study involves the nursing population. As the present study found both TFL and supervisor social support to be correlated with low levels of stress and anxiety in the nursing population, the redundancy of supervisor social support and TFL could open a wider range of research to investigate the implementation of supervisory techniques for mitigating strain and anxiety of nurses. Additionally, the SARS-CoV-2 (COVID-19) pandemic has spurred an increase in depression and strain experienced by nurses (Arnetz et al., 2020), so the need for research into how to mitigate this strain has increased.

The implications for employee health are also relevant to the findings of the present study. Health-promoting leadership refers to the interaction between the work environment and leadership behavior (Jiménez et al., 2017). Health-promoting leaders positively influence employee health and the work environment. TFL and supervisor social support are positively correlated with employee well-being, both in the present study and in prior research (Arnold, 2017; Porter, 2015). The findings of the present study could be beneficial for future research regarding what constitutes health-promoting

leadership and how TFL and supervisor social support can be employed to enhance employee health and positively impact the working environment. Understanding the focal constructs and whether they are redundant opens a field of more extensive research for health-promoting leadership.

This study also has implications for the field of occupational stress and health research, as the redundancy of the focal constructs would suggest that researchers focusing on either TFL or supervisor social support should perhaps delve into both constructs when reviewing prior research and not just on one of the constructs that on face value seems to better address what a researcher is thinking about. For example, in situations where supervisor social support is being studied in relation to stressors and strains, literature on TFL should also be integrated in the literature review. In other words, existing findings from research that involves TFL may be applicable to supervisor social support, and existing research findings regarding supervisor social support may be applicable to TFL.

Theoretical implications for this study involve the future research of supervisory support and leadership. This study's findings indicate a likely redundancy between TFL and supervisor social support, suggesting that they may not be discrete constructs warranting separate lines of research.

In order to further substantiate the present findings, perhaps a meta-analysis could be conducted to confirm the nature of TFL and supervisor social support across leadership, behavioral, and work-related stress literature. Such a study could confirm whether if the relationship between TFL and supervisor social support are similar across studies, which could further support their redundancy. A meta-analytic confirmatory

factor analysis could further confirm whether the two constructs are redundant, and whether they should be studied as such.

Practical Implications

The findings of this study have practical implications for leadership development and practice. Leaders who are aware of and attentive to their subordinates' emotions, actions, and motives, are better equipped to make "ongoing corrective adjustments" in their leadership practices (Mason et al., 2014). Emotional support is a key element of supervisor social support, specifically with regard to listening to subordinates' problems and paying attention to them during difficult times (Beehr & Glazer, 2001). Fostering leaders who are in tune with their subordinates' emotions (via supervisor social support) can enhance leadership and supervisory effectiveness, as it allows the leader to be more aware of what guidance or adjustments that they must make in their leadership processes. Although individualized consideration does not necessarily have a stronger correlation with supervisor social support than any of the other TFL elements, TFL and supervisor social support do both address an emotional component of leadership that may be used to foster more effective leadership (Mason et al., 2014).

Additionally, the emotional aspect of supervisor social support can involve discussing positive aspects of work, negative aspects of work, and non-work-related aspects of peoples' lives (Beehr & Glazer, 2001). This can give leaders insight into what employees are feeling about their work situations (both negative and positive aspects), as well as give context to employee behavior and performance. This information can be used to make informed decisions about leadership practices. Thus, if TFL and supervisor social support are redundant, as partially suggested by the present studies, literature on

supervisor social support and TFL can both be beneficial in developing leadership training programs. TFL training has been shown to correlate with improved leadership practices (Abrell et al., 2011; Duygulu & Kublay, 2010), and redundancy would open a greater pool of resources for the development of such programs.

Supportive leadership may also be particularly useful in navigating the altered work arrangements post-COVID-19. Due to the pandemic, many organizations have struggled to survive. Leadership has had to envision ways to stimulate a cohesive future vision and strategy (Sayyadi & Provitera, 2021). TFL and supportive supervisors have been shown to be positive antecedents of strategic alignment and performance (Beehr et al., 2009; Sayyadi & Provitera, 2021). Thus, heightened understanding of TFL and supervisor support can be particularly beneficial in work environments that have suffered from COVID-19.

