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INDIVIDUAL INNOVATIVENESS: ANTECEDENT FACTORS AND THE ROLE OF POWER AND STATUS DIFFERENCES

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By

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To: Dean William Hardin
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This dissertation, written by Luis E. Giralt, and entitled Individual Innovativeness: Antecedent Factors and the Role of Power and Status Differences, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Florida International University, 2023

DEDICATION

To my wife Gabriela. For her ceaseless devotion, encouragement, and patience.

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ABSTRACT OF THE DISSERTATION

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Organizations that wish to establish competitive advantages to succeed are compelled to constantly innovate. Fundamentally, innovation at work materializes through individual employee creativity developed within the context of a social environment, comprised of work teams and the overall organizational framework, including its hierarchy. Organizations promote creative idea generation and its implementation by facilitating learning opportunities, nurturing risk taking, and establishing objectives and goals that foment team member engagement. Relatedly, regulatory focus theory states that individuals self-regulate behavior to achieve goals and are predisposed towards conduct that seeks fulfillment of aspirations (gains) or fulfillment of obligations (loss avoidance). Promotion focused individuals are motivated to experiment and explore new possibilities, behaviors conducive to creative thought and innovation, as opposed to prevention focused individuals who are motivated to follow rules and work within established parameters, behaviors expected to preserve the status quo.

This research presents a model and hypotheses that incorporate organizational, team, and individual antecedent factors of individual innovativeness (propensity to be innovative), including regulatory focus. Moderating influences of organizational hierarchy, specifically supervisor-subordinate power difference and employee status differences are explored, as well as moderating effects of demographic characteristics.

Using an online provider, a sample of 147 self-report survey responses was collected from Amazon Mechanical Turk workers, employed in service, for-profit companies. Statistical analyses were performed, and findings were reported. Hypotheses related to antecedent factors (direct effects) of the dependent variable were supported, along with interactions between demographic moderators and three predictor variables. In line with the stated hypothesis, overall regulatory focus was found to be a significant predictor of the dependent variable but in contradiction to the hypothesized effect, the prevention focus sub construct was also positively related to the dependent variable. Remarkably, neither power nor status differences were found to significantly moderate any of the predictor variables. Plausible explanations are offered for these findings, grounded on results from previous research, and ideas for related future investigations are outlined.

Keywords: Innovation and innovativeness, organizational power and status, regulatory focus, input-process-output framework

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INTRODUCTION

An organization's capacity for innovation is essential for adaptability and consequently, long-term performance and sustainability (Amabile, 1988; Gupta, Tesluk, & Taylor, 2007; Mumford & Hunter, 2005; Van de Ven, 1986). Innovation allows organizations to react to changes in their environment or to proactively influence and transform their environment (Damanpour, 1991; Hult, Hurley, & Knight, 2004). It enables the assimilation of ever-increasing technological complexity and the implementation of shortened product and service cycles, crucial elements for customer value development (D'Alvano & Hidalgo, 2012; Eisenhardt & Tabrizi, 1995).

Innovation has been interpreted by how it unfolds (reassembling existing ideas or uncovering unique approaches), what it provokes (an idea, a new product, or a process improvement), and the level of analysis to which it pertains (individual, team, organizational). West and Farr (1990) aptly capture the multifaceted concept of innovation, defining it as "the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit role performance, the group, the organization or the wider society" (p.16). Accordingly, innovation is a core underlying theme of several disciplines, including Corporate Policy and Strategy (e.g., Eisenhardt & Martin, 2000; Porter & Stern, 2001), Organizational Analysis (e.g., Ng, Feldman, & Lam, 2010; Wallace, Butts, Johnson, Stevens, & Smith, 2016), Organizational Learning (e.g., Amabile, Conti, Coon, & Lazenby, 1996; Faraj, Jarvenpaa, & Majchrzak, 2011), and

Marketing (e.g., Abbu & Gopalakrishna, 2021; Akgun, Lynn, & Yilmaz, 2006; Eckhardt, Houston, Jiang, Lamberton, Rindfleisch, & Zervas, 2019; Slater & Narver, 1995).

Research has explored factors leading to innovation along several dichotomous lines of inquiry that attempt to incorporate distinct dimensions of innovation and their corresponding causes (Damanpour, 1991). For instance, type of innovation (e.g., technical or administrative), stage of adoption (e.g., initiation or implementation), specific characteristics (e.g., high versus low-cost innovation), and type of organization, for example, differences in innovativeness among entrepreneurial versus conventional firms, manufacturing (tangible output) versus service (intangible output) companies, non-profit versus for-profit organizations, and public versus private enterprises (Damanpour, 1991; Totterdell, Leach, Birdi, Clegg, & Wall, 2002). Intriguingly also, research has produced contradictory findings based on antecedent factors (Mumford & Hunter, 2005). For instance, as Mumford and Hunter (2005) outline, whether creative thought is stifled or promoted by employee autonomy or group cohesion (Amabile & Conti, 1999; Gilson & Shalley, 2004), by a bureaucratic or an adhocratic organizational structure (Bunderson & Reagans, 2011; Damanpour, 1991), and by strict or flexible goals and deadlines (Cardinal, 2001; Oldham, 2003).

Hulsheger, Anderson, and Salgado (2009) describe innovation as a two-step process that requires new idea generation (creativity) and its implementation. Creativity is an individual level construct, believed to be necessary but not sufficient for innovation, an organizational construct, which incorporates the implementation of creative ideas for organizational use (Mathisen & Einarsen, 2004). Personality and psychological states are responsible for individual creative output (Gupta et al., 2007), as opposed to the social

context surrounding the individual, which is responsible for innovation at the team and organizational level (Amabile, 1988; Perry-Smith, 2006). Innovation does not occur in a vacuum and requires interaction of individual members with the internal environment (e.g., other team members, goals, organizational culture), and with the external environment, including clients, competitors, and regulators (Argote & Miron-Spektor, 2011; Gupta et al., 2007; Kozlowski & Bell, 2013). West and Farr (1989) propose that in addition to member characteristics and job description, three other critical factors drive individual innovation at work: organizational factors, relationship with supervisors, and work group factors. In other words, innovation depends on a firm's successful incorporation of individual employees within a creative social organizational context (Perry-Smith & Shalley, 2003). Hence, Hulsheger and colleagues (2009) divide the antecedent variables that influence innovation into factors affecting individual creativity (micro level), group or team dynamics (meso level), and the broader organizational culture and climate (macro level).

At the individual level, self-regulation is vital for adaptation at work because individuals need to manage and focus their awareness, attention, and behavior to effectively pursue goals (Lanaj, Chang, & Johnson, 2012). According to regulatory focus theory (Higgins, 1997, 1998), individuals use two self-regulatory systems during goal pursuit, promotion focus and prevention focus, but have a chronic inclination towards one or the other. Promotion focus is associated with goal orientation, exploratory behavior, experimentation, and learning as opposed to prevention focus, which is associated with risk avoidance and prevention of losses (Higgins, 1998). Therefore, self-regulation via promotion focus is believed to motivate behaviors conducive towards creativity and

innovation as opposed to self-regulation via prevention focus, which is expected to motivate opposite behaviors (Friedman & Forster, 2001; Lanaj et al., 2012; Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008; Wallace et al., 2016).

The rapid evolution of technology and ensuing acceleration of globalization escalated the need for broader expertise and diversity, transforming organizations from single job to team-based structures (Koslowski & Bell, 2013). Furthermore, as task and organizational complexity grew, the creation and implementation of ideas progressively took place in work teams (Brooks, 1994; Marks, Mathieu, & Zaccaro, 2001; West, 2002). Appropriately, firms enacted schemes to promote behaviors associated with team participation, such as profit-sharing plans (Welbourne, Johnson, & Erez, 1998). Improved communication and global corporate merger and acquisition expansion also fueled the proliferation of work organized around teams. By the mid-nineteen nineties, eighty percent of companies with one hundred or more employees used a team-oriented approach, which brought about a corresponding need for empirical and practical research on team composition and effectiveness (Cohen & Bailey, 1997; Kozlowski & Bell, 2013).

Thus, learning in organizations takes place through the experience and knowledge acquired via team task performance, influenced by team member interaction with each other, with the organization, and with the external environment (Argote & Miron-Spektor, 2011; Marks et al., 2001). Teams serve important organizational functions (e.g., product development) by uncovering synergies through cross functional collaboration (Eisenhardt & Tabrizi, 1995; Fay, Borrill, Amir, Haward, &West, 2006). However, teams involved with innovation must be able to confront changing internal and external

environments, challenges related to effective group collaboration, and ambiguity (even confusion) regarding goals and potential outcomes (Hoegl & Parboteeah, 2006; Mumford & Hunter, 2005).

The most widely used approach to describe antecedents of team creativity and innovation, is the input-process-output (I-P-O) framework of team effectiveness (Anderson & West, 1998; McGrath, 1984). It integrates variables related to the composition of teams (inputs), those related to the interaction among team members (process), and the outcome of their collaboration (outputs). According to Kozlowski and Bell (2013), other models have been proposed that, for example, address the specific stages of team formation and team development (Gersick, 1988; Kozlowski, Gully, Nason, & Smith, 1999) but models focused on team effectiveness have mostly been based on the I-P-O framework. Succeeding models have clarified team constructs, have incorporated multilevel influences (individual focus, dyadic exchange, team interaction), or have integrated temporal aspects to expand the scope and explanatory power of the I-P-O framework (Cohen & Bailey, 1997; Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Kozlowski et al., 1999; Marks et al., 2001).

Extant research on team effectiveness covers numerous outcomes measured at either the individual, group, or organizational levels. According to Cohen and Bailey (1997), Kozlowski and Bell (2013), and West and Anderson (1996), effectiveness impacts performance (productivity, customer satisfaction, innovation), team member attitudes (employee satisfaction, commitment, trust in management), and team member behavior (absenteeism, turnover). Thus, defining the scope of any study is vital, specifically which aspects of effectiveness and performance are being investigated and at

which level of analysis (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008; Marks et al., 2001; Mumford & Hunter, 2005). This study measures effectiveness as innovativeness based on individual level perceptions of team-oriented work dimensions.

Factors external to the team like the organizational context (e.g., organizational structure, incentive systems) and the relationship with other key stakeholders (e.g., management), play a significant role in performance and other outcomes (Argote & Miron-Spektor, 2011; Cohen & Bailey, 1997; D'Alvano & Hidalgo, 2012). The organizational context includes human interaction between members and thus should incorporate the organization's social hierarchy, or the "rank order of individuals with respect to a valued social dimension" (Bunderson & Reagans, 2011, p. 1182). Social hierarchy, manifested through individual members' power (control over valued resources) and status (esteem or prestige), have been posited in the research literature as important detractors to organizational learning outcomes (Bunderson & Reagans, 2011; Contu & Willmott, 2003; Edmondson, 2002).

Organizational learning, "a change in knowledge that occurs as a function of experience," is divided into the three subprocesses of creating, retaining, and transferring knowledge (Argote & Miron-Spektor, 2011, p. 1124). Creativity is a central tenet of knowledge creation and has been studied in this context, i.e., the influence of experience on creativity, an antecedent to knowledge creation (Amabile 1997; Audia & Goncalo, 2007). Therefore, an organization's power and status dimensions should also influence its ability to innovate, through their effect on individual creativity and on the organization's creative processes.

Because it is an essential pursuit, undertaken through the cooperative efforts of individuals working in dynamic environments, the study of workplace innovation continues to incite scholarly interest. The present study explores propensity to innovative (i.e., innovativeness) from the perspective of individuals who work as members of one or more teams. To establish boundary conditions but provide ample scope for meaningful, generalizable contributions, this research will focus its analysis and discussion within the context of U.S. service oriented, for-profit organizations. It intends to contribute to the existing organizational innovation literature by incorporating the direct effect of individual self-regulation as well as the moderating effects of power and status differences. A more refined understanding of power and status differences within organizations may improve the alignment of managerial practices to positively influence subordinate attitudes towards innovativeness. Moreover, clarifying the effect of hierarchical differences on employee motivation may assist organizations in establishing better employee self-regulatory fit, bringing about improved innovativeness outcomes. Finally, distilling which factors discernably contribute to individual innovativeness within the organizational context of this study, may help boost their prominence, leading to practical outcomes for corporate profitability and sustainability.

Incorporating this background, grounded in the I-P-O nomenclature, the study's main purpose is to answer the following research questions:

Research Question 1: What factors contribute to individual innovativeness in U.S. service sector, for-profit organizations?

Research Question 2: What moderating effects do power and status differences have on the relationship between individual innovativeness and its antecedent factors in U.S. service sector, for-profit organizations?

Chapter 2

LITERATURE REVIEW

Creativity and innovation have received attention from scholars and practitioners due to their relevance in the study of the attributes that lead to an organization's competitive advantages and performance outcomes (Perry-Smith & Shalley, 2003). Specifically, innovation has been a core feature in the study of organizational effectiveness and improvement (Weerawardena & Mavondo, 2011). It began with the fundamental notion of continuous innovation through creative destruction (Schumpeter, 1942), followed by the study of the factors that influence the adoption of innovation in organizations (Kimberly & Evanisko, 1981; Mohr, 1969), the exploration of the process through which organizations become innovative (Anderson & King, 1993; West & Farr, 1989), and the incorporation of organizational culture (market orientation) as a precursor or moderator to innovativeness (Hurley & Hult, 1998). Ensuing inquiry incorporated other aspects such as the dynamic capabilities that allow firms to extend and modify organizational routines and resources to "generate new value-creating strategies" (Eisenhardt & Martin, 2000, p. 1107), a relationship orientation perspective, which investigated potential improvements in innovative capability through inter-organizational collaboration (Olson, Walker, Ruekert, & Bonner, 2001; Panayides, 2006;), and the conditions under which leadership styles influence innovative behavior (Le Blanc, Gonzalez-Roma, & Wang, 2021).

Evolution of Innovation Research

Initially, research at the organizational level dominated the study of innovation, with less attention paid to factors that contribute to innovation at the group or individual levels (Anderson & West, 1998; West & Farr, 1989). At the individual level, problem recognition and subsequent idea origination triggers innovation, along with the person's assessment of the organizational support for innovative behavior (Pirola-Merlo & Mann, 2004; Scott & Bruce, 1994). Research has attempted to identify specific features of individual cognitive styles that lead to greater creative and innovative behavior (Barron & Harrington, 1981; Jabri, 1991; Kirton, 1976). Kirton (1976) believed individuals manifest different qualities during problem solving, ranging from those that have an ability to do things better (adaptors) to those that have an ability to do things differently (innovators). For Jabri (1991), individuals solve problems using one of two modes of thinking, associative and bisociative. Scott and Bruce (1994) describe associative thinking as systematic, following routines, adhering to rules, and working within established methods and procedures, which produces conventional solutions to problems. Bisociative thinking gives little attention to established rules or boundaries and emphasizes intuition, which produces novel solutions to problems (Scott & Bruce, 1994). In their study of an industrial U.S. R&D facility, Scott and Bruce (1994) found that intuition (bisociative thinking) was not necessary for innovation, but associative thinking was significantly counterproductive to innovative behavior. Importantly, the work on cognitive styles and associated scales developed by Kirton (1976), Jabri (1991), and Scott and Bruce (1994), were useful in this study's decision to use regulatory focus as an antecedent to innovativeness. Moreover, Neubert et al.'s (2008) operationalization of creative behavior

(dependent variable) measured by modifying Scott and Bruce's (1994) Creative Behavior Scale, established a precedent for this investigation's use of individual perceptions (i.e., self-report) to measure innovativeness (Level of Analysis, p. 43).

Innovation research also migrated towards the study of the social context in which individuals operate (Amabile 1988; Woodman, Sawyer, & Griffin, 1993). Organizations increasingly turned towards team-based work to promote innovation (Pirola-Merlo & Mann, 2004). The aggregate talents of a team working together, using the available resources and tools, can produce superior results to those of any individual member (Marks et al., 2001). Team innovation has been used to describe the deliberate attempt by teams to introduce latest ideas, procedures, processes, or products that benefit individual members, the team, the organization, or society (Somech & Drach-Zahavy, 2013). Successful innovative behaviors exhibited by one team may be applied more broadly within an organization, with the potential to generate firm-wide applicability (Anderson & West, 1998; Fay et al., 2006; Le Blanc et al., 2021). For Van der Vegt and Janssen (2003) innovation often occurs through interaction or when "groups of individuals develop, promote, discuss, modify, and realize new ideas" (p. 730). Consequently, team factors play a vital role in determining individual innovative behavior. Principally, outcomes depend on the processes used during team member interaction (Marks et al., 2001).

Work Group Environment

Within organizations, the study of innovation must consider individual dispositions and creativity, along with interaction effects at group, organization, and

environment (market, technology, and competitive landscape) levels (Mumford & Hunter, 2005). Mumford and Hunter (2005) describe how the requirements for creativity and innovation at distinct levels can act against each other, impeding efforts to establish a comprehensive theory of innovation, and complicating a firm's ability to implement dependable innovative strategies. For example, ongoing management control of resource allocation may dampen individual creativity and innovation by mitigating the potential for free exploration of ideas. Also, creativity and innovation at the group level relies on openness, cohesion, and collaboration, which may not be natural dispositions of creative, self-determining individuals (Mumford & Hunter, 2005). Additionally, greater task and project complexity requires diversity of functional expertise, which makes group unity more onerous. In other words, "creativity and innovation apparently require a balance of differentiation and integration" (Mumford & Hunter, 2005, p. 56).

As described, individuals normally create and develop ideas in organizations through social interaction. Thus, individual perceptions of the work environment are believed to have a powerful influence on creativity and innovation. The approach used by researchers to uncover the environmental factors conducive to organizational creativity and innovation, was classified by Mumford and Hunter (2005) into four categories:

Team: Focus on the requisite factors for effective group interaction by members working together towards achieving innovative results. These include support for innovation, clarity of objectives, member safety, and task orientation (e.g., Anderson & West, 1998; Burningham & West, 1995).

Performance: Focus on general work environment factors that may differentiate the creative performance among groups. This approach is characterized by examining innovative teams to extract the variables that contribute to their success, such as level of autonomy, supervisory support, job complexity, and goal orientation (e.g., Bain, Mann, & Pirola-Merlo, 2001; Oldham & Cummings, 1996).

Context: Focus on work environment aspects that encourage (or discourage) creative and innovative behavior. This approach examines variables related to organizational and supervisory encouragement for innovative initiatives, resource allocation, the assignment of challenging and meaningful work, and workload (e.g., Amabile, 1997; Amabile et al., 1996).

Psychological: Individual perceptions of environmental characteristics are aggregated based on the expectation that members of an organization have a collective sense of meaning (Isaksen, Lauer, & Ekvall, 1999). This becomes the organizational climate, which influences processes (e.g., decision making, communication, learning, motivation) that affect innovativeness and productivity (Ekvall, 1996). The psychological approach emphasizes the use of psychometrics (questionnaires) to evaluate an organization's climate for creativity (Isaksen, et al., 1999). Dimensions of creative climate include extent of involvement and commitment, level of autonomy, amount of time available for elaborating ideas, work tension or conflict, tolerance for ambiguity, and degree of spontaneity or humor (Ekvall, 1996).

Organizational Structure and Innovation

The extant research literature has used typology to distinguish and uncover subcategories of innovation (Damanpour, 1991). These include technical versus administrative innovation (Daft, 1978), radical versus incremental innovation (Axtell, Holman, Unsworth, Wall, Waterson, & Harrington, 2000; Dewar & Dutton, 1986; Engen & Holen, 2014), and product manufacturing versus service innovation (Janssen, Castaldi, & Alexiev, 2016). In his meta-analytical study of organizational innovation, Damanpour (1991) also found significant differences in the moderating effects of organizational types, specifically in for-profit as opposed to non-profit organizations and in manufacturing as opposed to service organizations. For the former, the researcher found that stricter work rules and procedures (degree of "formalization") discouraged innovation in non-profits but unexpectedly had the opposite effect in for-profits. This result, however, was contradicted by Troy, Szymanski, and Varadarajan (2001) who found that formalization inhibited the number of new product ideas generated by work groups of 285 U.S. houseware manufacturers. Andrews and Smith (1996) found that creativity in marketing programs was greatest when planning process formalization was moderate, i.e., planning process formalization and creativity had a curvilinear (inverted U-shaped) relationship.

Organizations with well-defined hierarchies (extent to which decision-making authority is at higher levels) are expected to have stricter rules and procedures that dictate employee approach to problem solving, limiting an employee's ability to deal with uncertainty, reducing experimentation, and possibly "screening out" the latest technology (Cardinal, 2001, p. 24). Cardinal (2001), however, finds that centralization of authority

positively affects both existing drug enhancements (incremental innovation) and new drug output (radical innovation) in R&D units of U.S. pharmaceutical companies. According to Damanpour (1991), concentration of decision-making authority discouraged innovation in both non-profit and for-profit organizations. Furthermore, Damanpour (1991) found no significant differences between innovation type (technical versus administrative or radical versus incremental). In summary, flexible work rules and stronger direct supervision was suggested to have dissimilar effects on innovation in service versus manufacturing organizations (Damanpour, 1991).

Mumford and Hunter (2005) reviewed the literature regarding the effect of structure on group innovation and outlined important implications for size of team, number of creative members, functional expertise, and complexity of tasks. Ideal group size is a concept that varies depending on the level at which it is analyzed, organization or work team. At the team level, creativity and innovation appear to be negatively associated with size, with an optimal range found between four to seven team members (Mumford & Hunter, 2005; Steck & Sundermann, 1978). Small teams (three or less) are usually less creative as they lack requisite diversity of expertise, and large teams (eight or more) may be highly creative only if operating within a climate of high cohesion, strong incentives for cooperation, and organizational support for creativity (Mumford & Hunter, 2005; Steck & Sundermann, 1978).

Most research studies on new product development find that multifunctional expertise is an important requirement. Teams composed of individuals with diverse functional backgrounds are expected to contribute greater diversity of experience, knowledge, perspectives, and external member contacts, which instigate novelty in the

way questions (and consequences) are framed and lead to more creative outcomes (Hambrick, Cho, & Chen, 1996; Van der Vegt & Janssen, 2003; Watson, Clark, & Tellegen, 1988). Nonetheless, greater diversity in functional expertise may prompt a reduction in unity and as Mumford and Hunter (2005) caution, should be used selectively when essential for project needs. Successful outcomes arise only if trust among team members is established, internal disagreements are channeled productively, and stress and workload are managed appropriately (Keller, 2001).

Other contextual factors, relevant in defining the structure of work teams, include project complexity and resource requirements. As both increases, so does the need for centralization of decision making and multifunctionality within or across supporting teams (Gassman & von Zedwitz, 2003). Taggar (2001) found that creativity does not increase with the number of creative people in a work group as their focus on goals diminishes with diversity of ideas. Furthermore, planning and evaluation, important aspects for team success, appear to be missing in teams with many highly creative individuals (Mumford, Schultz, & Osburn, 2002).

Service Sector Innovation

The service sector is by far the most important in the U.S. economy, comprising 77.6% of GDP as of 2021 (The World Bank), and innovation is believed to be an essential differentiating performance factor for its companies (Van Woerkom & Croon, 2009). Service innovation has characteristics distinguishable from those of product innovation, specifically because services are “intangible, heterogeneous, non-stockable” (Janssen et al., 2016, p. 798) and because they are generated jointly with clients, through

interactions that address specific client needs (Vargo & Lusch, 2004). Conceptually, organizational capabilities necessary for service innovation have been analyzed using different approaches depending on whether service innovation is viewed as an extension of product innovation (Eisenhardt & Martin, 2000), whether idiosyncratic features of specific industries are being studied in specific contexts (Hogan et al., 2011), or whether these two approaches are integrated to uncover firm capabilities required to "sense client needs, generate and develop ideas, and deliver them to clients" (Den Hertog, Van der Aa, de Jong, 2010, p. 500). This final conceptual approach (synthesis) is applied in this study to allow for discernable service innovation properties (as opposed to manufacturing innovation) that may apply to a broad range of service-oriented organizations (Coombs & Miles, 2000; Janssen et al., 2016). Specifically, three items from Janssen et al.'s (2016) dynamic service innovation capabilities scale are incorporated into the survey (Appendix B).

Innovation and Innovativeness

Organizational innovation and innovativeness are related but distinct constructs. Unfortunately, the distinction is not always obvious as either term is used interchangeably in the literature, as antecedent or outcome (Damanpour, 1991). Innovation refers to a way of changing an organization to improve or react to internal and external factors (Hult et al., 2004). It may be technical (e.g., production methods) or non-technical (e.g., administrative), refer to products, processes, or systems and involve a specific unit or the entire organization (Hovgaard & Hansen, 2004; Kamaruddeen, Yusof, & Said, 2010; Kimberly & Evanisko, 1981). Broadly, this study defines innovation as a change that leads to positive technological or administrative organizational outcomes

through the implementation, adoption, application, introduction, incorporation or generation of an idea, practice, behavior, object, product, service, process, or system.

Cognately, innovativeness is a disposition, willingness, or proclivity to change, i.e., "a person or group's propensity to adopt a new idea or technology early, relative to others" (Panayides, 2006, p. 468). Similarly, openness to new ideas, manifested in the behavior of individuals and groups, is part of an innovative company's culture (Hurley & Hult, 1998). Innovativeness refers to an organization's capacity to implement or engage in innovation (Hult et al., 2004) and thus, innovation is sometimes specified as a precursor to innovativeness (Kamaruddeen et al., 2010). Innovativeness does not require that a firm adopt ideas or behaviors novel to the marketplace (i.e., an invention), simply that they be new to the adopting organization (Hage & Dewar, 1973). Avlonitis, Kouremenos, and Tzokas (1994) point out that speed of adoption is a relevant component when differentiating firms based on their innovativeness, but it must be assessed controlling for external factors. For example, supplier and licensing issues, the rate of improvement in the innovation to be adopted, and other exigencies for adoption, such as raw material and complement availability (Avlonitis et al., 1994).

Research on Innovativeness:

After an extensive review of the literature, Wang and Ahmed (2004) identified five areas (dimensions) of possible organizational innovativeness (product, market, process, behavior, strategic) that determine an organization's capability to introduce new products or enter new markets. Hogan, Soutar, McColl-Kennedy, and Sweeney (2011), in a fruitful departure from the contemporary innovation literature focused on technology

and manufacturing, applied the resource-based view of competitive strategy to produce an innovation capability scale within the context of professional services firms. They prefer the term innovation capability and define it as "a firm's ability, relative to its competitors, to apply the collective knowledge, skills, and resources to innovation activities relating to new products, processes, services, or management, marketing or work organization systems, in order to create added value for the firm or its stakeholders" (p. 1266). Hogan and colleagues (2011) begin with Wang and Ahmed's (2004) five dimensions, add two of their own, and then reduce scale items to three dimensions of firm innovation capability: client-focused, marketing-focused, and technology-focused.

Gebert, Boerner, and Lanwehr (2003) present a model using technical (product and process) and behavioral aspects of innovativeness, but also include a firm's capacity to maximize the use of its creative resources. Focusing on behavioral aspects, Hurley and Hult (1998) separate the construct into innovativeness and innovative capacity. Innovativeness is framed by the authors in terms of an organization's cultural disposition and orientation, which allows it to assimilate current ideas, e.g., collaboration, communication, conflict resolution, and participative decision making. Innovative capacity is an organization's ability "to adopt or implement new ideas, processes, or products successfully" (Hurley & Hult, 1998, p. 44). A firm's innovativeness interacts with its structural and process attributes (size and age of group and organization, hierarchy, employee autonomy, market intelligence and size of network, strategic planning) to determine its innovative capacity. Accordingly, in Hurley and Hult's model (1998), the antecedent innovativeness leads to organizational outcomes (innovative capacity). Finally, in a qualitative case study of innovative forest product companies,

Hovgaard and Hansen (2004) proposed a model that differentiates innovation by product and process, as well as business systems, which includes innovations that do not fall under the first two categories (e.g., marketing, management).

This study measures individual innovativeness within an organization (dependent variable) or the degree to which an individual is disposed to be innovative, based on individual attributes, in addition to group and organizational antecedents and moderators that characterize the work environment. To measure the dependent variable, a survey is employed that includes behavioral factors of innovativeness taken from validated instruments, modified for self-report responses (Hogan et al., 2011; Neubert et al., 2008; Wellbourne et al., 1998).

Regulatory Focus Theory

Regulatory Focus Theory (RFT) describes how people self-regulate behavior in distinct ways to seek pleasure and avoid pain (Higgins, 1997). In RFT, individuals have two self-regulatory systems of behavioral choice that coexist and serve separate needs during goal pursuit: promotion regulatory focus and prevention regulatory focus (Higgins, 1998). These approaches are used to reach a desired end state and avoid an undesired end state (Higgins, 1998). They have a direct effect on the behaviors that individuals demonstrate regarding their intentions and how they achieve goals (Johnson, Smith, Wallace, Hill, & Baron, 2015). Motivation is associated with an individual's reference point with regards to success or failure, i.e., achieving positive outcomes for promotion focus, avoiding negative outcomes for prevention focus (Johnson et al., 2015).

Promotion-focused individuals strive towards an "ideal self" (Higgins, 1987, p. 320). They regulate their nurturance needs through accomplishments and advancement or a "promotion focus" (Higgins, 1998, p. 4). Motivation is driven by achievements or gains and a need to avoid failure or non-gains (Johnson et al., 2015). In other words, a desire to foster "hopes, wishes, and aspirations" (Lockwood, Jordan, & Kunda, 2002, p. 859). These individuals do not focus on losses but move towards desired end states and away from undesired end states, by trying different behaviors to determine what leads to positive outcomes (Johnson et al., 2015). Avidity, agility, and a concern for errors of omission characterize individuals who emphasize this regulatory focus (Johnson et al., 2015; Lanaj et al., 2012). Pleasure is achieved when individuals are rewarded for accomplishments and pain is felt when they are not recognized (Johnson et al., 2015). As a result, emotional responses fluctuate between cheerfulness and dejection (Brockner & Higgins, 2001).

Prevention-focused individuals strive towards a normative self or who one "ought to be" (Higgins, 1987, p. 320). They regulate their security needs by fulfilling duties and obligations through responsible behavior (Higgins, 1998). Individuals are motivated by mistake avoidance thus, desired states are associated with non-losses and undesired states with losses (Johnson et al., 2015). Safeguarding, accountability, mistake avoidance, and a concern for errors of commission motivate those who emphasize prevention regulatory focus (Forster, Higgins, & Bianco, 2003; Johnson et al., 2015; Lanaj et al., 2012). Pleasure is derived from an absence of negative consequences and pain is felt when they are present. Emotional responses fluctuate between quiescence and agitation (Brockner & Higgins, 2001).

Both promotion and prevention foci, therefore, influence the strategies that individuals use at work to pursue and achieve goals (Johnson et al., 2015). Promotion and prevention foci are independent strategies and the tactics used to attain goals depend on whether the individual is predisposed towards approaching (promotion) or avoidance (prevention) behaviors (Lanaj et al., 2012): Promotion focus strives to "approach matches to desired end-states" while prevention focus strives to "avoid mismatches to desired end-states" (Forster et al., 2003, p. 149).

Crowe and Higgins (1997) find that when faced with a challenging task or recent failure, individuals with a promotion regulatory focus are more eager to look for ways to achieve successes and avoid omitting potential gains. Those with a prevention focus will be vigilant to avoid mistakes and any errors that lead to their commission. Moreover, when undertaking tasks that may generate various possible successful alternatives, prevention focused individuals will avoid committing errors and therefore, will repeat a few tried and tested alternatives. Promotion focused individuals will eagerly pursue as many different alternatives as possible to avoid omitting any possible successful alternative (Crowe & Higgins, 1997). In controlled experiments that require sorting and classifying tasks, promotion focused individuals compared to prevention focused, generated more unique characteristics per member category, classified into a larger number of subgroups, using a greater number of sorting criteria (Crowe & Higgins, 1997). Promotion focused individuals were also quicker to respond, usually in the affirmative, than prevention focused individuals who take longer to respond, usually in the negative (Crowe & Higgins, 1997).

Empirical research suggest that promotion and prevention focus are related to the work behavior of individuals, including innovation (Lanaj et al., 2012; Wallace et al., 2016). Promotion focus is associated with exploratory behavior, experimentation, learning, and maximizing performance as opposed to prevention focus, which is associated with vigilance, certainty, risk avoidance, and achieving a minimally acceptable level of performance (Forster et al., 2003; Lanaj et al., 2012). Creative idea generation usually involves uncertainty, risk-taking, and experimentation which may lead to novel results (Baer, Oldham, & Cummings, 2003; Tierney, Farmer, & Graen, 1999). These are characteristics compatible with promotion not prevention-focused individuals, and thus, self-regulation via promotion focus is believed to lead to behaviors conducive to creativity and innovation as opposed to self-regulation via prevention focus, which will lead to behaviors that inhibit creativity and innovation (Neubert et al., 2008).

Power

Power is control over valued resources, including money, information, decision-making authority, and over the outcomes of other people (Anderson, John, & Keltner, 2012; Bunderson & Reagans, 2011; DeWall, Baumeister, Mead, & Vohs, 2011). Power implies influence over another person or group of persons in the context of social interaction, i.e., it depends on the individual's social position as well as their "personal sense of power," their perception or belief in their ability to influence others (Anderson et al., 2012, p. 316). As outlined in Hinkin and Schriesheim (1989), relationships have five sources or bases for power, described originally by French and Raven's (1959) typology: Reward power (power holder can dispense rewards), coercive power (power holder can dispense punishment), legitimate power (power holder can direct behavior and feelings of

responsibilities), referent power (power holder can instill feelings of what is personally acceptable), and expert power (power holder has specific knowledge or expertise). This study uses Hinkin and Schriesheim's (1989) bases of power scales to measure supervisor-subordinate power difference.

Managers have either a personal or institutional orientation towards the use of power (McClelland, 1975). Those with a personal power orientation emphasize self-advancement, prestige, domination, and control, as opposed to those oriented toward institutional power, who are concerned with promoting collective needs and goals (Bunderson & Reagans, 2011; McClelland, 1975). McClelland and Burnham (1995) submit that morale is highest for subordinates who work for managers that have a strong power motivation (a leadership motivation) as opposed to those who work for managers that need to be liked (an affiliation motivation). Still, the best managers are those with high power motivation and an institutional orientation towards power (McClelland & Burnham 1995). Bunderson and Reagans (2011) suggest that a collective (socialized) orientation towards power can transform (positively moderate) the negative effects of hierarchy on goal orientation, risk-taking through experimentation, and knowledge transfer. Manager motivational orientation also influences subordinate perception of innovative climate (Frischer, 1993). Frischer (1993) measured manager motivational patterns and subordinate innovative climate and found that managers with a leadership motivation were more effective than those with an affiliation motivation in creating a climate that supports innovation (Frischer, 1993). In short, difference in power appear to have a material effect on employee perception of the organizational climate, with consequences for creativity and innovativeness.

Power differences in organizations are believed to affect goal orientation, because lower-power individuals are less able to regulate their behavior to focus on important tasks that lead towards achieving goals, i.e., they are more preoccupied with outcomes and with the opinions and behaviors of the powerful (Guinote, 2007; Overbeck & Park, 2006). Moreover, power differences hinder open communication and exchange of information as valuable or unique information is withheld by lower-ranking members to extract political advantage (Wittenbaum, Hollingshead, & Botero, 2004).

Power differences may create an environment where lower-ranking individuals do not feel comfortable making mistakes, stay away from novel ideas or procedures, avoid engaging in honest self-reflection and evaluation, and feel unsafe experimenting with unproven approaches (Anderson & West, 1998; Brooks, 1994; Bunderson & Baumgarden, 2010; Edmondson, 1999). A lower-ranking individual's diminished feeling of safety comes about because of their dependence on others higher up in the hierarchy for valuable resources, including information, budget authorization, respect, and approval (Bunderson & Reagans, 2011).

Status

Djurdjevic, Stoverink, Klotz, Koopman, da Motta Veiga, Yam, & Chiang (2017) define workplace status "as an employee's relative standing in an organization, as characterized by the respect, prominence, and prestige he or she possesses in the eyes of other organizational members" (p. 1125). Status, therefore, is subjective and socially derived, based on coworker assessment of the respect, prominence, and prestige that the employee deserves (Djurdjevic et al., 2017). Individuals who possess or have more of

specific attributes admired by the social group, whether ascribed (e.g., age, gender, ethnicity) or achieved (e.g., experience, education, organizational position, wealth), rank higher in social status when compared to those who possess none or less (Djurdjevic et al., 2017; Flynn, Reagans, Amanatullah, & Ames, 2006; Nembhard & Edmonson, 2006; Thye, Willer, & Markovsky, 2006). When making group decisions, higher status members are more persuasive as their opinions carry greater weight and credibility (Flynn et al., 2006).

Research suggests that helping in groups may have more to do with status differences than with differences in actual knowledge or expertise (Bunderson & Reagans, 2011). Helping may enhance an individual's status more if directed towards higher status group members than if directed towards lower status members (Van der Vegt, Bunderson, & Oosterhof, 2006). Lin, Ensel, & Vaughn (1981) found that the status of an applicant's job contact was a prominent factor in determining the status and prestige of their first and their existing jobs. This also suggests employees may do well spending more time with higher status colleagues (Bunderson & Reagans, 2011).

Nembhard and Edmonson (2006) describe that at work, those who enjoy higher status are more frequently asked for their opinion and thus, offer their point of view freely and often. Lower status individuals perceive greater interpersonal risk from self-expression (e.g., disapproval or other negative consequences, such as undesirable work assignments) and fail to make their opinions known (Nembhard & Edmonson, 2006). Nembhard and Edmonson (2006) further explain that employee awareness and perception of the organization's status differences generates feelings of inferiority among lower status individuals with respect to those with higher status. Accordingly, lower status

individuals communicate less, minimize the value of their contributions, refrain from sharing information, and defer decision authority to higher status individuals. As a result, and to the detriment of work group innovation, teams fail to recognize valid contributions and expertise from lower status or minority members (Nembhard & Edmonson, 2006).

Power, Status, and Regulatory Focus

Subordinate conduct in organizations with greater power and status differences (i.e., organizations with steeper as opposed to flatter hierarchies) will undoubtedly be more susceptible to supervisory behavior and practices. Manager expectations of their subordinates may shape behavior by motivating specific actions over others, including the Pygmalion effect, where higher expectations lead to improved performance (Eden, 1984). Moreover, manager expectations of subordinate innovative behavior are perceived by subordinates as representative of the organization's overall support (or neglect) for innovation (Scott & Bruce, 1994). With regards to motivation, supervisor feedback may temporarily prompt a promotion or prevention focus, which can alter motivation to perform a task (Crowe & Higgins, 1997; Johnson et al., 2015). Furthermore, even though individuals are predisposed towards either a promotion or prevention focus, the way tasks and incentives are presented can temporarily induce a state of eagerness or vigilance (Crowe & Higgins, 1997).

Contextual factors are also important and may obligate an individual to change their preferred orientation temporarily, for example, a supervisor's request for greater profitability will lead to risk-taking behavior by all subordinates (a promotion tactic), including those with a prevention focus (Fay, Urbach, & Scheithauer, 2019; Johnson et

al., 2015). Regulatory fit refers to the alignment of an individual's tactical (and strategic) regulatory focus with their chronic regulatory focus (Higgins, 2000; Spiegel, Grant-Pillow, & Higgins, 2004). Alignment generates greater motivation and effort in individuals, i.e., both promotion focus and prevention focus can be used to achieve goals, but individuals will pursue them more assertively when executed in the focus that fits their regulatory preference (Crowe & Higgins, 1997).

Collective regulatory focus (CRF) refers to the process by which teams self-regulate to pursue team goals (Johnson et al., 2015; Johnson and Wallace, 2011). An organization's overall context (e.g., one that values and demands accomplishments and advancement or one that values and demands duties and responsibilities) is likely to be driven by those in positions of power and those with high status. A misalignment between a team's CRF and the organizational context or between team CRF and individual member's chronic regulatory focus, may lead to decreased collective or individual member motivation, diminished effort, and conflict within the team (Johnson et al., 2015).

Open and free exchange of ideas between team members from diverse disciplines or varied functional expertise fosters creativity and innovation (Monge, Cozzens, & Contractor, 1992; Olson et al., 2001; Tjosvold & McNeely, 1988). Additionally, interaction across organizational units, and access to information from sources outside the team, widens the range of potential idea generation (Katz & Tushman, 1979). Power and status differences, however, may impede this intra and inter-team exchange and interaction. For example, as described, lower-ranking individuals are less inclined to share information without a political incentive. Furthermore, the contributions of lower

ranking members are considered less valuable or may be overlooked entirely (Bunderson & Reagans, 2011).

Therefore, the behavior and decisions of those with organizational power or status are expected to influence creativity and innovation through their effect on subordinate motivation, communication, collaboration, goal orientation, and perception of the level of organizational support.

The I-P-O Framework: Identifying Antecedent Variables

This study uses Cohen and Bailey's (1997) definition of teams as "a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems (for example, business unit), and who manage their relationships across organizational boundaries" (p. 240). The research literature describes several types of teams, whose name varies depending on the typology used (Cohen & Bailey, 1997; Sundstrom, DeMeuse, & Futrell, 1990). Work teams (also referred to as production or service teams) refer to well-defined, stable, full-time work units and are found in manufacturing and service organizations. Work and tasks (who does what and how) may be directed by supervisors or may be managed by team members themselves (self-directed or autonomous teams). Project and development teams come together for individual outcomes and typically involve members with expertise in varied disciplines. Parallel or advice teams refers to task forces or quality circles that exist in parallel to the organization and are formed to make recommendations to senior managers. Management teams, including top management teams (TMTs), direct and coordinate units based on

their position within the organization's hierarchy. This study does not exclude survey participants based on team orientation but expects to draw most of its responses from individuals participating in work teams and project and development teams.