Study Limitations and Future Research

Although this study showed meaningful results, namely strong correlations between TFL and supervisor social support, overlapping factors vis a vis PCAs, partial generalizability of those results across cultures, and mostly invariant correlations between TFL and supervisor social support with other stress-related variables, there were a few limitations. The first limitation is sample size. The sample size was adequate (Israel, 1992) with 234 participants in the MTurk sample and between 118 and 390 in the samples from USA, Germany, and Spain. However, larger sample sizes (which can be determined in each case by Pocock's formula) are better suited for establishing validity, so long as they are not excessive (i.e., higher than the appropriate number determined by Pocock's formula; Faber & Fonseca, 2014). Using an inappropriate sample size can cause

nonsignificant or incorrect results (Pourhoseingholi et al., 2013).

A second limitation was the use of MTurk. Asian participants are overrepresented in MTurk samples, whereas Black and Hispanic participants are underrepresented, as compared with the US workforce, and the general US population (Cheung et al., 2017). The sample for the present study included a majority of White and Asian participants, whereas US Labor Bureau Statistics (2020) indicate that the US labor force has higher representation of Black workers than Asian workers. The percentage of White participants was seemingly consistent with the US labor force (US Bureau of Labor Statistics, 2020). Nonetheless, this is a common issue in behavioral research, and the cross-cultural component introduced in Study 2 aimed to mitigate any possible effects of the sample size used in Study 1.

A third limitation was the use of only three countries in the cross-cultural component of the study. The USA, Germany, and Spain are all WEIRD, and they display many similar cultural values (GLOBE, 2004). Gathering data from people in more varied nations may be beneficial for establishing generalizability beyond the WEIRD cultures. Future research may incorporate data collection from countries that endorse different cultural values. For example, utilizing a sample that includes people from Taiwan, a more collectivist culture than USA, Germany, and Spain, might present different findings (Hofstede, 2001). It may also be useful to look more closely at how different cultures within countries respond to these study variables too. As Spain presented slightly differing results than USA or Germany, and although still an individualist country, has lower levels of individualism than USA, Germany, or most European countries, it may be interesting to see how Spain's results would compare with other European countries in

relation to TFL and supervisor social support (Hofstede, 2001). Examining outcomes and variable correlations of TFL and supervisor social support across different cultures within the USA could provide interesting insights into the redundancy of the constructs, as well as give a more well-rounded idea of how the constructs interact with variables across different parts of the country.

A fourth limitation to the current study is the lack of control for certain confounding variables, such as organizational norms and practices in different professions. For example, because cross-cultural data were only collected from the nurse population, findings are constrained to this career group. Future research may involve collecting data from a broader range of professions. Discerning the relationship between TFL and supervisor social support, as well as TFL or supervisor social support in relation to other work-related variables in a broader range of careers cross-culturally could give more valuable insight into their redundancy and generalizability of the current findings.

Conclusion

The present study provided insight into the relationship between TFL and supervisor social support. Based on the findings, it is likely that TFL and supervisor social support are redundant. Research findings from the general working population in the United States, as well as from the nurse populations in the United States, Germany, and Spain supports this assertion. Testing the focal variable statistical characteristics and relationships with other variables within and across countries provides a more robust test of generalizability than a test within one country alone. Future research may involve repeated measures, as well as a more diverse selection of countries and professions. The implications of the findings suggest that it is unlikely necessary to measure both TFL and

supervisor social support; similar conclusions will likely be found and in preparing leadership and supervisor training programs, findings from both bodies of literature should be integrated.

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APPENDIX A
INSTITUTIONAL REVIEW BOARD APPROVAL



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May 5, 2021

Sharon Glazer
University of Baltimore
1420 N. Charles Street
Baltimore, MD 21201

RE: **IRB Protocol #256– Approved under Exempt Review**

Dear Sharon:

This letter serves as official confirmation of the Institutional Review Board's review of your protocol for a study entitled "**Validation of Meaningfulness in Life Measure.**"

The Institutional Review Board considered your request and concluded that your protocol poses no more than minimal risk to participants. In addition, research involving the use of widely acceptable survey/interview procedures where the results are kept confidential and the questions pose minimal discomfort to participants is exempt from IRB full-committee review per 45 CFR 46.104 (d) (2). As a result, the Institutional Review Board has designated your proposal as exempt.