The input-process-output (I-P-O) design has served as a useful framework for analyzing work-team outcomes (Anderson & West, 1998; Hackman, 1987; Hulsheger et al., 2009), whereby individual, team, and organizational characteristics are mediated by team processes (interactions) to generate results (goal accomplishment). Researchers have highlighted the approach's limitations in addressing dynamic complexities of internal and external team interaction in the context of team effectiveness (Ilgen, et al 2005; LePine et al., 2008; McGrath, Arrow, & Berdahl, 2000). Two of the most cited shortcomings are its inability to incorporate feedback loops (McGrath et al., 2000) due to its linear input-to-process-to-output framework and the misspecification of certain mediating variables as processes instead of inputs (Marks et al., 2001).

Cohen and Bailey (1997) compare findings of 54 research studies on teams, focusing on four categories of antecedent factors (design, environmental, psychosocial, processes), and analyzing outcomes by type of team (work, parallel, project, management). They put forward a framework that departs from I-P-O, wherein team characteristics and member traits (individual and social or psychosocial) can influence processes that translate into outcomes but can also directly affect outcomes. Processes also may become ingrained in traits, generating a feedback loop between psychosocial traits and processes. Specifically, Cohen and Bailey's (1997) framework for investigating team effectiveness suggests that design factors (team autonomy, level of member participation, size of team and tenure, goal interdependence) influence outcomes

(performance, job satisfaction, absenteeism, turnover) directly but also indirectly through psychosocial traits (cohesiveness, group affect, group norms) and through internal and external processes (task and relationship conflict). Moreover, psychosocial traits also influence outcomes directly and indirectly through their interaction with internal and external processes. Finally, environmental factors (industry characteristics such as pace of innovation or stage of development) directly influence design factors (Cohen and Bailey, 1997).

Marks et al. (2001) introduce a recurring phase model within the I-P-O framework that identifies ten dimensions within distinguishable periods of time or episodes. Each episode is defined by a goal that is related to a particular action phase (accomplishment of a direct goal) or a transition phase (reflection of past performance or planning for future action). The researchers define process as how team members interact with each other and their environment to use the available resources in directing taskwork towards the attainment of specific goals. "Taskwork represents *what* it is that teams are doing, whereas teamwork describes *how* they are doing it with each other" (Marks et al., 2001, p. 357). Team member characteristics that are influenced by the team context (attitudes, values, cognitions, and motivations) are described by Marks et al. (2001) as emergent states to differentiate them from team interactions (processes) and from more enduring individual member traits. Emergent states (e.g., team cohesion, situational awareness) are dynamic, vary as a function of the context (e.g., type of team), and serve as inputs for the execution of team processes and taskwork (Marks et al., 2001). In other words, emergent states serve as inputs that influence processes, the interdependent team activities that orchestrate taskwork in pursuit of goals. Marks et al.'s (2001) ten different

process dimensions are categorized based on their prevalence within each phase, transition or action, in addition to interpersonal processes, which are prevalent during both transition and action phases (e.g., conflict management). The recurring phase model was evaluated by LePine and colleagues (2008) in a meta-analysis using one hundred and thirty-eight studies of team processes. The data fit Marks et al.'s (2001) model with the ten processes loading onto the three superordinate phases, transition, action, and interpersonal (LePine et al., 2008).

Ilgen et al. (2005) proposed an alternative model to I-P-O, the IMOI, which substitutes process (P) for a general mediator variable (M) and adds input at the end (I) to incorporate possible causal feedback. IMOI incorporates temporal features to the process dimensions by describing a team's lifecycle from team development or the "formation stage" to the "functioning stage," wherein team members develop experience working together, and finally the "finishing stage" where an episode (goal) is completed and another one is initiated (Ilgen et al., 2005, p. 521). Mediators within each stage are further divided as either affective, behavioral, or cognitive.

The initial or formation stage of teamwork is referred to as the input-mediator phase and is characterized by three elements, trusting, planning, and structuring (Chan, 2009). Trusting is defined by potency and safety (affective mediators). Potency emerges from the collective belief of the team's competence and is positively related to team performance (Campion, Papper, & Medsker, 1996; Guzzo, Yost, Campbell, & Shea, 1993). Safety emerges from the collective belief about member's intentions or interpersonal trust that leads to effective teamwork (Jones & George, 1998). Moreover,

when team members feel “psychological safety” they can take risks that lead to learning and improved performance (Edmonson, 1999, p. 354).

Planning, comprised of behavioral mediators, refers to information gathering and the evaluation of that information to formulate a strategy for goal accomplishment (Ilgen et al., 2005). Information gathering describes three components of seeking, sharing, and communicating information. Functional diversity helps promote information exchange (Drach-Zahavy & Somech, 2001). Teams with well-developed strategies communicate better and achieve more (Stout, Cannon-Bowers, Salas, & Milanovich, 1999). The structuring component refers to shared mental models and transactive memory. Shared mental models describes the cumulative knowledge that team members hold in common (Mohammed & Dumville, 2001). Transactive memory is the collective understanding by team members of who knows what (Austin, 2003). Shared mental models and transactive memory are associated with higher team performance (Lewis, 2003; Marks, Sabella, Burke, & Zaccaro, 2002).

The functioning stage, described as the mediator-output phase, occurs when team members have become more familiar collaborating and is described by bonding, adapting, and learning (Chan, 2009). Bonding (affective) takes time to develop and commonly does not appear in the formation stage (Ilgen et al, 2005). It is expressed in team cohesion (rapport and desire to stay together), team member attraction, and team member satisfaction, which are believed to lead to lower absenteeism and turnover (Beal, Cohen, Burke, & McLendon, 2003; Bishop & Scott, 2000).

Research has found differences in team attraction, conflict, and satisfaction outcomes based on diversity of race or ethnicity (Pelled, Eisenhardt, & Xin, 1999; Riordan & Shore, 1997), personality traits (Barrick, Stewart, Neubert, & Mount, 1998), attitudes and values (Harrison, Price, & Bell, 1998), task routineness (Jehn, 1995), and work location, i.e., whether team members meet virtually or face-to-face (Baltes, Dickson, Sherman, Bauer, & LaGanke, 2002). At the team level of analysis, member age, gender, and ethnic diversity may manifest itself through a wider range of perspectives that generate more creative and innovative outcomes (Polzer, Milton, & Swarm, 2002). Conversely, demographic diversity may lead to negative attitudes and behaviors and decreased productivity due to lower member self-identity, attraction, and perceived opportunities for advancement (Riordan & Shore, 1997). Moreover, high or low levels of team heterogeneity promote bonding, not an intermediate level, which leads to divisive subgroups or cliques (Earley & Mosakowski, 2000; Polzer et al., 2002) and "communication impedence," i.e., communication opposition or resistance (Kratzer, Leenders, & Van Engelen, 2004, p. 65). Heterogenous teams can produce the most creative and innovative ideas, but membership diversity and conflict must be managed, or it may lead to withdrawal and even destructive behaviors (Duffy, Shaw, & Stark, 2000; Robinson & O'Leary-Kelly,1998). In short, diversity is multifaceted, with interaction effects also influencing outcomes (Ilgen et al, 2005).

Adapting (behavioral) refers to a team's ability to recognize the need for change. Teams with higher cognitive ability and openness to new experiences can function better in creative environments (LePine, 2003). Familiarity (team experience working together) and number of interruptions has been shown to affect a team's ability to adapt

(Okhuysen, 2001; Okhuysen & Waller 2002). In addition, the degree to which team members support each other and act as backups may lead to positive outcomes but is sensitive to differences in team member's level of cognitive ability and whether help is being sought for lack of ability or lack of effort, i.e., shirking (Barrick et al., 1998; LePine, Hollenbeck, Ilgen, Colquitt, & Ellis, 2002; Podsakoff, Ahearne, & MacKenzie, 1997).

Learning (cognitive) is considered a precursor to adaptability and consists of learning from minority and dissenting team members and learning from the team's most knowledgeable members. Teams that develop ways to integrate diverse and dissenting views tend to perform better (Ellis, Hollenbeck, Ilgen, Porter, West, & Moon, 2003; Ng & Van Dyne, 2001; Wittenbaum, Hubbell, & Zuckerman, 1999). Similarly, teams are more successful and individual members grow professionally when they can extract and incorporate the input of the most knowledgeable team members, especially when task difficulty is high (Bonner, Baumann, & Dalal, 2002; Littlepage, Robison, & Reddington, 1997).

Lastly, the finishing stage refers to the dissolution of the team, which may occur naturally if the expected goal is achieved, or otherwise if the group disbands due to personal conflicts or other circumstances (Ilgen et al., 2005). Stage models usually incorporate a finishing stage. For example, Marks et al.'s (2001) action phases may be punctuated by a clear ending, e.g., bank marketing team launches a new credit card. Transition phases also incorporate an end, e.g., consensus reached on strategy at the end of a corporate retreat. Notwithstanding, according to Ilgen et al. (2005), the finishing

stage of teams had received the least research attention and more work on the subject was merited.

In a meta-analysis of 104 research studies on team innovation published in the preceding thirty years, using constructs defined in previous I-P-O literature, Hulsheger and colleagues (2009) examined the correlation with innovation of several input and process variables. In similar fashion to West and Anderson (1996), the *direct* effect on innovation of each input and process variable was evaluated (all as predictors). The authors did not follow Marks et al.'s (2001) process classification, specifically with regards to their use of goal interdependence as an input variable and cohesion as a process variable. Hulsheger et al. (2009) tested team size, team longevity, job-relevant diversity, background diversity, task interdependence, and goal interdependence, as input variables. For each variable, correlation coefficients (ρ), 80% credibility intervals (CV), and 95% confidence intervals (CI) were reported. Hulsheger et al. (2009) use credibility intervals to indicate whether the correlation values are generalizable or situation specific, i.e., an observed correlation value has an 80% chance of falling within a fixed interval.

Creative thought and the implementation of creative ideas requires diverse skills, knowledge, and expertise for the completion of complex and sometimes uncertain, vaguely defined tasks (Hulsheger et al., 2009; Stewart, 2006). Larger as opposed to smaller teams may have a sufficiently wide array of requisite member attributes for more prolific idea generation (Bouchard & Hare, 1970; Gallupe, Dennis, Cooper, Valacich, Bastianutti, & Nunamaker, 1992), which may lead to greater innovation (Hulsheger et al., 2009).

Job relevant diversity *(*education, profession, expertise), as opposed to background diversity (age, gender, ethnicity), is believed to positively influence creativity and innovation (Pelled et al., 1999; Shalley & Gilson, 2004; West 2002; West & Anderson, 1996) because teams comprised of members with training, knowledge, and expertise in diverse areas are able to undertake the complex tasks involved in the generation of novel products, services, and procedures (Hulsheger et al., 2009). Moreover, team exposure to a diverse range of perspectives stimulates cognitive processes related to creativity (Perry-Smith, 2006). Functional heterogeneity may reduce personal conflict in teams because individual member success generates less perceptions of competitiveness (Pelled et al., 1999; Somech, 2006). Also, diversity of team member functional background facilitates interaction with individuals outside the immediate team, which broadens the team's perspective and leads to additional insights (Perry-Smith & Shalley, 2003). However, wide functional diversity may lead to miscommunication and difficulties in establishing a collective understanding of challenges and how to best confront them, i.e., diversity may have positive effects up to a certain point (Golden & Zajac, 2001). Conversely, background diversity may lead to communication problems, difficulties in assimilating divergent viewpoints, lack of consensus, greater turnover, and even intragroup emotional conflicts, all believed to interfere with creativity and innovation (Pelled et al., 1999; Van de Vegt & Janssen, 2003).

Finally, goal interdependence refers to the extent to which the achievement of each individual team member's goals depends on goal achievement by the other members (Campion, Medsker, & Higgs, 1993; Saavedra, Earley, & Van Dyne, 1993). Interdependence creates a climate where membership diversity and dissenting opinions

are accepted because it can lead to more productive team outcomes (Sethi & Nicholson, 2001).

Hulsheger and colleagues (2009) found that all input variables had correlation coefficients with signs that corresponded to their hypotheses. Team size [r = .158; 80% CV $(-.101, .444)$; 95% CI $(.078, .266)$] and job-relevant diversity [r = .139; 80% CV $(-.220, .530)$; 95% CI $(.004, .306)$] exhibited small correlation values and confidence intervals (not credibility intervals) that did not include zero. Goal interdependence showed the largest correlation value, with credibility and confidence intervals that did not include zero [r = .208; 80% CV (0.70, .482); 95% CI (.118, .434)]. The remaining input variables had correlation coefficients with absolute values less than 0.15 and both credibility and confidence intervals that included zero (Hulsheger et al., 2009).

For process variables, Hulsheger et al. (2009) assessed vision, task and relationship conflict, participative safety, cohesion, support for innovation, internal and external communication, and task orientation.

Vision or "clarity of group objectives" (West & Anderson, 1996, p. 681) refers to team members' understanding of objectives and their commitment to achieving these. Clear goals elucidate tasks, create a shared sense of purpose and meaning, and concentrate team member energy, all conducive to innovative thinking (Anderson & West, 1998).

Communication is critical for group plan formulation and execution, serving as the foundation for team member monitoring and backup behavior, including feedback for

encouragement, trust building, and correction of mistakes (Burke, Stagl, Salas, Pierce, & Kendall, 2006). External communication or interaction with individuals outside of the immediate team provokes the exchange of diverse ideas, engages multiple perspectives, and leads to discussion of novel ways to accomplish tasks, all believed to be related to innovation (Ancona & Caldwell, 1992a, Ancona & Caldwell, 1992b; Andrews & Smith, 1996; Keller, 2001).

Innovation is thought to be supported in organizations that promote psychological safety, tolerate risk taking, motivate new idea generation, and encourage creative thinking (Amabile et al., 1996; Madjar, Oldham, & Pratt, 2002; West 1990). Employees are more likely to take measured risks and challenging assignments in organizations that value and support innovative approaches to problem solving (Jung, Chow, & Wu, 2003). West and Anderson (1996) found support for innovation as the principal predictor of innovation in a study of management teams in U.K. hospitals.

Task orientation (reflexivity) is described by West (1990) as a "shared concern for excellence of quality in task performance in relation to shared outcomes" (p. 313). Task orientation is equivalent to intrinsic motivation, believed to be a prerequisite for individual creativity (Amabile & Conti, 1999; Shalley & Perry-Smith, 2001). The task undertaken is fundamental in defining a work group's requirements, structure, roles, orientation, interaction, and cooperation (West 2002). Outcomes, including innovation, will depend on a work team's ability to coordinate between the idiosyncratic demands of the specific task and the "human demands of the social system" (West, 2002, p. 360). Teams with high task orientation share a desire to attain the highest level of quality performance and are constantly engaged in reflection to judiciously evaluate strategy,

procedures, and individual performance. Reflexive teams actively explore diverse opinions and ways of doing things. They monitor performance and provide feedback, which facilitate adaptation and therefore, the execution of plans. As described, according to Marks et al.'s (2001) framework for analyzing team processes, transition phases are characterized by reflexivity, whereby teams evaluate past performance and plan for future action.

Internal communication allows information and ideas to be shared among team members. Complex problem solving requires open and fluid communication to ensure knowledge and expertise are exchanged and discussed (Keller, 2001). Innovative ideas are more easily generated through open, purposeful, and collaborative team member communication (Van de Ven, 1986). However, frequent communication (more than a minimum of one to three times per week) may lead to outcomes that deteriorate creativity and innovation, such as free riding (letting others in the group be creative) and groupthink (Kratzer et al., 2004).

As mentioned, cohesion refers to a team members' commitment to their work group and a desire to maintain team membership (Hulsheger et al., 2009; Marks et al., 2001). Personal attraction creates a psychologically safe environment that motivates team member cooperation and new idea sharing and exploration (Woodman et al., 1993). Members feel supported by others in the group and are, therefore, willing to take risks and actively challenge the status quo (West & Wallace, 1991).

Process variables exhibited stronger correlations with innovation than input variables, with the exception of task conflict [r = .055; 80% CV (-.394, .527); 95% CI

(134, .268)], relationship conflict [r = -.073; 80% CV (-.325,.141); 95% CI (-.252, .068)], and participative safety [r = .119; 80% CV (-.113, .410); 95% CI (0.80, .216)]. Vision, external communication, support for innovation, and task orientation exhibited the highest correlations with innovation, followed by internal communication and cohesion (Hulsheger et al, 2009).

Level of Analysis

Research has explored innovation from the individual, the team, and the organizational measurement level. In general, research in psychology has focused on individual factors that influence creativity and innovation, whereas sociology has focused on the influence of environmental factors surrounding the individual (Pirola-Merlo & Mann, 2004). As indicated, level of analysis has particular significance in the study of innovation as contradictory findings may be revealed depending on the level at which a variable is analyzed. Mumford and Hunter (2005) point out that "unlike other phenomena in the social sciences, the variables operating across levels to shape innovation do not appear to be well integrated" (Mumford & Hunter, 2005, p. 14).

Hulsheger et al. (2009) indicate that individual measurement level focuses on individual employee's innovativeness, assessed by self-ratings (Axtell, et al., 2000; Miron, Erez, & Naveh, 2004) or peer and supervisor ratings (Shin & Zhou, 2003). In addition, employee contribution to innovation is measured objectively using the number of creative solutions reported by an individual on a questionnaire during an experiment (Shalley, 1995), the number of patent disclosures written, or contributions to employee suggestion programs (Oldham & Cummings, 1996). Similarly, team innovation has been

measured objectively by the number of suggestions, new projects, new products, or patents generated by a workgroup (Cardinal, 2001; Somech & Drach-Zahavy, 2007; West & Anderson, 1996), and by team creative performance or team innovative behavior assessed subjectively by self or supervisor ratings (Kratzer et al., 2004; Le Blanc et al., 2021).

Measurement level pertains to antecedents (predictors) and outcomes. To assess individual level phenomena, member survey responses have been used to link individual antecedent variables (e.g., cognitive ability, self-regulatory focus) to individual creative or innovative behavior (Neubert et al., 2008). To evaluate innovation at the team level using survey responses from individuals, researchers have depended on (a) individual team member ratings of individual characteristics, which are subsequently aggregated to generate team scores (e.g., individual creativity; Pirola-Merlo & Mann, 2004, and learning behavior; Walter & Van der Vegt, 2013); (b) individual team member and/or supervisor ratings of group level characteristics, which are averaged to obtain a group score (e.g., Campion et al., 1996; De Dreu, 2002; De Dreu & West, 2001; Desivilya, Somech, & Lidgoster, 2010; Drach-Zahavy & Somech, 2001; González-Romá, Fortes-Ferreira, & Peiró, 2009; Hurley & Hult, 1998; Kratzer et al., 2004; Timmermans, Van Linge, Van Petegem, Van Rompaey, & Denekens, 2013; Van Woerkom & Croon, 2009; Wallace et al., 2016); and (c) facilitation of member discussion to enable consensus team ratings (Kirkman & Rosen, 1999). Aggregation of individual scores is usually justified because (a) groups are established in their natural setting; (b) within-group homogeneity is sufficiently confirmed, i.e., interrater agreement score, r_{wg} (James, Demaree, & Wolf, 1993); and (c) between group heterogeneity is also sufficiently confirmed, i.e., intraclass

correlation coefficient, ICC (James, 1982). Importantly, while evaluating team creative performance, Kratzer et al. (2004) found that self-report measures of creative performance were statistically as accurate as manager ratings.

Other studies, including this one, rely on individual perception measures of group and organizational level input and process variables to assess their impact on individual innovativeness (Axtell et al., 2000; Farmer, Tierney, & Kung-McIntyre, 2003; Scott & Bruce, 1994; Van der Vegt & Janssen, 2003). To validate results and reduce common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), past research studies measured individual level innovation outcomes using data obtained from surveys distributed to team supervisors or through objective measures when available. However, three studies were found that use team member self-responses to evaluate individual level innovation outcome variables:

1. Neubert et al. (2008) modified Scott and Bruce's (1994) innovative behavior six-item scale to measure team member creative behavior through individual self-reports.
2. Using team member responses to Anderson and West's (1994) Team Climate Inventory scale, Bain and colleagues (2001) found small but significant effects on self-reported ratings of individual innovativeness in R&D project teams, specifically scores for the antecedent variables support for innovation, vision, and task orientation.
3. Axtell and colleagues (2000) analyzed individual team member responses to survey questions that evaluated proposed number of suggestions and their implementation (two dependent innovation variables).

Hulsheger et al.'s (2009) team innovation meta-analysis investigated measurement level of analysis (individual level and team level) and measurement method (self-reported, peer, supervisor ratings, or objective measures) as moderators for the relationship between team input or process variables and innovation. Correlations with innovation were considerably stronger when measured at the team level as opposed to individual level, and confidence intervals did not overlap for process variables vision [r (team = .377; 95% CI (.265, .605) vs $r\ (ind) = .131;\ 95\%\ CI\ (.020, .280)$], support for innovation [r (team) = .488; $95\%\ CI\ (.477, .685)$ vs $r\ (ind) = .219$; 95% CI (.185, .337)], and task orientation [r (team) = .382; 95% CI (.289, .617) vs $r\ (ind) = .055$; 95% CI (-.067, .201)]. For cohesion [r (team) = .208; 95% CI (.129, .371) vs r (ind) = .266; 95% CI (.186, .476)], internal communication [r (team) = .264; 95% CI (.160, .494) vs r (ind) = .300; $95\%\ CI\ (.251,\ 487)$], and external communication [r (team) = .351; 95% CI (.310, .590) vs r (ind) = .336; 95% CI (.217, .619)], smaller differences were observed between correlations measured at the team or individual level, and confidence intervals overlapped appreciably (Hulsheger et al., 2009). Differentiation between team and individual level of analysis for input variables was only possible for team size due to the small number or primary studies (Hulsheger et al., 2009). Team size correlation with innovation was positive (r = .228) when measured at the team level but negative when measured at the individual level ($r = -.095$).

Measurement method also moderated the relationship between input or process variables and innovation (Hulsheger et al., 2009). As expected by these same researchers, in general, self-reported measures reflected stronger correlations than ratings by supervisors, peers, or subject matter experts, except for support for innovation. Some

studies produced objective measures (e.g., number of new products or patents) and these correlations with innovation were also lower than those from self-ratings (Table 1).

Table 1

Correlation with Innovation by Measurement Method

	Correlation (r)		Correlation (r)
Support for Innovation:		*Task Orientation:*	
Self-rating	.385	Self-rating	.403
Independent rating	.396	Independent rating	.354
Objective measure	.343	Objective measure	.268
External Communication:		*Cohesion:*	
Self-rating	.460	Self-rating	.460
Independent rating	.289	Independent rating	.157
Internal Communication:		*Team Size:*	
Self -rating	.517	Self-rating	-.016
Independent rating	.210	Independent rating	.208
Vision:		*Job-relevant Diversity:*	
Self-rating	.451	Self-rating	-.009
Independent rating	.323	Independent rating	.140
Objective measure	.170		

Note: Adapted from Tables 1 & 2, Hulsheger et al. (2009), p 1134-1135

This study incorporates findings from the aforementioned models, reviews, and meta-analyses, to specify individual, team and organizational antecedents and moderators of individual innovative behavior, measured using team member self-responses (individual level of analysis; self-ratings), within the context of U.S. service-oriented, for-profit organizations.

Chapter 3

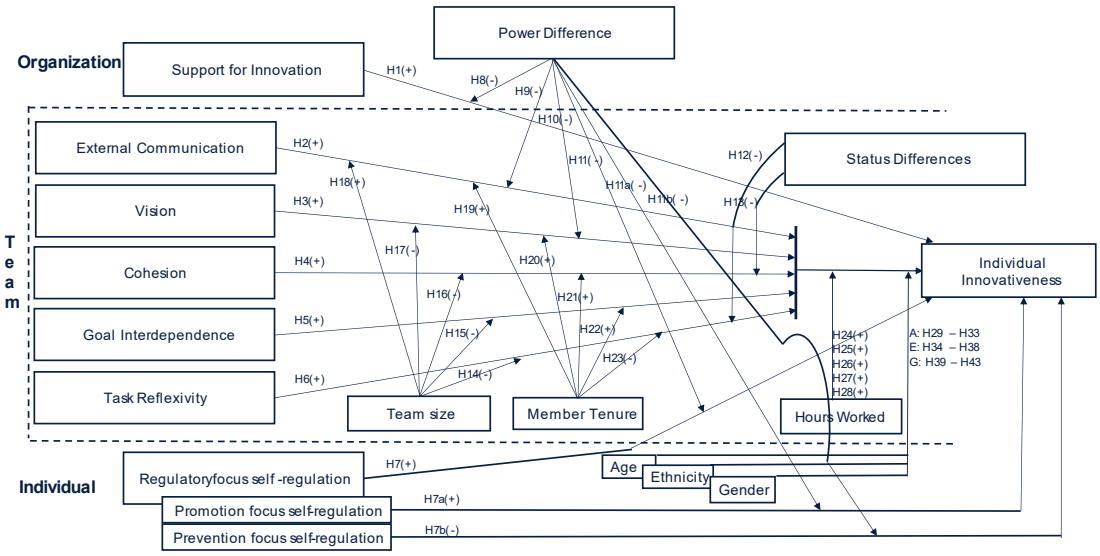
RESEARCH MODEL AND HYPOTHESES

The research model in Figure 1, divides variables based on their relevance or position (individual, team, and organization). The model's independent variables are expected to have a significant positive direct relationship with innovativeness, except for prevention focus self-regulation, which is expected to lead to behaviors that inhibit innovativeness. Supervisor-subordinate power difference, team status differences, and demographic characteristics (team and individual member) function as moderators. Appendix A summarizes the model's key constructs, latent variables, and their definitions.

Research Model

Figure 1

Research Model



Hypotheses

Organizations that expect its members to think creatively and demonstrate practical support for the implementation of non-routine problem-solving approaches, are likely to become innovative (Amabile, 1988). When managers, supervisors, and coworkers are committed to change and tolerate mistakes, individuals feel comfortable experimenting and making unusual recommendations (Hulsheger et al., 2009; Sethi & Nicholson, 2001). Therefore, innovation is more likely to manifest itself within an organizational context that promotes unique idea generation and provides practical support for their execution.

Managers find greater creative performance in employees that receive explicit work support for creativity (Madjar et al., 2002). Innovation is supported by leaders who allow individuals and teams to explore their creative intuitions, without fear of negative consequences (Jung et al., 2003). Through example (role modeling), leaders can affect the organizational climate that supports innovation, including subordinate perceptions regarding the importance of collaboration, interaction with other groups, and commitment to the organization's mission (Mouly & Sankaran, 1999; Mumford & Hunter, 2005). Elkins and Keller (2003) document the research literature regarding strategies leaders have used to support innovation in work groups, including problem framing based on pertinent issues as opposed to desired outcomes, championing projects within the organization, encouraging discussion, which turn disagreements into opportunities for generating diverse ideas, and inspiring team members from different disciplines to work together.

Hypothesis 1: An increase in organizational support for innovation will increase individual innovativeness.

Communication and interaction with individuals outside a member's own team or organization enriches the available social network and, therefore, perspectives that may serve as a catalyst for creativity (Ancona & Caldwell, 1992a). External communication has been found to contribute positively to manager ratings of team performance with respect to budgeting, scheduling, creativity, and technical innovation (Ancona & Caldwell, 1992b; Keller, 2001). New perspectives, unusual problem-solving approaches, and novel ideas are revealed through interaction with people outside a team member's own group (Andrews & Smith, 1996).

Hypothesis 2: An increase in external communication will increase individual innovativeness.

Teams with a collective motivating force have a common objective and direction (a vision), which drives best practices towards goal attainment (Anderson & West, 1998). Organizational goal clarity enhances commitment and effort towards achieving goals. Teams are innovative when members share commitment towards achieving organizational goals, which are valued, and believed to be attainable (Anderson & West, 1998). Team focus and direction, established through clearly defined goals, increases the likelihood of successful outcomes and vision helps elucidate the steps required for team creative idea implementation within an organization (Somech & Drach-Zahavy, 2013).

Hypothesis 3: An increase in vision will increase individual innovativeness.

Environments where individuals are free to exchange ideas, make mistakes, and question existing ways of doing things, nurture innovation (Edmondson, 1999; Hulsheger et al., 2009). Cohesion refers to the affective connection that binds individuals in work teams, generates group pride and commitment, and facilitates creative interaction (Gilson & Shalley, 2004; Hulsheger et al., 2009). Cohesiveness nurtures trust, which generates a requisite level of acquaintance to promote open communication for expressing novel ideas and the information exchange that facilitates their development (Bouty, 2000; Mumford & Hunter, 2005). This promotes team member dedication and time spent on team initiatives, enhancing creative performance in new product teams (Cooper & Kleinschmidt, 2000). Thus, cohesion is expected to be positively related to creativity and innovation.

Hypothesis 4: An increase in cohesion will increase individual innovativeness.

Cooperative goals support team member collaboration, resulting in improved team performance, which benefits everyone (Tjosvold, Yu, & Hui, 2004). Goal interdependence impels team member interaction, communication, and cooperation (Bledow, Frese, Anderson, Erez, & Farr, 2009; Tjosvold et al., 2004; Van der Vegt & Janssen, 2003). Through effective negotiation and management of diverse opinions, goal interdependence stimulates the exchange of ideas and the integration of different and/or opposing points of view, expected to lead to more innovative, mutually agreed upon solutions that benefit the entire team (Hulsheger et al., 2009; Van der Vegt & Van der Vliert, 2002).

Sethi and Nicholson (2001) studied new product development in consumer product manufacturing firms and found that outcome interdependence in cross functional teams generated greater team drive to achieve superior products. They explain that when rewards are based on team outcomes, cooperation is fostered as members are accountable to their team, not just their individual functional area.

Hypothesis 5: An increase in goal interdependence will increase individual innovativeness.

West (1990) refers to a reflective team as one that collectively reflects upon team objectives, strategies, and processes. Reflexivity involves questioning, debating, exploring, scrutinizing, and assimilating new experiences (Somech, 2006; West, 1990). It is what allows teams to mutually assess and interpret a situation, consensually formulate a plan, conduct a strategy, and monitor tasks to adapt, correct mistakes quickly, and aid struggling group members (Burke et al., 2006). Deep contemplation and deliberation, associated with reflexivity, lead to greater idea generation and innovative thinking (Schippers, West, & Dawson, 2015; Tjosvold et al., 2004). Moreover, reflection improves a team's ability to evaluate ideas and focus on the most promising ones (Schippers et al., 2015). Teams that exhibit elevated levels of reflexivity are more innovative because they allow open discussion of dissenting opinions, which promotes divergent thinking and creativity (De Dreu, 2002). A related concept, information processing, has been found to be a significant predictor of team innovativeness. Information processing refers to how teams disseminate novel information internally and give it a shared interpretation through a process of dialogue and reflective communication (Gibson & Vermeulen, 2003; Van Woerkom & Croon, 2009).

Hypothesis 6: An increase in task reflexivity will increase individual innovativeness.

Lanaj and colleagues (2012) outline that regulatory focus self-regulation has been linked to differential work outcomes regarding task performance (carrying out daily work functions), organizational citizenship behaviors (going above and beyond delineated work responsibilities), counterproductive work behaviors (acts that harm the organization, such as theft), workplace safety behavior (following corporate safety policies), and innovativeness (creative idea generation). Promotion focus self-regulation is associated with aspirations and accomplishments as opposed to prevention focus self-regulation, associated with safety and fulfillment of duties through responsible behavior (Higgins, 1998). Individuals with a promotion focus strive towards accomplishment and achievement while those with a prevention focus, attempt to avoid negative outcomes by satisfying basic job requirements (Wallace et al., 2016).

Individuals with a promotion focus have an exploratory orientation, which generates opportunities for striving and rewards (Forster et al., 2003). They are open to the experimentation, risk taking, and ambiguity associated with creativity, characteristics that conflict with a prevention focus (Baer et al., 2003; Tierney et al.,1999). Past research has found evidence of a positive relationship between promotion focus, creativity, and innovation (Lanaj et al., 2012; Neubert et al., 2008). Relatedly, at the individual level, creativity has been linked to self-efficacy, i.e., confidence leads to greater self-initiative in task performance that improves the likelihood of successful task completion, which broadens an individual's role perspective and motivation for proposing change initiatives (Axtell et al., 2000; Parker, 1998).

Hypothesis 7: Regulatory focus self-regulation will increase individual innovativeness.

Hypothesis 7a: Promotion focus self-regulation will increase individual innovativeness.

Hypothesis 7b: Prevention focus self-regulation will decrease individual innovativeness.

Organizational power differences are expected to negatively moderate the direct effects of support for innovation, vision, and external communication because they inhibit experimentation, sharing of ideas, mutual support (unity), and open communication within the team and with outside groups.

Hypothesis 8: An increase in supervisor-subordinate power difference will decrease the relationship between organizational support for innovation and individual innovativeness.

Hypothesis 9: An increase in supervisor-subordinate power difference will decrease the relationship between external communication and individual innovativeness.

Hypothesis 10: An increase in supervisor-subordinate power difference will decrease the relationship between vision and individual innovativeness.

Work teams need motivation to carry out tasks, but motivation is insufficient to sustain the high effort required for goal-oriented outcomes, including innovation. In organizations, power is associated with positions of leadership or responsibility. Research

suggests that those with power are likely to feel more motivated than others and are willing to make personal sacrifices for the organization, which requires greater focus and self-regulation (DeWall et al., 2011). Self-regulation is necessary to overcome team member selfishness, preoccupations, and distractions related to organizational power differences (DeWall et al., 2011). Therefore, only those in positions of power exhibit greater goal orientation, are more persistent and adept at focusing their attention on tasks, feel more accountable to the organization, and seize opportunities more readily (DeWall et al., 2011; Guinote, 2007). In contrast, those without power find it harder to self-regulate their behavior to focus on goals and innovative behavior. Consequently, the greater the organizational power differences, the more difficult self-regulation becomes.

Hypothesis 11: An increase in supervisor-subordinate power difference will decrease the relationship between self-regulation and individual innovativeness.

Hypothesis 11a: An increase in supervisor-subordinate power difference will decrease the relationship between promotion focus self-regulation and individual innovativeness.

Hypothesis 11b: An increase in supervisor-subordinate power difference will decrease the relationship between prevention focus self-regulation and individual innovativeness.

Status impairs open communication and debate for fear by lower status members of repercussions (Nembhard & Edmonson, 2006). Team members may withhold knowledge and information, attempting to gain political advantage from higher status members (Bunderson & Reagans, 2011). Moreover, lower status members offer their

assistance more freely to higher status members (Van der Vegt et al., 2006). Research suggests that higher status member's contributions are more valued and those of lower status members are frequently ignored (Flynn et al., 2006). Thus, status differences affect team collaboration, reflection, and unity.

Hypothesis 12: An increase in team status differences will decrease the relationship between team task reflexivity and individual innovativeness.

Hypothesis 13: An increase in team status differences will decrease the relationship between team cohesion and individual innovativeness.

At the team level of analysis, research has described the multifaceted effects or degree of influence of group composition on team member attitudes and behaviors (e.g., Ancona & Caldwell, 1992a, 1992b; Cohen & Bailey, 1997; Drach-Zahavy & Somech, 2001; Kratzer et al., 2004; Okhuysesn, 2001; Pelled et al., 1999; Polzer et al., 2002; Riordan & Shore, 1997; Robinson & O'Leary-Kelly, 1998; West, 2002). Team size, team member tenure, time spent on team related tasks, as well as individual demographic characteristics (gender, age, ethnicity) have been examined in this context. At the individual level of analysis, this study will attempt to test for possible moderating effects of these variables on the relationship between team antecedent factors and individual innovativeness.

Larger as opposed to smaller teams are more likely to include sufficient diversity of skill, knowledge, and experience, enabling complex problem exploration and inspiring novel idea generation and implementation (Gallupe et al., 1992; Steck & Sundermann, 1978; Stewart, 2006). Team size has been found to increase formal communication

among top management team members, which is related to positive performance outcomes (Smith, Smith, Olian, Sims, O'Bannon, & Scully, 1994). Larger teams, however, are expected to have greater demographic and functional diversity, making it harder for members to work together, coordinate tasks, and engage in productive reflection to reach consensus with respect to goals and outcomes (Mumford & Hunter, 2005; Pelled et al., 1999; Van de Vegt & Janssen, 2003). Thus, after the minimum number of members required to perform a team's basic tasks has been incorporated, size will negatively influence the relationship between antecedent factors and innovativeness.

Hypothesis 14: An increase in team size will decrease the relationship between reflexivity and individual innovativeness.

Hypothesis 15: An increase in team size will decrease the relationship between goal interdependence and individual innovativeness.

Hypothesis 16: An increase in team size will decrease the relationship between cohesion and individual innovativeness.

Hypothesis 17: An increase in team size will decrease the relationship between vision and individual innovativeness.

Larger teams have more lines of communication to other areas of the organization and beyond, i.e., greater expected diversity with respect to job function and experience in larger as opposed to smaller teams, will augment the channels of communication available to all its members (Ancona & Caldwell, 1992a; Keller, 2001).

Hypothesis 18: An increase in team size will increase the relationship between external communication and individual innovativeness.

With time, team membership forges work bonds and ties, which facilitate team member interaction and trust (Okhuysen, 2001). Team members communicate with ease, understand each other's strengths, focus on problem resolution more quickly and thus, can define joint goals and strive towards their accomplishment (Eisenhardt & Schoonhoven, 1990). At the individual level, tenure builds member knowledge, both declarative ("what to do") and procedural ("how to do it"), essential requirements to perform tasks and achieve task-specific, team, and organizational goals (Gonzalez-Mulé, Cockburn, McCormick, & Zhao, 2020, p. 153). Moreover, individuals become progressively invested in the team and its success, consequently facing higher costs of leaving (Cohen, 1993; Ritzer & Trice, 1969). Tenured employees feel more secure and thus exhibit greater motivation, which leads to improved productivity (Gonzalez-Mulé, et al., 2020). Through seniority, members also develop more connections and expand their network of contacts (Cohen, 1993).

Hypothesis 19: An increase in a member's tenure in the team will increase the relationship between external communication and individual innovativeness.

Hypothesis 20: An increase in a member's tenure in the team will increase the relationship between vision and individual innovativeness.

Hypothesis 21: An increase in a member's tenure in the team will increase the relationship between cohesion and individual innovativeness.

Hypothesis 22: An increase in a member's tenure in the team will increase the relationship between goal interdependence and individual innovativeness.

Tenure, however, may lead to over confidence and groupthink (Coles, Daniel, & Naveen, 2020). Studies have shown that tenured executives may tend to view their past performance too favorably, making them more complacent and less amenable to change as they cling to outmoded strategies and approaches (Cohen & Bailey, 1997). Moreover, individual antisocial behavior (e.g., intentionally delivering mediocre work, verbally injuring coworkers) has been found to be influenced by the antisocial behavior of the groups to which they belong, with tenure strengthening this relationship (Robinson & O'Leary-Kelly, 1998). Strong member ties developed through tenure may also diminish constructive criticism and self-reflection. Thus, team member tenure is expected to weaken the relationship between task reflexivity and individual innovativeness.

Hypothesis 23: An increase in a member's tenure in the team will decrease the relationship between task reflexivity and individual innovativeness.

When increased communication frequency promotes the formation of sub-groups, group creativity may be adversely affected due to diminished individual member contribution (free riding), truncated information flow, other communication barriers, and reduced standards due to deficient critical self-evaluation and groupthink (Kratzer et al., 2004). However, spending more time working on team related tasks should help focus member attention on team business, commit them to its goals and outcomes, and incent them to develop productive working relationships with other group members. Thus, number of hours per week spent with the team will have a positive moderating effect.

Hypothesis 24: An increase in the time a member spends working with the team will increase the relationship between external communication and individual innovativeness.

Hypothesis 25: An increase in the time a member spends working with the team will increase the relationship between vision and individual innovativeness.

Hypothesis 26: An increase in the time a member spends working with the team will increase the relationship between cohesion and individual innovativeness.

Hypothesis 27: An increase in the time a member spends working with the team will increase the relationship between goal interdependence and individual innovativeness.

Hypothesis 28: An increase in the time a member spends working with the team will increase the relationship between task reflexivity and individual innovativeness.

Self-identity theory posits that work group demographic composition will influence an individual's attitudes because identity is partially determined by a person's group affiliation (Böhm, Rusch, & Baron, 2020; Harwood, 2020; Hornsey, 2008). Furthermore, proponents of self-categorization theory explain that individuals feel comfortable in groups that are composed of others with similar demographic characteristics (e.g., ethnicity, age, gender) and thus are likely to communicate more frequently with other group members and develop closer working relationships (Hornsey, 2008; Kaur & Ren, 2022; Tsui, Egan, & O'Reilly III, 1992). According to self-categorization theory, diversity impedes social integration in groups and negatively

sensitizes members to expressions of opposing ideas, which leads to conflict and reduced idea generation (Polzer et al., 2002). Thus, moderators are included in the model to incorporate group member demographic characteristics, specifically gender, ethnicity, and age.

Gender is not considered in isolation when evaluating career success—women do not compare themselves to other women exclusively based on gender—but is a trait identified by individuals to self-categorize, associate with others, and develop group connections (Pelled et al., 1999). Riordan and Shore (1997) found that ethnic similarity (not gender or age) had a significant effect on employee attitudes, specifically their commitment towards their work group, their evaluation of the group's productivity, and their perceptions of career advancement opportunities within the organization. Diversity in group member age may mitigate undesirable outcomes. Emotional conflict (rivalries) develops when individuals compare their career success to other group members of similar age but not with those who are older or younger, as professional achievements are expected over time (Pelled et al., 1999). On the other hand, individuals belonging to the same age cohort share similar life experiences and tend to communicate with ease frequently, which leads to cohesiveness and compatible attitudes, beliefs, and expectations about their organization (Wagner, Pfeffer, & O'Reilly III, 1984). This study does not measure team demographic differences, only self-reported, individual respondent demographic characteristics, which are evaluated to explore possible moderating effects on the predictor variables.

Hypothesis 29: Member age will moderate the relationship between external communication and individual innovativeness.

Hypothesis 30: Member age will moderate the relationship between vision and individual innovativeness.

Hypothesis 31: Member age will moderate the relationship between cohesion and individual innovativeness.