Investigators are responsible for reporting in writing to the IRB any changes to the human subject research protocol, measures, or in the informed consent documents. This includes changes to the research design or procedures that could introduce new or increased risks to human subjects and thereby change the nature of the research. In addition, you must report any adverse events or unanticipated problems to the IRB for review.

If you have any questions, please do not hesitate to contact me directly by phone or via email.

As authorized by Dr. Gabriela Wasileski
Chair, Institutional Review Board

A handwritten signature in blue ink that reads 'Stefanie Hamberger'.

Stefanie Hamberger
Coordinator, Institutional Review Board

University of Baltimore
1420 N. Charles St.
Baltimore, MD 21201-5779

APPENDIX B
SURVEY ITEMS OF STUDY VARIABLES

Item #	Item Content
Transformational Leadership (Berger et al., 2012)	
TFL 1	I have trust in his/her ability to overcome any obstacle.
TFL 2	S/he develops ways of motivating us.
TFL 3	I feel proud to work with him/her.
TFL 4	S/he is concerned with training those who need it.
TFL 5	S/he gives advice to those who need it.
TFL 6	S/he gets us to rely on reasoning and evidence to solve problems.
TFL 7	S/he promotes the use of intelligence to overcome obstacles.
TFL 8	S/he presents things through an approach that stimulates me.
Supervisor Social Support (Caplan et al., 1975)	
SSS 1	My supervisor at work goes out of his or her way to do things to make my work life easier for me.
SSS 2	It is easy to talk with my supervisor at work.
SSS 3	I can rely on my supervisor at work when things get tough at work.
SSS 4	My supervisor at work is willing to listen to my personal problems.
Role Overload (Beehr & Glazer, 2005)	
RO 1	I receive an assignment without the manpower to complete it.*
RO 2	I am given enough time to do what is expected of me on my job.
RO 3	It seems like I have too much work for one person to do.*

Item #	Item Content
RO 4	On my present job, the amount of work seems to interfere with how well I can do the job.*
RO 5	I often notice a marked increase in my workload.*
Role Ambiguity (Beehr & Glazer, 2005)	
RA 1	I feel certain about how much authority I have at work.
RA 2	I have clear, planned goals and objectives for my job.
RA 3	I know I have divided my time properly at work.
RA 4	I know exactly what is expected of me at work.
RA 5	Explanation is clear of what has to be done at work.
Role Conflict (Beehr & Glazer, 2005)	
RC 1	I have to do things at work that should be done differently.
RC 2	I work with two or more groups who operate quite differently.
RC 3	I receive incompatible work requests from two or more people.
RC 4	I do things at work that are apt to be accepted by one person and not accepted by another.
RC 5	I work on unnecessary things.
Well-Being (General Health Questionnaire, Short-Form; Goldberg's 1972, as cited in Banks et al., 1980)	
WB 1	I have been able to concentrate on what I am doing.
WB 2	I have lost much sleep over worry.(R)
WB 3	I have felt that I am playing a useful part in things.
WB 4	I have felt capable of making decisions about things.
WB 5	I have felt that I can't overcome my difficulties.

Item #	Item Content
WB 6	I have been able to enjoy my normal day-to-day activities.
WB 7	I have been able to face up to my problems.
WB 8	I have been feeling unhappy or depressed.(R)
WB 9	I have been losing confidence in myself.(R)
WB 10	I have been thinking of myself as a worthless person.(R)
WB 11	I have been feeling reasonably happy, all things considered.
WB 12	I have been constantly under stress.**
Anxiety (Parker & Decotiis, 1983)	
Anx 1	I have felt fidgety or nervous as a result of my job.
Anx 2	My job gets to me more than it should.
Anx 3	There are lots of times when my job drives me right up the wall.
Anx 4	Sometimes when I think about my job I get a tight feeling in my chest.
Affective Commitment (Allen & Meyer, 1990)	
AC 1	I do not feel like “part of the family” at my organization.(R)*
AC2	I would be very happy to spend the rest of my career with this organization.
AC 3	This organization has a great deal of personal meaning for me*
AC 4	I do not feel a strong sense of belonging to my organization.(R)*
AC 5	I enjoy discussing my organization with people outside of it.
AC 6	I really feel as if this organization’s problems are my own.
AC 7	I do not feel “emotionally attached” to this organization.(R)*
AC 8	I think that I could easily become as attached to another organization as I am to this one.(R)