Hypothesis 32: Member age will moderate the relationship between goal interdependence and individual innovativeness.

Hypothesis 33: Member age will moderate the relationship between task reflexivity and individual innovativeness.

Hypothesis 34: Member ethnicity will moderate the relationship between external communication and individual innovativeness.

Hypothesis 35: Member ethnicity will moderate the relationship between vision and individual innovativeness.

Hypothesis 36: Member ethnicity will moderate the relationship between cohesion and individual innovativeness.

Hypothesis 37: Member ethnicity will moderate the relationship between goal interdependence and individual innovativeness.

Hypothesis 38: Member ethnicity will moderate the relationship between task reflexivity and individual innovativeness.

Hypothesis 39: Member gender will moderate the relationship between external communication and individual innovativeness.

Hypothesis 40: Member gender will moderate the relationship between vision and individual innovativeness.

Hypothesis 41: Member gender will moderate the relationship between cohesion and individual innovativeness.

Hypothesis 42: Member gender will moderate the relationship between goal interdependence and individual innovativeness.

Hypothesis 43: Member gender will moderate the relationship between task reflexivity and individual innovativeness.

Chapter 4

METHODOLOGY AND METHOD

This is a deductive, explanatory, observational (non-experimental), cross-sectional research study intended to answer the following research questions: What factors contribute to individual innovativeness in U.S. service sector, for-profit organizations? What moderating effects do power and status differences have on the relationship between individual innovativeness and its antecedent factors in U.S. service sector for-profit organizations?

Sample and procedure

The population of interest is composed of U.S. employees in service oriented, for-profit companies who work or have worked over the last year in at least one team. An anonymous quantitative data survey, based on validated scales found in the research literature (Appendix B), was conducted using an online survey provider (www.qualtrics.com). An initial informed pilot test of the survey was conducted using three fellow doctoral students to determine the feasibility for use in the study. The informed pilot established the viability of the research study, its constructs, variables, and hypotheses. However, no average time to completion was established. This was determined based on the examined research literature and other practitioner-based articles.

Afterwards, the survey was advertised on Amazon Mechanical Turk (AMT) for a preliminary pilot study of thirty-five respondents. Twenty-four responses were used in

the analysis based on a minimum time for survey completion of eight minutes.[1] Results of the pilot study appear in Appendix D.

AMT respondent qualifications for the pilot study and the final survey instrument were set as (a) last employment location was the U.S.; (b) a history of approved responses on previous surveys greater than ninety-eight percent; and (c) a minimum of fifty previous AMT postings. A link was provided at survey initiation to confirm whether the participant had, currently or within the last year, worked in a team of three or more individuals, worked in a for-profit organization, and worked in one of the industries found in the MSCI Global Industry Classification Standard ("GICS," MSCI, 2022). For the final survey, AMT Master Worker qualification was also required.[2] All participants that submitted valid surveys were compensated with a $4.50 credit to their Amazon account.

For the final survey, a total of one hundred and sixty-nine questionnaires were obtained. Nineteen were discarded as the surveys were completed in less than six minutes.[3] Three additional questionnaires were removed as they failed checks: One showed inconsistency in the two age-related demographic questions, one showed no variance in responses, and another failed reverse-coded question checks. For the

[1] Additional time was allowed for pilot study completion compared to the final survey because the questionnaire was slightly longer, and participant qualification requirement was less stringent.

[2] Amazon Mechanical Turk grants Master Worker qualification to those that have consistently completed a wide variety of questionnaires and is based on worker performance analysis using Amazon's own statistical models (https://www.mturk.com).

[3] For the final survey, a minimum of six minutes was chosen for Master Worker respondent completion time, assuming approximately twenty to twenty-five seconds to complete 15 consent, work, and demographic related questions, and four to four and a half seconds for each of the eighty survey item questions (Bassili & Fletcher, 1991; The Business Research Lab, 2018; Henning, 2021; Versta Research Inc., 2011; Yan & Tourangeau, 2008).

remaining one hundred forty seven questionnaires the following was observed: Mean and median time for completion were sixteen and eleven minutes, respectively; respondent birth year ranged between 1963 and 1996 (mean = 1982; median = 1984), and no member belonged to the 18-24 age group; ninety-two were male, fifty-two were female, two identified as non-binary/third gender, and one preferred not to say**;** ninety-nine were White, twenty Asian, thirteen Black/African American, twelve Hispanic or Latino, two American Indian or Alaskan Indian, one Native Hawaiian or Pacific Islander; ninety-nine spend more than 20 hours working with the team, eighteen spend 11-15 hours, sixteen spend 16-20 hours, twelve spend 5-10 hours, two spend 1-4 hours; sixty have worked in their teams for 1-3 years, forty-nine for 4-6 years, thirty-eight more than 6 years; fifty-eight work in teams of more than 7 members, fifty-four in teams of 5-7 members, thirty-five in teams of 3-4 members; thirty-nine work in Technology & Equipment, thirty-three in Operations, twenty-one in Management, eighteen in Sales, thirteen in Other, seven each in Marketing and Accounting, six in Finance, and three in Human Resources.

Measures

Scale items were chosen from validated survey instruments found in the research literature, filtered by level of analysis to ensure they could be assessed through self-report (Appendix B). For consistency and because of the cognitively demanding size of the survey, five-point Likert scales were used for all items (if different from the original scale, it is mentioned below).

Support for Innovation: The eight items were chosen from Scott and Bruce's (1994) scale, specifically those related to support for innovation or "the degree to which

individuals viewed the organization as open to change, supportive of new ideas from members, and tolerant of member diversity" (p. 592).

Vision: Eight items were taken from Anderson and West's (1998) Team Climate Inventory scale (TCI), which measure whether objectives are clearly understood, shared by members, believed to be attainable, and meaningful. The pilot study used a five-point unipolar scale, ranging from 1 (not at all) to 5 (completely). For the last version of the questionnaire, the scale was changed to 1 (barely or not at all) to 5 (very much) for consistency with scale items used for Task Reflexivity. The TCI uses a seven-point scale.

External communication: Items were chosen from three existing scales, specifically, the first four items pertain to group coordination with other teams (Denison, Hart, & Kahn, 1996), the next six items pertain to the type of external activity undertaken (Ancona & Caldwell, 1992a), and the last three items pertain to the location (inside/outside functional area or company) where external communication takes place (Keller, 2001). The first ten items used a five-point bipolar scale, ranging from 1 (strongly disagree) to 5 (strongly agree). For the final three items, the pilot study and last version used a five-point unipolar scale, ranging from 1 (none at all) to 5 (a great deal).

Goal Interdependence: The four interdependence questions were taken from survey items used by Tjosvold et al. (2004) to measure cooperative goals. Tjosvold and colleagues (2004) used a seven-point scale.

Cohesion: The first four items were picked from Zaccaro's (1991) measure of task and interpersonal cohesiveness and the last three items from West and Wallace's (1991) group cohesiveness, which convey "work group feeling" (p. 307). Zaccaro (1991) used a seven-point scale.

Task Reflexivity: Five scale items that measure member opinion of the team's problem-solving approach and competence for critical self-evaluation were included (Somech, 2006). Items measure team member behaviors that question, explore, analyze, review past decisions, and lead to new realizations (West, 1996). The pilot study used a five-point unipolar scale measuring frequency and ranging from 1 (never) to 5 (always), instead of Somech's (2006) 1 (not at all) to 5 (very much). For the last version of the questionnaire, the scale was changed to 1 (barely or not at all) to 5 (very much) for consistency with Somech (2006) in measuring *extent* (Watson et al., 1988) and to avoid items with extreme words (Clark & Watson, 1995; Nye, Newman, & Joseph, 2010).

Power Difference: The first ten items were chosen from Hinken and Schreisheim's (1989) bases of social power scale, which measure five dimensions of power: reward, coercive, legitimate, expert, and referent. The last four items were chosen from Anderson et al.'s (2012) personal sense of power scale, which measure a member's perception of supervisor capacity to influence their behavior. The bases of social power and personal sense of power questionnaires use seven-point scales.

Status Differences: Five items using a five-point bipolar scale, ranging from 1 (strongly disagree) to 5 (strongly agree), were created to measure the perceived importance of status when conveying opinions and possible preference for sharing information or assistance with higher status team members (Bunderson & Reagans, 2011; Flynn et al., 2006; Van der Vegt et al., 2006).

Regulatory Focus: The six promotion focus and six prevention focus items from Wallace and Chen (2006) were chosen. Regulatory focus is incorporated as a single construct (with subconstructs promotion and prevention). Thus, six new scale items (six

pairs) were generated by placing promotion focus items (e.g., “getting a lot of work finished in a short amount of time”) and prevention focus items (e.g., “completing work tasks correctly”) on opposite ends. Respondents answered using a five-point semantic differential scale with “about the same” as the middle choice and “much more” on each end.

Individual Innovativeness: The first three items were selected from the client-focused measures of Hogan and colleagues’ (2011) innovation capability scale. The next four items came from the entrepreneur role section of the Role Based Performance Scale (Wellbourne et al., 1998). The last three items were chosen from the conceptualizing capabilities measures of Janssen et al.’s (2016) dynamic service innovation capabilities scale, which identifies innovation capabilities specific to the service industry. Original survey items used a seven-point scale.

Information was also obtained on job function and industry, using nine sectors based on the MSCI GICS (GICS, 2022). GICS (2022) contains eleven sectors, but two industry classifications were subsumed: materials and industrials; consumer discretionary and consumer staples (as one “consumer” sector).

Factor Analysis

A principal axis factor analysis was conducted on the 147 responses, with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure, KM0, was .817 ("meritorious" according to Kaiser and Rice, 1974); KMO values for three individual items were below the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (2415) = 7535.072, $p < .001$) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, but determinant of the correlation matrix was below minimum acceptable level of .00001 (Determinant = 1.38 E-27). Nonredundant residuals with absolute values greater than .05 was 2%, below maximum acceptable level of 50% for good model fit.

An initial analysis was run to obtain eigenvalues for each factor in the data, excluding the dependent variable. Seventeen factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 74.80% of the variance. The scree plot was ambiguous and showed inflexions that would justify retaining nine or thirteen factors. Parallel analysis using 95^{th} percentile eigenvalue criteria justified retaining eleven factors. Nine factors were retained because of the number of latent variables identified in the model and convergence with the scree plot.

Twenty-five items were sequentially removed (removed one item, ran the analysis, then removed another, and so forth) because the items had loadings below 0.5 and/or crossloadings (Costello & Osborne, 2005; Young & Pearce, 2013). The Kaiser-Meyer-Olkin measure, KM0, was .848 ("meritorious;" Kaiser & Rice, 1974); KMO values were all above the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (990) = 4602.625, $p < .001$) indicated significant pairwise relationships between the items.

Individual variable correlations do not indicate multicollinearity, but determinant of the correlation matrix is below minimum acceptable level of .00001 (Determinant = 4.40 E-16). Nonredundant residuals with absolute values greater than .05 was 8%, below maximum acceptable level of 50% for good model fit.

Appendix C shows factor loadings after rotation. Eight factors with three or more items were extracted. All items measuring Cohesion had loadings below .5 and/or crossloadings so factor extraction was not possible. Nevertheless, cohesion was retained based on its relevance in prior research as a predictor of innovation outcomes (e.g., Beal et al., 2003; Gully, Devine, & Whitney, 2012; Harrison et al., 1998).

Items measuring Support for Innovation, Vision, External Communication, Goal Interdependence, Task Reflexivity, Regulatory Focus, Power Difference, and Status Differences had reliabilities with Cronbach alphas = .924, .904, .847, .852, .858, .733, .852, .870, respectively. Harman's single factor test was used to detect common method variance (Podsakoff & Organ, 1986). No single factor accounted for more than 26% of the total variance (less than the 50% limit).

Chapter 5

RESULTS

Descriptive Statistics and Correlations

IBM SPSS Statistics (Version 28) was used for analyses. The dataset was checked for missing data and for outliers. Sample size of one hundred forty-seven was deemed acceptable based on correlation figures, variable significance tests (t-tests), and established rules of thumb (Green, 1991; Wilson, Van Voorhis, & Morgan, 2007). Table 2 shows descriptive statistics, internal consistency reliabilities, and zero-order correlations among the variables. Zero-order correlations with individual innovativeness (dependent variable) were as follows: Support for innovation ($r = .57$), external communication ($r = .32$), cohesion ($r = .41$), goal interdependence ($r = .22$), task reflexivity ($r = .60$), and regulatory focus ($r = .29$), all correlate positively at the .01 level of significance. Vision ($r = .18$) correlates positively with individual innovativeness at the .05 level of significance. Power difference correlates positively with support for innovation ($r = .46$, $p < .01$), external communication ($r = .38$, $p < .01$), and vision ($r = .54$, $p < .01$), but no significant correlation was found with regulatory focus ($r = -.03$). No significant correlation was found between status differences and cohesion or task reflexivity. Also, no significant correlations were found between team size, team tenure, or hours worked and independent variables external communication, vision, cohesion, goal interdependence, and task reflexivity. Of note were the positive correlations of power difference with goal interdependence ($r = .52$, $p < .01$), cohesion ($r = .63$, $p < .01$), and with the dependent variable ($r = .32$, $p < .01$). Also, the positive correlations of team

size with status differences (r = .27, p < .05) and member tenure with individual innovativeness (r = .21, p < .01)

Table 2

Means, Standard Deviations, and Zero-Order Correlations [a]

Variable	M	SD	alpha	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Support	3.16	.97	.92	--													
2. External Communication	3.98	.71	.84	.38**	--												
3. Vision	4.05	.70	.90	.40**	.51**	--											
4. Cohesion	4.07	.70	--	.44**	.55**	.59**	--										
5. Goal Interdependence	4.41	.66	.85	.37**	.51**	.57**	.67**	--									
6. Task Reflexivity	2.90	.85	.85	.46**	.26**	.20*	.47**	.27**	--								
7. Regulatory Focus	2.32	.81	.73	.13	-.08	-.14	.00	-.09	.27**	--							
8. Power Difference	4.29	.66	.85	.46**	.38**	.54**	.63**	.52**	.28**	-.03	--						
9. Status Differences	3.00	.93	.87	-.16	-.02	-.17*	-.06	-.02	.11	.13	.00	--					
10. Individual Innovativeness	3.67	.87	.94	.57**	.32**	.18*	.41**	.22**	.60**	.29**	.32**	.04	--				
11. Team Size	2.16	.78	--	-.02	.05	-.02	-.03	-.05	.04	.05	-.01	.27**	.04	--			
12. Member Tenure	1.85	.80	--	.00	.13	.06	.10	.04	.05	-.08	-.01	.03	.21**	.07	--		
13. Hrs. worked in Team	4.35	1.06	--	-.10	.10	.11	.04	.00	.07	.01	.06	.14	-.01	.15	-.01	--	
14. Age	3.05	.78	--	-.04	-.07	.00	-.12	-.02	-.11	-.18*	-.11	-.17*	-.04	.03	.18*	-.06	--

[a] n =147
* p < .05, ** p < .01

Regression analyses

After centering the numeric variables and creating dummy variables for team and individual demographic variables (team size, tenure, hours worked, age, ethnicity, gender), interaction terms were found by multiplying predictor variables with moderator variables. Multiple regression analyses were conducted to examine the relationship between the independent variables and the dependent variable and to test for interaction effects of power and status differences (moderators). Regression analyses were also performed for possible moderation effects on the relationship between team predictor variables and individual innovativeness of the following variables: Team size (number of

members; three possible group intervals), team tenure (number of years in the team; three possible group intervals), hours worked per week in the team (five possible group intervals), age of participant (five possible group intervals), ethnicity (six possible categories), gender (four possible categories).

Multicollinearity tests (tolerance and VIF statistics) were examined. Checks were performed to assess homoskedasticity of residuals (visual inspection of plots, Breusch-Pagan tests, White test); if heteroskedasticity was detected, t-statistics were calculated using heteroskedastic-consistent standard errors (Hayes & Cai, 2007; White, 1980). Analysis of variance calculations were analyzed to assess overall model and individual variable statistical significance (F-statistics; p values).

Simple linear regression was used to test if each of the seven independent variables significantly predicted individual innovativeness. Table 3 shows results for each regression model, i.e., individual innovativeness regressed on each of the following independent variables: Support for innovation [$F(1, 145) = 72.715$, $p < .001$], external communication [$F(1, 145) = 17.45$, $p < .001$], vision [$F(1, 145) = 5.32$, $p = .02$], cohesion [$F(1, 145) = 30.15$, $p < .001$], goal interdependence [$F(1, 145) = 7.83$, $p = .01$], task reflexivity [$F(1, 145) = 81.69$, $p < .001$], and regulatory focus [$F(1. 145) = 13.45$, $p < .001$]. After correcting for heteroskedasticity, unstandardized coefficient values for support for innovation ($B = .51$, $p < .001$), external communication ($B = .40$, $p < .001$), cohesion ($B = .51$, $p < .001$), task reflexivity ($B = .61$, $p < .001$), and regulatory focus ($B = .31$, $p < .001$) provide support for a statistically significant relationship between these predictor variables and individual innovativeness, in the same direction as predicted in the research model. Vision ($B = .23$, $p = .08$) and goal interdependence ($B = .29$, $p = .06$)

were not found to be significant predictors. Therefore, hypotheses 1, 2, 4, 6, and 7 were supported but hypotheses 3 and 5 were not.

Table 3

Simple Linear Regression Analyses [a]

Variable	B	SE	β	95% CI of B		t	R^2
				LL	UL		
Support [b]	.51	.07	.57	.37	.66	7.09 ***	.33
External Communication	.40	.09	.32	.21	.59	4.17 ***	.10
Vision [b]	.23	.13	.18	-.03	.49	1.74	.03
Cohesion [b]	.51	.13	.41	.25	.78	3.87 ***	.17
Goal Interdependence [b]	.29	.15	.22	-.01	.60	1.89	.05
Task Reflexivity [b]	.61	.07	.60	.46	.76	8.25 ***	.36
Regulatory Focus	.31	.08	.29	.14	.48	3.66 ***	.08
Promotion Focus [c]	.19	.39	.10	-.62	1.02	.50	.01
Prevention Focus [b, c]	.37	.16	.21	.03	.70	2.19 *	.04

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE, 95% CI of B, and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
[c] Promotion Focus: n = 24; Prevention Focus: n = 111
* p < .05, ** p < .01, *** p < .001

Sub variables promotion and prevention focus were tested one at a time as predictors of individual innovativeness by splitting the one hundred forty-seven cases into those with a regulatory focus score greater than 3.0 (promotion focus, n = 24) and those with a score less than 3.0 (prevention focus, n = 111). Twelve cases with an average regulatory focus score equal to 3.0 were excluded. Table 3 shows the results. Promotion focus was not found to be a significant predictor (B = .19, p = .62). Prevention focus was found significant but, contrary to hypothesis 7b, was positively related to individual innovativeness (B = .37, p = .03). Therefore, hypotheses 7a and 7b were not supported.

Multiple regression was then used to test the seven independent variables as predictors of individual innovativeness. The overall regression was statistically significant [F (7, 139) = 21.16, $p < .001$] and explained 51.6% of the variance in individual innovativeness. After correcting for heteroskedasticity, unstandardized coefficients for support for innovation (B = .33, $p < .001$) and reflexivity (B = .34, $p < .001$) were found significant (Table 4), i.e., individual self-report of innovativeness is higher for those who work in organizations that are perceived to support innovation and in teams that demonstrate greater task reflexivity. Once support for innovation and reflexivity were considered, each of the remaining variables did not contribute to the multiple regression model (Table 4).

Table 4

Multiple Regression Analyses [a]

Variable	B	SE [b]	β	95% CI of B [b]		t [b]
				LL	UL	
Support	.33	.08	.37	.15	.51	3.72***
External Communication	.16	.10	.13	-.05	.37	1.47
Vision	-.13	.11	-.11	-.37	.09	-1.15
Cohesion	.18	.14	.14	-.09	.46	1.30
Goal Interdependence	-.12	.17	-.09	-.47	.22	-.71
Task Reflexivity	.34	.09	.33	.14	.53	3.47***
Regulatory Focus	.14	.08	.13	-.01	.30	1.83

$R^2 = .516$; Adjusted R square = .492
F (7, 139) = 21.16 ***

[a] Dependent Variable: Individual Innovativeness
[b] Estimates using robust standard errors, HC3 method (Hayes & Cai, 2007)
* $p < .05$, ** $p < .01$, *** $p < .001$

Subsequently, five separate regressions were conducted adding independent variables reflexivity and support for innovation, respectively, in the first two blocks and

each of the remaining variables (external communication, vision, cohesion, goal interdependence, regulatory focus), one by one, in the third block. Results appear in Table 5. The model with regulatory focus as the third predictor variable was the only to show a small but significant increase in explained variance, R^2 change = 1.7% [F (1, 143) = 4.65, p = .03], and significant unstandardized coefficient (B = .14, p = .03).