Item #	Item Content
<hr/> Turnover Intention (Beehr & Glazer, 2005) <hr/>	
TI 1	I will actively look for a new job in the next year.
TI 2	I often think about quitting.
TI 3	I will probably look for a new job in the next year.
<hr/> <i>Note.</i> (R) = Reverse coded. *Denotes item used in nurse sample. **Denotes item excluded due to vague reference <i>to stress</i> .	

APPENDIX C

PRINCIPAL COMPONENTS FACTOR ANALYSES WITH OBLIMIN

ROTATION

Table C.1

Eigenvalues, Percentages of Variance and Cumulative Percentages for 8 TFL and 4 Supervisor Social Support Items (Oblimin Rotation)

Factor	Eigenvalue	% of variance	Cumulative %
1	10.44	86.99%	86.99%
2	.32	2.66%	89.65%
3	.24	2.00%	91.65%
4	.18	1.47%	93.12%
5	.16	1.35%	94.48%
6	.14	1.14%	95.61%
7	.12	.96%	96.59%
8	.10	.82%	97.39%
9	.10	.79%	98.18%
10	.09	.70%	98.88%
11	.08	.63%	99.51%
12	.06	.50%	100.00

6 Table C.2

Eigenvalues, Percentages of Variance and Cumulative Percentages for 8 TFL and 4 Supervisor Social Support Items Across Each Culture (Oblimin Rotation)

Factor	USA				Germany				Spain						
	Eigenvalue	variance	Cumulative %	Factor	Eigenvalue	variance	Cumulative %	Factor	Eigenvalue	variance	Cumulative %	Factor	Eigenvalue	variance	Cumulative %
1	9.37	78.04%	78.04%	1	8.08	67.36%	67.36%	1	7.46	62.20%	62.20%	1	7.46	62.20%	62.20%
2	.79	6.61%	84.65%	2	.92	7.67%	75.04%	2	1.37	11.42%	73.62%	2	1.37	11.42%	73.62%
3	.36	3.03%	87.69%	3	.71	5.85%	80.88%	3	.63	5.22%	78.83%	3	.63	5.22%	78.83%
4	.28	2.37%	90.06%	4	.47	3.89%	84.77%	4	.52	4.30%	83.14%	4	.52	4.30%	83.14%
5	.23	1.95%	92.01%	5	.40	3.37%	88.14%	5	.43	3.57%	86.71%	5	.43	3.57%	86.71%
6	.20	1.68%	93.68%	6	.32	2.64%	90.79%	6	.39	3.25%	89.96%	6	.39	3.25%	89.96%
7	.19	1.54%	95.23%	7	.27	2.29%	93.07%	7	.29	2.43%	92.39%	7	.29	2.43%	92.39%
8	.16	1.31%	96.53%	8	.25	2.08%	95.16%	8	.28	2.33%	94.72%	8	.28	2.33%	94.72%
9	.14	1.13%	97.66%	9	.20	1.68%	96.84%	9	.21	1.79%	96.51%	9	.21	1.79%	96.51%
10	.12	.98%	98.64%	10	.18	1.49%	98.33%	10	.18	1.48%	97.99%	10	.18	1.48%	97.99%
11	.10	.83%	99.47%	11	.13	1.09%	99.42%	11	.15	1.22%	99.21%	11	.15	1.22%	99.21%
12	.06	.53%	100.0%	12	.07	.58%	100.0%	12	.10	.79%	100.0%	12	.10	.79%	100.0%