Table 5

Multiple Regression Analyses: Adding Independent Variables in Steps [a]

	Variable	△ R Square	B	SE [b]	β	t [b]
1.	Reflexivity		.42	.08	.41	5.06 ***
	Support		.31	.08	.35	3.56 ***
	External Comm.	.00	.09	.10	.08	.95
2.	Reflexivity		.43	.08	.42	5.12 ***
	Support		.36	.08	.40	4.29 ***
	Vision	.00	-.07	.11	-.06	-.67
3.	Reflexivity		.41	.09	.40	4.47 ***
	Support		.32	.07	.36	4.14 ***
	Cohesion	.00	.07	.14	.06	.53
4.	Reflexivity		.44	.08	.42	5.12 ***
	Support		.35	.08	.39	4.26 ***
	Goal Interdepend.	.00	-.05	.16	-.04	-.33
5.	Reflexivity		.39	.08	.38	4.58 ***
	Support		.34	.08	.38	4.07 ***
	Reg. Focus	.01 *	.14	.06	.13	2.22 *

Step 1: Reflexivity △ R square = .36 ***; Step 2: Support △ R square = .11 ***

Note: Model: Bo + B1 x Reflexivity + B2 x Support + B3 x additional independent variable
[a] Dependent Variable: Individual Innovativeness
[b] Estimates using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

After generating interaction terms by multiplying centered independent variables support for innovation, external communication, vision, cohesion, and regulatory focus, with centered power difference, moderated regression analyses were conducted to test for possible moderation of power difference on the relationship between each of the five independent variables and individual innovativeness. Table 6 shows the results. None of

the interaction terms were found significant therefore, hypotheses 8 through 11b were not supported. Similarly, interaction terms were generated by multiplying centered independent variables cohesion and task reflexivity with centered status differences. Moderated regression analyses were conducted to test hypotheses 12 and 13 (Table 6). Interaction terms were not statistically significant and, thus, neither hypothesis was supported.

Table 6

Regression Analyses: Moderation effect of Power and Status Differences [a]

Variable	△ R square	B	SE	β	t
Support x Power	.00	.01	.07	.01	.18
External Comm. x Power	.00	.02	.10	.01	.21
Vision x Power	.00	.05	.09	.05	.60
Regulatory Focus x Power [b]	.00	-.07	.11	-.04	-.60
Promotion Focus x Power	.00	.07	.20	.09	.36
Prevention Focus x Power	.02	-.28	.16	-.16	-1.76
Task Reflexivity x Status	.00	.05	.07	.04	.69
Cohesion x Status	.00	.09	.11	.06	.79

[a] Dependent Variable: Individual Innovativeness
[b] Promotion Focus: n = 24; Prevention Focus: n = 111
* p < .05, ** p < .01, *** p < .001

Dummy variables were generated, and regression analyses were conducted to test possible moderation of team size (3 groups), member tenure (3 groups), and hours worked (five groups) on the relationship between individual innovativeness and external communication, vision, cohesion, goal interdependence, and task reflexivity. (Table 7; Table 10, Appendix E). For team size, only the interaction with vision was significant but positive, opposite the hypothesized direction, i.e., hypotheses 14-18 were not supported. None of the interactions with tenure were significant (hypotheses 19-23 were not

supported). Interaction of hours worked (16-20 hours) with goal interdependence was significant and positive (hypothesis 27 was supported). Remaining interactions were not significant; hypotheses 24, 25, 26 and 28 were not supported.

Table 7

Regression Analyses: Moderation effect of Team Size, Member Tenure, and Hours Worked (condensed) [a]

Variable	△ R square	B	SE	β	t
Task Reflexivity x Team Size [b]	.02	-.30	.16	-.19	-1.91
Goal Interdepend. x Team Size	.00	.19	.29	.06	.66
Cohesion x Team Size	.01	.32	.19	.17	1.67
Vision x Team Size (team >7 members)	.03	.46	.22	.20	2.13*
External Comm. x Team Size	.00	-.17	.25	-.06	-.68
External Comm. x Tenure	.01	-.24	.19	-.14	-1.25
Vision x Tenure	.00	.04	.20	.02	-.18
Cohesion x Tenure	.00	-.06	.19	-.04	-.34
Goal Interdepend. x Tenure	.00	-.11	.21	-.06	-.53
Task Reflexivity x Tenure	.00	.01	.14	.01	.06
External Comm. x Hrs. Worked	.00	.18	.70	.02	.25
Vision x Hrs. Worked	.01	.31	.36	.08	.88
Cohesion x Hrs. Worked	.00	.25	.48	.04	.54
Goal Interdepend. x Hrs. Worked	.03	.84	.40	.19	2.12*
Task Reflexivity x Hrs. Worked [b]	.02	-.54	.40	-.16	-1.36

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

Finally, analyses were conducted to test for possible moderation effect of age, ethnicity, and gender on the relationship between each of the previous five independent variables and individual innovativeness (Table 8; Table 11, Appendix E). Interaction terms involving age were not significant; hypotheses 29 through 33 were not supported.

For ethnicity, no analysis was conducted for the Native Hawaiian or Pacific Islander and American or Alaskan Indian categories as only one and two responses, respectively, were obtained. Small samples were available for other ethnicity categories: Asian (n = 20), African American (n = 13), and Hispanic (n = 12). Likewise for gender, the preferred not to say and non-binary or third gender categories were not analyzed (one and two responses, respectively).

Table 8:

Regression Analyses: Moderation effect of Age (condensed), Ethnicity, and Gender [a]

Variable	△ R square	B	SE	β	t
External Comm. x Age	.00	.11	.23	.05	.49
Vision x Age	.00	-.01	.24	.00	-.04
Cohesion x Age	.01	.32	.25	.11	1.29
Goal Interdepend. x Age	.00	.16	.29	.05	.57
Task Reflexivity x Age	.00	.13	.16	.07	.84
External Communication x Ethnicity:					
Asian	.00	-.02	.28	-.01	-.08
African American	.00	.44	.57	.07	.77
Hispanic	.00	.37	.48	.05	.51
White	.00	-.16	.23	-.11	-.70
Vision x Ethnicity:					
Asian	.00	.06	.33	.02	.17
African American	.00	.39	.65	.06	.60
Hispanic	.03	-.58	.28	-.18	-2.08*
White	.01	.19	.22	.13	.86
Cohesion x Ethnicity:					
Asian	.03	.71	.32	.19	2.20*
African American	.01	.42	.39	.09	1.09
Hispanic	.00	.43	.45	.08	.94
White	.05	-.68	.23	-.47	-2.98**

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

Table 8 (continued)

Variable	△ R square	B	SE	β	t
Goal Interdependence x Ethnicity:					
Asian	.00	.04	.37	.01	.10
African American	.02	1.20	.71	.16	1.70
Hispanic	.00	.01	.57	.00	.01
White	.01	-.26	.29	-.18	-.93
Task Reflexivity x Ethnicity:					
Asian	.00	-.06	.21	-.02	-.30
African American	.00	.07	.24	.02	.31
Hispanic	.02	.47	.26	.13	1.83
White	.01	-.20	.15	-.15	-1.36
External Communication x Gender:					
Male	.00	.03	.19	.02	.19
Female	.00	-.01	.19	-.01	-.07
Vision x Gender:					
Male	.05	-.58	.20	-.37	-2.88**
Female [b]	.07	.68	.19	.34	3.55***
Cohesion x Gender:					
Male	.00	-.02	.19	-.01	-.10
Female	.00	-.01	.18	-.01	-.08
Goal Interdependence x Gender:					
Male	.00	-.13	.22	-.07	-.59
Female	.00	.24	.22	.11	1.09
Task Reflexivity x Gender:					
Male	.00	-.01	.14	-.01	-.10
Female	.00	-.02	.14	-.01	-.17

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

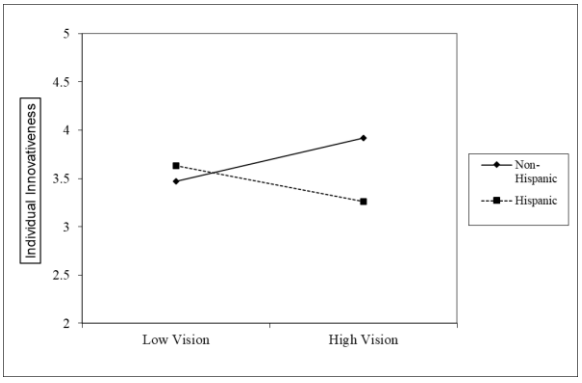
To analyze the moderating effect of ethnicity and gender, variables were treated as dichotomous, data was separated into groups, simple slope estimates were obtained, and differences were calculated to test for significance of moderation (Dawson, n.d.;

Robinson, Tomek, & Schumacker, 2013). The following is a description of the analyses, and a summary of the conclusions is provided in Table 9.

Hispanic ethnicity interaction with vision (R^2 change = .03, B = -.58, p < .05) indicated moderation of the relationship between vision and individual innovativeness. Figure 2 shows plot of vision on individual innovativeness for Hispanic and non-Hispanic respondents (low value of moderator = 0, high value = 1). Simple slopes show a positive and significant relationship between vision and individual innovativeness for non-Hispanics (B = .32, p < .01) and a negative but non-significant relationship (no different than 0) for Hispanics (B = -.26, p = .41). The test for difference in the simple slopes indicated a statistically significant difference in simple slopes for Hispanics and non-Hispanics (t (145) = - 4.28, p < .001), i.e., ethnicity was a statistically significant moderator of vision and individual innovativeness, supporting moderation hypothesis H35.

Figure 2:

Hispanic Ethnicity x Vision Interaction on Individual Innovativeness

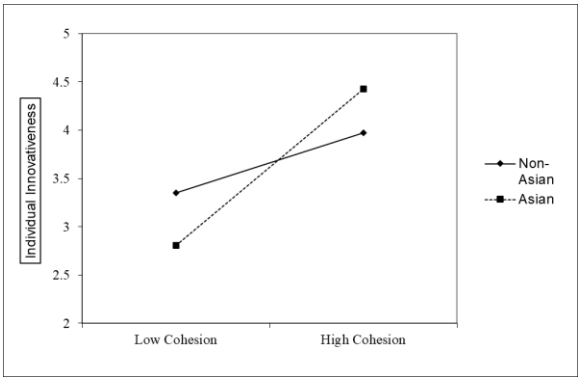


Asian ethnicity interaction with cohesion (R^2 change = .03, B = .71, p < .05) indicated moderation of the relationship between cohesion and individual innovativeness.

Plot of cohesion on individual innovativeness for Asians and non-Asians is shown in Figure 3. Cohesion is positively and significantly related to individual innovativeness for both Asians (B = 1.15, p < .001) and non-Asians (B = .44, p < .001). The test for difference in the simple slopes indicated a statistically significant difference in simple slopes for Asians and non-Asians (t (145) = 5.35, p < .001), lending support for moderation hypothesis H36.

Figure 3:

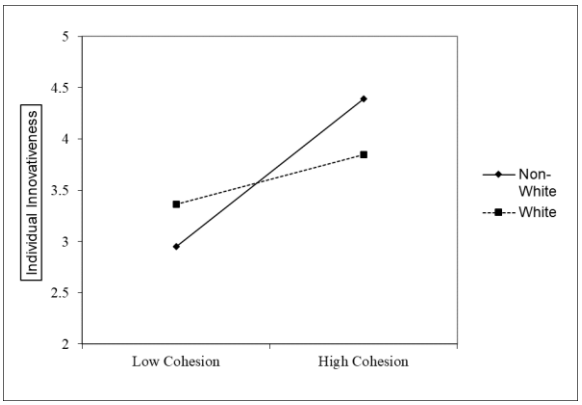
Asian Ethnicity x Cohesion Interaction on Individual Innovativeness



White ethnicity interaction with cohesion (R^2 change = .05, B = -.68, p < .01) indicated moderation for the relationship between cohesion and individual innovativeness. Plot of cohesion on individual innovativeness for Whites and non-Whites is shown in Figure 4. Cohesion is positively and significantly related to individual innovativeness for both Whites (B = .34, p < .01) and non-Whites (B = 1.02, p < .001). The test for difference in the simple slopes indicated a statistically significant difference in simple slopes for Whites and non-Whites (t (145) = - 4.92, p < .001), lending additional support for ethnicity as a statistically significant moderator of cohesion and individual innovativeness (hypothesis H36).

Figure 4:

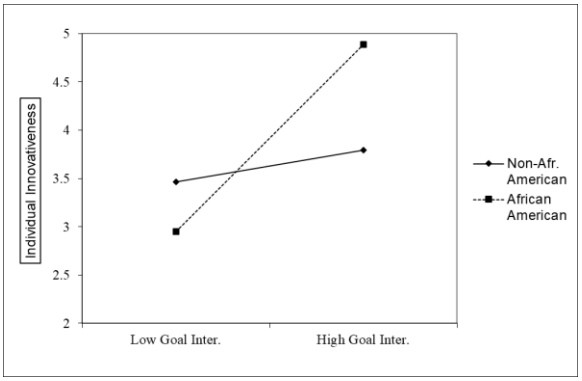
White Ethnicity x Cohesion Interaction on Individual Innovativeness



African American ethnicity interaction with goal interdependence was not significant (R^2 change = .02, B = 1.20, p = .09). However, following Robinson and colleagues (2013), simple slopes analysis was performed. Figure 5 shows the plot of goal interdependence on individual innovativeness for African Americans and non-African Americans. Goal interdependence is positively and significantly related to individual innovativeness for both African Americans (B = 1.45, p < .01) and non-African Americans (B = .25, p < .05). The test for difference in the simple slopes indicated a statistically significant difference in simple slopes for African Americans and non-African Americans (t (145) = 7.61, p < .001), in support of a statistically significant moderation effect of ethnicity on the relationship between goal interdependence and individual innovativeness (hypothesis H37).

Figure 5:

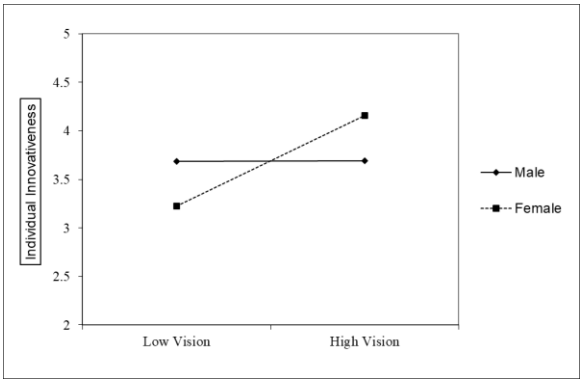
African American Ethnicity x Goal Interdepend. Interaction on Individual Innovativeness



Gender (female and male only) interaction term with vision was statistically significant (R^2 change = .07, B = .65, p < .01). Figure 6 shows a positive and significant relationship between vision and individual innovativeness for females (B = .66, p < .001) and a positive but non-significant relationship for males (B = .01, p = .96). The test for difference in the simple slopes indicated a statistically significant difference in simple slopes for males and females (t (142) = 4.75, p < .001), i.e., gender is a statistically significant moderator of vision and individual innovativeness, supporting moderation hypothesis H40.

Figure 6:

Gender x Vision Interaction on Individual Innovativeness



In conclusion, ethnicity moderation hypotheses 35, 36, 37 were supported but hypotheses 34 and 38 were not. Gender moderation hypothesis 40 was supported but hypotheses 39, 41, 42, and 43 were not. Table 9 summarizes results of hypotheses tests (1-43).

Table 9

Summary of Hypotheses Tests [a]

Hypo.	Description	B	t	p-value	Result
1	Support increases Ind. Innovativeness [b]	.51	7.09	.00	Supported
2	Ext. Comm. increases Ind. Innovativeness	.40	4.17	.00	Supported
3	Vision increases Ind. Innovativeness [b]	.23	1.74	.08	Not supported
4	Cohesion increases Ind. Innovativeness [b]	.51	3.87	.00	Supported
5	Goal Inter. increases Ind. Innovativeness [b]	.29	1.89	.06	Not supported
6	Task Reflex. increases Ind. Innovative. [b]	.61	8.25	.00	Supported
7	Reg. Focus increases Ind. Innovativeness	.31	3.66	.00	Supported
7a	Promotion increases Ind. Innovativeness	.19	0.50	.62	Not supported
7b	Prevention decreases Ind. Innovativeness [b]	.37	2.19	.03	Not supported
8	Power negatively moderates Support	.01	.18	.85	Not supported
9	Power negatively moderates Ext. Comm.	.02	.21	.83	Not supported
10	Power negatively moderates Vision	.05	.60	.55	Not supported
11	Power negatively moderates Reg. Focus	-.07	-.60	.54	Not supported
11a	Power negatively moderates Promotion	.07	.36	.71	Not supported
11b	Power negatively moderates Prevention	-.28	-.95	.34	Not supported
12	Status negatively moderates Reflexivity	.05	.69	.49	Not supported
13	Status negatively moderates Cohesion	.09	.79	.42	Not supported
14	Tm. Size negatively moder. Reflexivity [b]	-.30	-1.91	.06	Not supported
15	Tm. Size negatively moder. Goal Interdep.	.19	.66	.51	Not supported
16	Tm. Size negatively moderates Cohesion	.32	1.67	.10	Not supported
17	Tm. Size negatively moderates Vision	.46	2.13	.04	Not supported
18	Tm. Size positively moderates Ext. Comm.	-.17	-.68	.50	Not supported
19	Tenure positively moderates Ext. Comm.	.24	1.25	.21	Not supported
20	Tenure positively moderates Vision	.04	-.18	.84	Not supported
21	Tenure positively moderates Cohesion	-.07	-.34	.73	Not supported
22	Tenure positively moderates Goal Inter.	-.11	-.53	.60	Not supported
23	Tenure negatively moderates Reflexivity	.01	.06	.96	Not supported

[a] Dependent Variable: Individual Innovativeness.
[b] Parameter estimates of t using robust standard errors, HC3 method (Hayes & Cai, 2007)

Table 9 (continued)

Hypo.	Description	B	t	p-value	Result
24	Hrs. wk. positively moderates Ext. Comm.	.18	.25	.81	Not supported
25	Hrs. wk. positively moderates Vision	.31	.88	.38	Not supported
26	Hrs. wk. positively moderates Cohesion	.25	.54	.59	Not supported
27	Hrs. wk. positively moderates Goal Inter.	.84	2.12	.04	Supported
28	Hrs. wk. positively moderates Reflexivity [b]	-.54	-1.36	.18	Not supported
29	Age moderates Ext. Communication	.11	.49	.62	Not supported
30	Age moderates Vision	-.01	-.04	.97	Not supported
31	Age moderates Cohesion	.32	1.29	.20	Not supported
32	Age moderates Goal Interdependence	.16	.57	.57	Not supported
33	Age moderates Reflexivity	.13	.84	.40	Not supported
34	Ethnicity moderates Ext. Communication	.70	1.81	.07	Not supported
35	Ethnicity moderates Vision	-.55	-1.99	.05	Supported
36	Ethnicity moderates Cohesion [†]	.68	2.30	.02	Supported
37	Ethnicity moderates Goal Interdependence	1.20	1.69	.09	Supported [††]
38	Ethnicity moderates Reflexivity	.46	1.86	.06	Not supported
39	Gender moderates Ext. Communication	.03	.19	.84	Not supported
40	Gender moderates Vision [b] [†††]	.68	3.55	.00	Supported
41	Gender moderates Cohesion.	-.02	-.10	.92	Not supported
42	Gender moderates Goal Interdependence	.24	1.09	.27	Not supported
43	Gender moderates Reflexivity	-.02	-.17	.86	Not supported

[a] Dependent Variable: Individual Innovativeness
[b] Parameter estimates of t using robust standard errors, HC3 method (Hayes & Cai, 2007)
[†] Asian ethnicity results shown; [††] based on simple slopes analysis of African Americans; [†††] Female results shown

Chapter 6

DISCUSSION

This research attempted to provide a comprehensive investigation of the proximate and moderating factors that promote (or impede) innovativeness (propensity to be innovative), from the perspective of employees in for-profit, service organizations. The I-P-O framework and its taxonomy was useful in exploring individual perceptions of innovativeness at work, i.e., contextual organizational dimensions of individuals interacting with others were incorporated into the research model and measurement instrument. Specifically, the widespread prevalence of team-orientated work and, more uniquely, the moderating effects of supervisory power and group member status distinctions. Individual attributes, including motivation, influenced by work-specific situational factors (i.e., regulatory focus) were also integrated, along with member demographic characteristics. By parsing the main predictors and elucidating the consequences of supervisor power and employee status differences, the principal aim of this research was to provide practical guidance to companies for establishing management practices and team formation approaches conducive to enhancing employee innovativeness.

Summary of Results

Support was found for the hypothesized relationships between predictor variables and individual innovativeness except for vision and goal interdependence. Multiple regression analyses suggest that task reflexivity and support for innovation are the variables with the greatest explanatory power, jointly explaining forty seven percent of the variation in the dependent variable. The main regulatory focus hypothesis was

supported but hypotheses related to the subconstructs promotion and prevention focus were not. Unexpectedly, prevention focus was found to be positively related to innovativeness, i.e., in the direction opposite the hypothesis. A relatively small sample of respondents identified as promotion focused (n = 24).

Surprisingly, supervisor-subordinate power difference was not found to moderate the relationship between predictor variables and individual innovativeness, including regulatory focus. Similarly, status did not moderate the relationship between task reflexivity or cohesion and individual innovativeness.

Of the demographic moderators not related to ethnicity or gender (size, tenure, hours worked, age), significant interactions were found only for team size with vision (greater than 7 members category) in the opposite direction hypothesized, and for hours worked with interdependence (16-20 hours category), in the hypothesized direction. It is reasonable to expect that teams spending enough time together (in this study's case, 16-20 hours per week) can establish a working relationship that stimulates productive discussion of common goals, improving chances of achieving innovative outcomes. It might be harder, however, to imagine that larger teams (greater than 7 members) are better at instituting meaningful, shared objectives, believed by members to be attainable. Although larger teams may be better at demarcating responsibilities among members with different skills to define uncluttered individual goals that eventually translate into one common team vision. This study (like others) established that to achieve innovative outcomes, different organizational contexts require distinct team structures, proscribing general (broad) conclusions about ideal team characteristics (Bledow et al., 2009; Gassmann & von Zedtwitz, 2003).

Of interest is ethnicity's moderating effect on the relationships between the dependent variable and vision, cohesion, and goal interdependence. Results should be interpreted with caution as they were obtained with few Asian (n = 20), African American (n = 13), and Hispanic (n = 12) participants. Hispanic ethnicity moderated the relationship between vision and individual innovativeness, suggesting that greater clarity, agreement, or utility with respect to team goals has no effect on individual innovativeness among Hispanics as opposed to non-Hispanics. African American ethnicity positively moderated the relationship between goal interdependence and the dependent variable, indicating better alignment of goals leads to innovativeness for individuals that belong to this ethnic group or that African Americans demonstrate greater goal alignment when working in teams. Additionally, Asian ethnicity positively moderated the relationship between cohesion and innovativeness, perhaps informing that team unity augments innovativeness among ethnic Asians or that teams comprised of ethnic Asians are more united. Conversely, white ethnicity negatively moderated the relationship between cohesion and the dependent variable, implying that whites tend to be less integrated in teams or that cohesion leads to diminished innovativeness among white team members, e.g., cohesion may lead to groupthink among whites.

Finally, gender and vision interaction coefficients were statistically significant; coefficient for male-vision interaction was negative but positive for female-vision interaction. It is consequential that this research was unable to find a significant direct effect on the dependent variable for either vision or goal interdependence but, except for cohesion and ethnicity, their interactions with team size, hours worked, ethnicity, and gender were the only significant ones. Further analysis is justified to flesh out the scope

of these interactions, including the specific conditions wherein they would apply, but on the surface, team structure and demography play a relevant role in the influence that vision and goal interdependence may have on team members' propensity to be innovative.

Practical Implications and Future Research

Power difference was evident in the sample [scale = 1- 5 (5 = largest difference); mean = 4.3, $p < .001$] and unlikely to play no role as, at minimum, it should divert employee time and effort towards establishing a tolerable subordinate-supervisor relationship. Compellingly, power difference was found to be correlated with the dependent variable, which may suggest possible mediating effects that should be explored, i.e., the partial mediating effect of organization level (support for innovation), team level (external communication, vision, task reflexivity), or individual level (regulatory focus) variables on the relationship between power difference and individual innovativeness. Differences in supervisor-subordinate power can have stunting effects on team communication, experimentation, and the free exchange of ideas, waning potential innovation outcomes through its effect on the predictor variables (Anderson & West, 1998; Brooks, 1994; Edmondson, 1999; Wittenbaum et al., 2004). Plainly, power difference may have been modeled incorrectly in this study as moderator instead of mediated predictor.

Moreover, although their interaction was not considered, power difference showed significant correlation with predictor variables cohesion and goal interdependence. Future studies might examine the role of power difference on group

unity, including goal attainment. Empathic supervisors who demonstrate institutional or socialized use of power provide security and guidance to all team members, including the lowest ranking ones, motivating group interaction, knowledge transfer, and goal orientation (Bunderson and Reagans, 2011; McClelland & Burnham 1995).

This study also measured and found that power difference failed to moderate regulatory focus. Results suggest that social bases of power (reward, coercive, legitimate, referent, and expert power; Hinken & Schreisheim, 1989) themselves are inadequate to transform an employee's approach or motivation towards innovativeness. This aligns with preceding work positing innovation is influenced by the *application* of supervisor power, which ultimately delineates a subordinate's capacity to take risks, learn, adapt, and participate in decisions; in other words, a supervisor's leadership style (Fagenson, 1988; Garcia-Morales, Matias-Reche, & Hurtado-Torres, 2008; Somech, 2006; Wallace et al., 2016).

In work groups, employees encounter various relationships, which are governed by member status differences (Anderson et al., 2012). Accordingly, team member status differences were likely present among this study's subjects, albeit without altering the magnitude of the relationship between team cohesion or reflexivity and innovativeness. Conceivably, the loss (diminished contribution by low-status, inhibited members) or benefit (learning derived from past achievements of high-status members) that status differences generate are insufficient to alter team member innovativeness outcomes. More likely, team cohesiveness and reflexivity are partially defined by their ability to successfully assimilate status differences, i.e., status differences, as measured in this

research, do not merely influence team outcomes, rather they help conceptualize team cohesiveness and reflexivity.

Prior research has uncovered a positive association between regulatory focus and task performance (Lanaj et al., 2012; Wallace, Johnson, & Frazier, 2009). Task performance is described in relation to strategies for performing at or above pre-established standards (or goals) that promote success and lead to favorable recognition and rewards (Lanaj et al., 2012). Similarly in this study, support was found for a positive relation between regulatory focus and task reflexivity ($r = .27$, $p < .01$), the promotion of excellence through thoughtful, critical appraisal of past performance (DeDreu, 2002; Somech, 2006; Tjosvold et al., 2004). Consequently, additional insights regarding their role could be gleaned by examining possible mediation effects of task reflexivity or task performance on the relationship between regulatory focus and innovativeness.

This study found regulatory focus to be a significant predictor of innovativeness but was unable to find support for promotion as a self-regulation approach that enables innovativeness or conversely, prevention as one that hinders innovativeness. Contrary to the hypothesis, prevention focus was found to be positively related to individual innovativeness. Nevertheless, this may be a justified outcome if a more nuanced conceptualization of regulatory focus is incorporated into the analysis (Fay et al., 2019).

Promotion and prevention foci have been found to be relatively uncorrelated ($\rho = .11$; Lanaj et al., 2012), and consequently research has investigated how specific outcomes may be targeted by aligning an employee's chronic regulatory focus with specific desired outcomes (Higgins, 2000; Spiegel et al., 2004) or by influencing different

dimensions of promotion (ideals and gains) and prevention (oughts and non-losses) regulatory foci that activate behaviors temporarily (Fay, et al., 2019). Contextual factors can help activate both foci (e.g., a motivational supervisor with an inclusive leadership style), leading to optimal employee performance (Baer et al., 2003; Forster et al., 2003; Wallace & Chen, 2006). This might be especially true for those already in roles and work teams that fit their primary regulatory focus orientation because they likely exhibit greater work engagement, perseverance, and motivation to pursue goals, i.e., individual and collective regulatory fit are already present (Spiegel et al., 2004).

Conceivably then, as Lanaj and colleagues (2012) assert, individuals at work can successfully indulge a strong promotion focus (orientation towards exploration, novel ideas, and perseverance) and a strong prevention focus (discipline towards fulfilling responsibilities and tasks on time), which together lead to superior performance outcomes. In fact, this would be expected of employees in sales roles within highly regulated industries such as banking and pharmaceuticals. A robust sales culture, with a penchant for besting goals, must be integrated within a structure that promotes vigilance and responsible behavior, guided by rules and regulations. Future research that continues to clarify promotion and prevention foci interactions (Lanaj et al., 2012) in different work environments, within models that incorporates the interaction of multilevel contextual elements—environmental (regulatory, legal), organizational (goal fulfillment, risk management), team (work-group orientation, i.e., collective regulatory focus), individual (personal orientation, i.e., regulatory focus)—would likely uncover complementary findings with practical applications for hiring and team formation practices that promote innovativeness in the workplace.

Resembling past research, this study's results reflect the differentiated influence that ethnicity has on team member perceptions of factors that impact work group outcomes (Pelled et al., 1999; Riordan & Shore, 1997). Although team ethnic composition was not practical to assess in this investigation, it would have undoubtably yielded additional insights. For instance, the moderating role of African American ethnicity on work group goal interdependence might be explained by work team ethnic composition. Linked to work group goal interdependence, work group commitment (a member's identification and involvement with their work group) was higher for African Americans working in teams comprised mostly of minority members as opposed to those in mostly White teams (Riordan and Shore, 1997). Additionally, even though in Riordan and Shore's (1997) work, ethnicity had no significant effect on cohesion (member attraction to each other, degree of coordination, and general group morale), both Jehn, Northcraft, and Neale (1999) and Pelled and colleagues (1999) found race diversity had profound effects on work group emotional conflict and stability. Team composition may also help explain why in this study Asians and Whites demonstrated contrastingly different but significant moderating effects on cohesion, i.e., Whites may have worked in relatively more diverse groups when compared to Asians. Alternatively, work group cohesion (or work group emotional conflict) may pertain to team member attitudes, beliefs, and values, that with time, change initial, racially based perceptions and shape longer term relationships (Harrison et al., 1998). Findings animate this researcher's curiosity to conduct follow up studies incorporating work group ethnic composition as well as other factors that may affect performance, including diversity in team member attitudes, beliefs, and values, stemming from differences in individual career aspirations,

and diversity in work group mission interpretation. For instance, in service organizations, team member conflicting views regarding whether priority lies with customers or employer (Jehn et al., 1999; Siguaw & Honeycutt, Jr., 1995).

Unexpectedly, this study revealed gender moderating the relationship between vision and individual innovativeness, with males having a negative moderating effect and females a positive one. If intentions were mandated externally, perhaps the more independent-minded work team males, as opposed to harmony-seeking females, demonstrated greater skepticism regarding the team's understanding of objectives, their usefulness, worth, or the possibility of goal attainment (Eagly & Wood, 1991). Males have been found to exhibit greater uncertainty in understanding what others expect of their job and how their performance is evaluated (Siguaw & Honeycutt, Jr.,1995). Past research has also uncovered significant differences in subordinate perceptions and outcomes due to supervisor gender, supervisor leadership style, and contextual influences such as work settings that are gender natured, for example, hospitals where males have dominated leadership and higher paying roles (Eagly & Johannesen-Schmidt, 2001; Reuvers, Van Engen, Vinkenburg, Wilson-Evered, 2008). Following the same line of reasoning and in accord with previous investigations, this study would indicate that males were more incredulous than females with regards to team objectives possibly because of factors that had material implications on respondent perceptions, including misunderstanding of role and performance expectations, supervisor leadership behavior, or the nature of their work environment. Considering the multiple factors involved in an individual's ability to be innovative (including those discussed in this dissertation), isolating the effects of gender becomes challenging. This work helps narrow potential

future exploration topics by suggesting emphasis on the possible moderating effects of gender on work team vision.

Limitations

This research had limitations that must be considered. First, all responses came from the same source, using a convenience sample from Amazon Mechanical Turk (AMT). Any unique qualities or biases (e.g., selection bias) of AMT workers would affect the findings. Second, sample diversification was limited because of few responses from employees in certain job functions (e.g., Finance and Human Resources), from those described as promotion focused, and with regards to team and individual demographic characteristics, especially ethnic categories (e.g., Native Hawaiian or Pacific Islander; American or Alaskan Indian). Third, data for the independent variables, moderators, and dependent variable were obtained from the same source and thus, results should be interpreted with caution as survey responses could be subject to common method bias (Podsakoff et al., 2003). Different procedural techniques were employed to address common method bias—assurance of respondent anonymity, concise survey instructions, varied scales (unipolar, bipolar, and semantic differential scales), varied scale items (positively and negatively worded questions), independent and dependent variables assessed separately in the survey—but other widely accepted techniques, such as temporal separation of independent and dependent variable response collection, were not practical to implement (Kock, Berbekova, & Assaf, 2021; Podsakoff et al., 2003). Fourth, results and conclusions related to the study of innovation may vary based on the level of analysis (Mumford & Hunter, 2005) and thus, this study's exclusive use of individual level measures is a limitation. Fifth, self-report measures have demonstrated

stronger correlations with innovation than peer, supervisor, or objective measures, therefore, results may be inflated (Hulsheger et al., 2009). Finally, modeling regulatory focus using one construct and two subconstructs possibly justifies further investigation to confirm if hitherto validated scale items (used for evaluating two separate constructs; Wallace & Chen, 2006; Wallace et al., 2009) are appropriate for this semantic differential scale design (prevention and promotion questions appearing side by side on either ends of a scale).

Conclusions

Building on extant research, this dissertation set out to find practical recommendations for improving workplace individual team member innovativeness, in service oriented, for-profit organizations. Statistical results confirm previous findings for predictor variables (direct relationships) and reveal team reflexivity and organizational support as the main drivers of innovativeness. Evidence was found for the presence of power difference. However, findings were unable to uncover any potential moderating effect, perhaps because instead of moderation, a direct (or mediated) influence on the response variable exists. Similarly, the absence of moderating effects by status differences may be the result of a fundamental relationship that exists with the variables it intended to moderate, i.e., the variable or survey instrument may need to be re-evaluated to assess potential influences on other factors. Important outcomes with practical implications for an organization's long run sustainability derive from supervisor-subordinate power difference or from team member status differences, which merit ongoing research attention. For instance, diminished, self-interested communication or

interaction and lower productivity due to distractions arising from organizational hierarchy and politics.

Intriguingly, prevention regulatory focus was found to be positively related to innovativeness, perchance due to contextual factors not considered in the model (e.g., the organization's leadership style; regulatory requirements), which influence employee perception of innovativeness, especially for those identified as prevention focused. Also noteworthy were results regarding interaction effects of diversity. Ethnicity showed significant interaction with independent variables cohesion, goal interdependence, and vision; gender showed significant interaction with vision. Also, two interaction terms related to team demographic characteristics were found statistically significant, one between hours worked in the team (16-20 hours) and goal interdependence, and one between team size (greater than 7 members) and vision. Importantly, the direct effects on innovativeness of goal interdependence or vision were not significant but their interactions with ethnicity, gender, team size, and hours worked were so. A more rigorous investigation is required to reach conclusions, but this research's findings suggest that organizations that wish to build innovative teams must continue to hearken to the influence that diversity (ethnicity and gender) exerts on team member perceptions and attitudes of work group objectives. In addition, antecedents to innovativeness are circumscribed by the organizational and environmental context, together with the degree of complexity required for achieving desired outcomes. Moreover, conclusions must be drawn considering the level of analysis used for measurement.

Finally, incorporating temporal aspects would improve the model's alignment with work-related tasks, which include deadlines, schedules, and goal fulfillment

timelines (Marks et al., 2001). This would also address feedback loops, mediation effects (absent in this research), and the sequence of steps that inherently occur in work related processes, which lead to innovativeness outcomes (Cohen & Bailey, 1997; Ilgen et al., 2005; Marks et al., 2001).

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APPENDIX A

CONSTRUCTS, VARIABLES, AND DEFINITIONS

	CONSTRUCT / VARIABLE	*DEFINITION*	*SOURCE*
ORGANIZATION	Hierarchy / Supervisor - subordinate Power Difference	Difference in employee and supervisor power (control over valued resources).	Anderson, et al., 2012; Brooks 1994; Bunderson and Reagans, 2011; Hinkin and Schriesheim, 1989
ORGANIZATION	Support for Innovation / Support for Innovation	Workplace climate that expects, approves, and provides practical support for new products, services, and ways of working; a work climate that encourages open communication, cooperation, and reflexivity.	Anderson & West, 1998; Madjar et al., 2002; Scott & Bruce, 1994; West 1990; West & Anderson, 1996
TEAM	Hierarchy / Team Status differences	Differences in status among team members (prestige and esteem) among team members.	Djurdjevic et al., 2017
TEAM	Vision / Vision	Team members have a clear and mutual understanding of objectives, their value, their attainment, and are committed to achieving them.	Anderson and West, 1998; Gilson & Shalley, 2004; Hulsheger et al., 2009; Rickards, Chen & Moger, 2001; West & Anderson, 1996
TEAM	Group Interdependence / Goal Interdependence	Extent to which team members' goals and rewards are connected, such that an individual team member cannot achieve their goals unless the other team members achieve theirs.	Campion, et al., 1993; Saavedra et al.,1993; 1993;Tjosvold et al., 2004; Van der Vegt & Janssen, 2003

TEAM	Climate for Excellence / Task Reflexivity	Dedication to excellence with regards to shared goals and objectives, which entails the periodic appraisal of team strategy, individual performance, effectiveness, and outcomes.	Anderson & West, 1998; Somech, 2006; Tjosvold et al., 2004; West 1990
TEAM	External Communication / External Communication	Interpersonal relationships and interactions with individuals outside own team or organization	Ancona & Caldwell, 1992a; Denison et al., 1996; Keller, 2001; Perry-Smith & Shalley, 2003
TEAM	Cohesion / Cohesion	Interpersonal and task cohesiveness and group pride: Strong feeling of belonging and attachment to other team members, which promotes interaction, cooperation, risk-taking, sharing of ideas, and commitment to each other.	Gully, Devine, & Whitney, 2012; Kozlowski & Ilgen, 2006; West & Wallace, 1991; Zaccaro 1991
INDIVIDUAL	Motivation / Self-Regulation; (Promotion and Prevention Focus)	Individuals self-regulate their cognition and behavior to achieve goals. For some, motivation is conditioned on striving for an "ideal" self through aspirations and goal accomplishment ("Promotion Focus"). For others, motivation is conditioned on becoming who one "ought to be" by fulfilling obligations through responsible behavior ("Prevention Focus").	Higgins 1997, 1998, 2000; Lanaj et al., 2012; Wallace & Chen, 2006 ; Wallace, Little, & Shull, 2008 ; Wallace et al., 2009 ; Wallace et al., 2016

	Innovativeness / Individual Innovativeness	An inclination (proclivity) towards development of novel ideas and their application or implementation, as they relate to products, services, ways of doing things in the workplace.	Hogan et al., 2011; Janssen et al., 2016 ; Welbourne et al., 1998; West 2002

APPENDIX B

SURVEY INSTRUMENT

(https://fiu.qualtrics.com/jfe/form/SV_cScZYH2qDjLlWQe)

Filter Questions:	Response:
I consent to participate and I am at least 18 years old	Yes or No (end survey)
In what year were you born?	Year (1962 or lower: end survey)
Do you work in the United States or, if currently not employed, have you worked in the United States during the last twelve months?	Yes or No (end survey)
Do you work in the public sector (local, state, or federal government) or, if currently not employed, did you work in the public sector during the last twelve months?	Yes (end survey) or No
At work are you part of a team of three people or more? If not currently employed, were you a part of a work team of three people or more during the last twelve months?	Yes or No (end survey)
Do you work in one of the sectors below (choose one)? If not presently employed, did you work in one of the sectors below during the last twelve months (choose one)?	Transportation and Warehousing; Information; Financial Services; Professional and Business Services Education; Health Services; Leisure and Hospitality; Retail Trade; Wholesale Trade; None of the above (end survey).

Construct / Variable: Support for Innovation / Support for Innovation
Source: Scott and Bruce, 1994
Scale: 1 = Strongly disagree 5 = Strongly agree
Prompt: "To what extent do you agree with each statement below about your organization?"

Factor	Question
SUP01	Creativity is encouraged in this organization.
SUP02	Our ability to function creatively is respected by the leadership.
SUP03	The main function of members in this organization is to follow orders which come down through channels. *
SUP04	In this organization a person can get in a lot of trouble by being different. *
SUP05	The best way to get along in this organization is to think the way the rest of the group does. *
SUP06	This organization seems to be more concerned with the status quo than with change. *
SUP07	The reward system in this organization encourages innovative thinking.
SUP08	This organization publicly recognizes those who are innovative.
	*reverse coded

Construct / Variable: Vision / Vision
Source: Anderson and West, 1998
Scale: 1= Barely or not at all; 5= Very much
Prompt: "To what extent does each statement below apply to you and your team?"

Factor	Question
VIS01	How clear are you about what your team's objectives are?
VIS02	To what extent do you think your team's objectives are useful and appropriate?
VIS03	To what extent do you think other team members agree with your team's objectives?
VIS04	To what extent do you think your team's objectives are clearly understood by other members of the team?
VIS05	How worthwhile do you think these objectives are to you?
VIS06	How worthwhile do you think these objectives are to the organization?
VIS07	To what extent do you think these objectives are realistic and can be attained?
VIS08	To what extent do you think members of your team are committed to these objectives?

Construct / Variable: External Communication / External Communication
Source: Ancona & Caldwell, 1992(b); Denison et al., 1996; Keller, 2001
Scale: 1 = Strongly disagree; 5 = Strongly agree
Prompt: "To what extent do you agree with each statement below about your team?"

Factor	Question
EXT01	Our Team is good at coordinating work with other teams in the organization.
EXT02	The team is well informed about activities of other teams doing related work.
EXT03	Our team has difficulty working with other teams in the organization. *
EXT04	Our team is isolated from the rest of the organization.* * reverse coded
EXT05	Our team keeps other groups in the company informed of our team's activities
EXT06	Our team coordinates activities with external groups.
EXT07	Our team procures things which the team needs from other groups or individuals in the company.
EXT08	Our team reviews product design with outsiders.
EXT09	Our team finds out what competing firms or groups are doing on similar projects.
EXT10	Our team collects technical information/ideas from individuals outside the team.
Scale: 1 = None at all; 5 = Very much:	
EXT11	How much contact do you have per week (phone, email, in person conversations) with individuals outside your team but within your functional area?
EXT12	How much contact do you have per week (phone, email, in person conversations) with individuals outside your functional area but within your company?
EXT13	How much contact do you have per week (phone, email, in person conversations) with individuals outside your company?

Construct / Variable: Interdependence / Goal Interdependence
Source: Tjosvold et al., 2004
Scale: 1 = Strongly disagree; 5 = Strongly agree
Prompt: "To what extent do you agree with each statement below about your team?"

Factor	Question
INT01	Our team members 'swim or sink' together.
INT02	Our team members want each other to succeed.
INT03	Our team members seek compatible goals.
INT04	When our team members work together, we usually have common goals.

Construct / Variable: Cohesion / Cohesion
Source: Zaccaro, 1991; West & Wallace, 1991.
Scale: 1 = Strongly disagree; 5 = Strongly agree
Prompt: "To what extent do you agree with each statement below about you and your team?"

Factor	Question
COH01	I like belonging to my team because of the activities we participate in.
COH02	I do not like what I do as a member of my team. *
COH03	I generally do not get along with my fellow team members *
COH04	I enjoy belonging to my team because I am friends with many of my team members
COH05	There are strong ties between the members of the team.
COH06	Members of the team are willing to defend each other from criticism from outside.
COH07	Usually, I enjoy being in the company of my colleagues each day.
	*reverse coded

Construct / Variable: Climate for Excellence / Task Reflexivity
Source: Somech, 2006
Scale: 1 = Barely or not at all; 5= Very much
Prompt: "To what extent does each statement below apply to your team?"

Factor	Question
REF01	In the team, we look for different interpretations and perspectives to confront a problem.
REF02	In the team, we criticize each other's work in order to improve team effectiveness.
REF03	In the team, we engage in evaluating our weak points in attaining effectiveness.
REF04	In the team, we openly challenge each other's opinions

Factor	Question
REF05	In the team, we reassess any proposed solution

Construct / Variable: Hierarchy / Organizational Power difference
Source: Anderson, John, & Keltner, 2012; Hinkin and Schriesheim, 1989.
*Scale:*1 = Strongly disagree; 5 = Strongly agree
Prompt: "To what extent do you agree with each statement below about your supervisor?"

Factor	Question
POW01	My supervisor can influence my getting a pay raise.
POW02	My supervisor can influence my getting a promotion.
POW03	My supervisor can give me undesirable job assignments.
POW04	My supervisor can make me feel valued.
POW05	My supervisor makes me feel personally accepted.
POW06	My supervisor can make me feel important.
POW07	My supervisor can give me the feeling I have responsibilities to fulfill.
POW08	My supervisor can make me recognize that I have tasks to accomplish
POW09	My supervisor can provide me with sound job-related advice.
POW10	My supervisor can provide me with needed technical knowledge.
POW11	In my interactions with my supervisor, I can get him/her/them to do what I want. *
POW12	In my interactions with my supervisor, I think I have a great deal of power. *
POW13	In my interactions with my supervisor, my ideas and opinions are often ignored.
POW14	In my interactions with my supervisor, If I want to, I get to make the decisions. *
	*reverse coded

Construct / Variable: Hierarchy / Team Status differences
Source: Djurdjevic et al., 2017.
Scale: 1 = Strongly disagree; 5 = Strongly agree
Prompt: "To what extent do you agree with each statement below about you and your team?"

Factor	Question
STA01	To get opinions heard, status is important in my work team.

Factor	Question
STA02	The opinions of team members with higher status are usually more important.
STA03	I prefer to offer assistance to team members with high status.
STA04	I prefer to share information with team members with high status.
STA05	I prefer to offer my opinions to team members with higher status.

Construct / Variable: Motivation / Promotion or Prevention Focus self-regulation
Source: Wallace and Chen. 2006
Scale 1 = Much more (prevention focus); 2 = Somewhat more; 3 = About the same; 4 = Somewhat more; 5 = Much more (promotion focus)
Prompt: Which best describes you? Where do you fall along this scale?

Factor	Question: "On what do you focus your thoughts and activities when you are working?"	
REG01	Doing my duty at work	Accomplishing a lot of work
REG02	Following the rules and regulations	Getting my work done no matter what
REG03	Completing work tasks correctly	Getting a lot of work finished in a short amount of time
REG04	Fulfilling my work obligations	Work activities that allow me to get ahead
REG05	My work responsibilities	My work accomplishments
REG06	The details of my work	How many work tasks I can complete

Construct / Variable: Innovation / Individual Innovativeness
Source: Hogan et al., 2011; Janssen et al., 2016; Wellbourne et al., 1998.
Scale: 1 = Strongly disagree; 5 = Strongly agree
Prompt: "To what extent do you agree with each statement below?"

Factor	Question
INN01	I provide our clients with services/products that offer unique benefits superior to those of our competitors.
INN02	I provide innovative ideas and solutions to clients.
INN03	I seek out novel ways to tackle problems
INN04	I come up with new ideas.
INN05	I work to implement new ideas
INN06	I find improved ways to do things
INN07	I create better processes and routines
INN08	I am innovative in coming up with ideas for new service concepts.

Factor	Question
INN09	I experiment with new service concepts.
INN10	I align new service offerings with our current business and processes.

Prompt: What is your job function (choose one)?

Factor	Question
DIV01	In which department do you work? Management Sales Marketing Accounting Finance Human Resources Technology and Equipment Operations Other

Demographic Questions:
Prompt: Please answer the questions below.

Factor	Question
SIZ01	Approximately how many members are (were) in the team with which you work(ed) most often (choose one)? (3-4); (5-7); (more than 7)
SIZ02	For how long have you worked in this team (choose one)? (1-3 years); (4-6 years); (more than 6 years)
HRS01	Approximately how many hours do you work with this team on an average work week (choose one)? (1-4 hours); (5-10 hours); (11-15 hours); (16-20 hours); (more than 20 hours).
AGE01	What is your age? (18-24); (25-34); (35-44); (45-54); (55-59)
ETH01	With what ethnic group do you primarily identify (choose only one)? American Indian/Alaska Native; Asian; Black/African American; Hispanic/Latino; Native Hawaiian/Other Pacific Islander; White
GEN01	What is your gender? male; female; non-binary/third gender; prefer not to say

APPENDIX C

EXPLORATORY FACTOR ANALYSIS: FACTOR MATRIX

Rotated Factor Matrix[a]

	Factor								
	1	2	3	4	5	6	7	8	9
SUP01	.666								
SUP02	.665								
SUP03	.652								
SUP04	.724								
SUP05	.812								
SUP06	.777								
SUP07	.740								
SUP08	.702								
VIS01		.726							
VIS02		.653							
VIS03		.663							
VIS04		.758							
VIS05		.590							
VIS06		.612							
VIS07		.675							
VIS08		.715							
EXT01						.676			
EXT02						.752			
EXT03						.672			
EXT04						.619			
EXT05						.535			
EXT06						.582			
INT02								.501	
INT03								.692	
INT04								.646	
REF01					.616				
REF02					.671				
REF03					.724				
REF04					.811				
REF05					.681				
POW04			.656						
POW05			.706						
POW06			.715						
POW07			.628						
POW08			.525						
POW09			.546						
STA01				.542					
STA02				.608					
STA03				.870					
STA04				.860					
STA05				.877					
REG02_1							.558		
REG03_1							.520		
REG04_1							.781		
REG05_1							.668		

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

APPENDIX D

PILOT STUDY (10/17/2022)

Exploratory Factor Analysis

A total of thirty-five questionnaires were obtained from respondents on Amazon Mechanical Turk. Eleven were discarded as the surveys were completed in less than eight minutes. For the twenty-four remaining questionnaires: Mean time for completion was thirteen minutes; respondent birth year ranged between 1964 and 1997 (mean = 1986; median = 1987); sixteen were male, eight were female; twenty one were White, one Black/African American, one Asian, and one identified as Other; fourteen spend more than 20 hours working with the team, seven spend 5-10 hours, and three spend 16-20 hours; eleven work in teams of 5-7 members, eight in teams of more than 7 members, and five in teams of 3 or 4 members; six work in Technology & Equipment, six in Management, four in Finance, three in Other, two in Accounting, and one each in Operations, Human Resources, and Sales. Because the sample size was small, factor analyses were performed individually for each section of the survey.

Support for Innovation:

A principal axis factor analysis was conducted on the 8 items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KM0 = .757 ("middling" according to Kaiser and Rice, 1974), KMO values for individual items were greater than .681, which is above the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (28) = 102.577, $p < .001$) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate

multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .005).

An initial analysis was run to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 70.05% of the variance. The scree plot was ambiguous and showed inflexions that would justify retaining two or four factors. Parallel analysis using 95th percentile eigenvalue criteria (Green, Xu, & Thompson, 2018) justified retaining two factors. I retained two factors because of the convergence of the scree plot, Kaiser's criterion, and parallel analysis on this value.

The table below shows the factor loadings after rotation. All items were retained during reliability analysis. The first factor (items reverse coded) and second factor subscales had high reliabilities, with Cronbach's alphas = .855 and .830, respectively. All survey items were retained.

Pattern Matrix[a]

	Factor	
	1	2
SUP04	.985	
SUP06	.878	
SUP05	.704	
SUP03	.501	
SUP01		.841
SUP02		.734
SUP08		.718
SUP07		.669

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 5 iterations.

Vision:

A principal axis factor analysis was conducted on the 8 items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KM0 = .564 ("miserable" according to Kaiser and Rice, 1974); KMO values for individual items were greater than acceptable limit of .50, except for items 4 and 5.

Bartlett's test of sphericity (χ^2 (28) = 76.708, $p < .001$) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .02).

An initial analysis was run to obtain eigenvalues for each factor in the data. Three factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 75.52% of the variance. The scree plot was ambiguous and showed inflexion that would justify retaining one, three or five factors. One factor was kept.

Factor Matrix[a]

	Factor 1
VIS06	.750
VIS02	.740
VIS03	.650
VIS07	.535
VIS05	.509
VIS01	.428
VIS08	.397
VIS04	.344

Extraction Method: Principal Axis Factoring.

a. 1 factors extracted. 7 iterations required.

The table below shows the unrotated factor matrix. Nonredundant residuals with absolute values greater than .05 was 71%, above acceptable maximum level of 50% for good model fit. One item was dropped during scale reliability analysis (item 4). Cronbach's alpha = .771, above acceptable level of .70.

All survey items were retained, including item 4, based on relatively weak justification for EFA (low KMO = .564) and expected importance of the item as a manifestation of the latent variable *vision* within the context of individuals who are part of a team: "To what

extent do you think your team's objectives are clearly understood by other members of the team?"

External Communication:

A principal axis factor analysis was conducted on the 13 items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KM0 = .502 ("miserable" according to Kaiser and Rice, 1974); Five individual KMO values were lower than acceptable limit of .50. Bartlett's test of sphericity (χ^2 (78) = 122.092, p < .002) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .001).

An initial analysis was run to obtain eigenvalues for each component in the data. Four factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 68.35% of the variance. The scree plot was ambiguous and showed inflexion that would justify retaining three or five factors. Three factors were kept.

Table below shows the rotated factor matrix. Removal of any item with cross loading produced KMO measures below .50. A two-factor solution was explored, with similar outcomes. EFA was terminated and all items were retained.

Pattern Matrix[a]

	Factor		
	1	2	3
EXT01	.768	-.192	
EXT06	.759		
EXT07	.380		-.253
EXT09	.335	-.122	
EXT08	.233	.193	.142
EXT03	.357	-.867	
EXT04	.258	-.764	
EXT11	.476	.492	-.387
EXT12	.452	.466	-.264
EXT13		.394	
EXT05	-.143		-.846
EXT10		.182	-.703
EXT02	.157	-.388	-.657

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Goal Interdependence:

A principal axis factor analysis was conducted on the four items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KM0 = .736 ("middling" according to Kaiser and Rice, 1974); KMO values for individual items were greater than .691, which is above the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (6) = 18.834, $p < .005$) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .405).

An initial analysis was run to obtain eigenvalues for each factor in the data. One factor had eigenvalues over Kaiser's criterion of 1 and explained 56.42% of the variance. The scree plot showed inflexion that would justify retaining one factor. One factor was kept because of the scree plot and Kaiser's criterion on this value.

The table below shows the unrotated factor matrix. All items were retained during reliability analysis. Cronbach's alpha = .706, above acceptable level of .70. All survey items were retained.

Factor Matrix[a]

	Factor 1
INT02	.817
INT04	.661
INT01	.638
INT03	.473

Extraction Method: Principal Axis Factoring.

a. 1 factors extracted. 11 iterations required.

Cohesion:

A principal axis factor analysis was conducted on the seven items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure, KM0 was .556 ("miserable" according to Kaiser and Rice, 1974); KMO values for two individual items were less than the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (21) = 74.469, p < .001) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .023).

An initial analysis was run to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser's criterion of 1 and explained 66.69% of the variance. The scree plot was ambiguous and showed inflexions that would justify retaining one, two, or five factors. One factor was retained. The table below shows the unrotated factor matrix.

Factor Matrix[a]

	Factor 1
COH07	.841
COH04	.734
COH02	.687
COH06	.583
COH05	.570
COH03	.512
COH01	.493

Extraction Method: Principal Axis Factoring.

a. 1 factors extracted. 6 iterations required.

Nonredundant residuals with absolute values greater than .05 was 85%, above maximum acceptable level of 50% for good model fit. Scale reliability analysis showed Cronbach's alpha = .801, above acceptable level of .70. All survey items were retained.

Task Reflexivity:

A principal axis factor analysis was conducted on the five items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KM0 = .752 ("middling" according to Kaiser and Rice, 1974), KMO values for individual items were greater than .712, which is above the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (10) = 37.141, $p < .001$) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .163).

An initial analysis was run to obtain eigenvalues for each factor in the data. One factor had eigenvalues over Kaiser's criterion of 1 and explained 58.83% of the variance. The scree plot showed inflexion that would justify retaining one factor. One factor was retained.

The table below shows the unrotated component matrix. The Reflexivity scale had high reliability, with Cronbach's alpha = .822. All survey items were retained.

Factor Matrix[a]

	Factor 1
REF02	.758
REF04	.753
REF01	.730
REF05	.661
REF03	.577

Extraction Method: Principal Axis Factoring.

a. 1 factors extracted. 5 iterations required.

Power Difference:

A principal axis factor analysis was conducted on the 17 items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure, KM0, was .599 ("miserable" according to Kaiser and Rice, 1974); KMO values for four individual items were below the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (136) = 271.032, $p < .001$) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, but determinant of the correlation matrix is below minimum acceptable level of .00001 (Determinant = 7.35 E-8).

An initial analysis was run to obtain eigenvalues for each factor in the data. Five factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 77.31% of the variance. The scree plot showed inflexion that would justify retaining two factors. Parallel analysis using 95^{th} percentile eigenvalue criteria justified retaining two factors. Two factors were retained because of the convergence of the scree plot and parallel analysis on this value.

Five items (items 2, 4, 5, 13, 16) were sequentially removed (removed one item, ran the analysis, then removed another, and so forth) because the items had no loadings, or the items had loadings with opposite signs. The Kaiser-Meyer-Olkin measure, KM0, was .587 ("miserable" according to Kaiser and Rice, 1974); KMO values for four individual items were below the acceptable limit of .50. Individual variable correlations do not indicate multicollinearity and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = 8.562 E-5). Nonredundant residuals with absolute values greater than .05 was 68%, above maximum acceptable level of 50% for good model fit.

The table below shows the factor loadings after rotation. All items were retained during reliability analysis. The first and second factors had high reliabilities, with Cronbach's alphas = .875 and .808, respectively.

Pattern Matrix[a]

	Factor 1	Factor 2
POW06	.822	
POW11	.785	
POW07	.768	
POW10	.737	
POW09	.675	
POW08	.607	
POW01	.581	
POW12	.571	
POW03	.539	
POW15		.876
POW14		.795
POW17		.701

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Ultimately, three items were removed from the survey: item 2 ("my supervisor can provide me with special benefits"), 5 ("my supervisor can make my work difficult for me"), and 13 ("In my interactions with my supervisor, I can get him/her/them to listen to what I say"). Items 4 and 16 were retained, believed important to measure power differences, including the *coercive* dimension of power.

Status Differences:

A principal axis factor analysis was conducted on the 7 items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure, KM0 = .758 ("middling" according to Kaiser and Rice, 1974); KMO value for one individual item below the acceptable limit of .50. Bartlett's test of sphericity (χ^2 (21) = 94.403, $p < .001$) indicated significant pairwise relationships between the items. Individual variable correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .009).

An initial analysis was run to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 72.36% of the variance. The scree plot was ambiguous and showed inflexions that would justify retaining one or three factors. One factor was retained.

The table below shows the unrotated factor loadings. Two items, 1 ("I possess high status in my work team) and 6 ("I am usually comfortable offering my opinions to any team member"), were dropped because of low factor loading. All remaining items were retained during reliability analysis. The scale had high reliability, with Cronbach's alpha = .917. Items 1 and 6 were removed from the survey.

Factor Matrix[a]

	Factor 1
STA03	.893
STA07	.871
STA02	.821
STA04	.809
STA05	.760
STA01	-.382
STA06	.215

Extraction Method: Principal Axis Factoring.

a. 1 factors extracted. 6 iterations required.

Regulatory Focus:

A principal axis factor analysis was conducted on the 6 items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure, KM0 = .525 ("miserable" according to Kaiser and Rice, 1974); KMO value for one individual item below the acceptable limit of .50. Individual variable correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = .198).

An initial analysis was run to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 61.14% of the variance. The scree plot was ambiguous. Two factors were retained because of the convergence of Kaiser's criterion on this value.

The table below shows the rotated factor matrix. Most items have small loadings (below .5), cross loadings or opposite signs to the other item factor loadings. EFA was suspended.

Pattern Matrix[a]

	Factor	
	1	2
REG05_1	-.849	
REG06_1	.765	.410
REG01_1	-.299	
REG04_1		.970
REG02_1	.112	.384
REG03_1	-.346	.352

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 16 iterations.

Individual Innovativeness:

A principal axis factor analysis was conducted on the 10 items, with oblique rotation (direct oblimin.). The Kaiser-Meyer-Olkin measure, KM0 = .808 ("meritorious" according to Kaiser and Rice, 1974); KMO values for individual items were greater than .645, which is above the acceptable limit of .50. Bartlett test of sphericity (χ^2 (45) = 173.889, p < .001) indicated significant pairwise relationships between the items. Individual variable

correlations do not indicate multicollinearity, and determinant of the correlation matrix is above minimum acceptable level of .00001 (Determinant = 9.775 E-5).

An initial analysis was run to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 72.57% of the

variance. The scree plot showed inflexion that would justify retaining one or three factors. Parallel analysis justified retaining one factor. One factor was retained because of the convergence of the scree plot and parallel analysis on this value.

The table below shows the unrotated factor matrix. Nonredundant residuals with absolute values greater than .05 was 60%, above acceptable maximum level of 50% for good model fit. All remaining items were retained during reliability analysis. The scale had high reliability, with Cronbach's alpha = .929. All items were retained.

Factor Matrix[a]

	Factor 1
INN09	.924
INN08	.903
INN06	.851
INN02	.787
INN05	.757
INN07	.743
INN01	.695
INN04	.694
INN10	.618
INN03	.575

Extraction Method: Principal Axis Factoring.

a. 1 factors extracted. 5 iterations required.

APPENDIX E

REGRESSION ANALYSES

Table 10

Regression Analyses: Moderation effect of Team Size, Member Tenure, and Hours Worked (all categories) [a]

Variable	△ R square	B	SE	β	t
Reflexivity x Team Size:					
3-4 members	.01	.24	.17	.11	1.43
4-6 members	.02	-.30	.16	-.19	-1.91
> 7 members	.00	.14	.14	.08	.98
Goal Interd. x Tm. Size:					
3-4 members	.00	.19	.29	.06	.66
4-6 members	.02	-.40	.21	-.22	-1.87
> 7 members	.02	.39	.23	.16	1.67
Cohesion x Team Size:					
3-4 members	.01	.02	.31	.01	.07
4-6 members	.01	-.29	.19	-.16	-1.56
> 7 members	.02	.32	.19	.17	1.67
Vision x Team Size:					
3-4 members	.00	-.06	.25	-.02	-.23
4-6 members	.02	-.35	.20	-.20	-1.73
> 7 members	.03	.46	.22	.21	2.13*
Ext. Comm. x Tm. Size:					
3-4 members	.01	-.17	.25	-.06	-.68
4-6 members	.00	-.09	.20	-.04	-.44
> 7 members	.01	.17	.19	.09	.87
Ext. Comm. x Tenure:					
1-3 years	.01	-.24	.19	-.14	-1.25
4-6 years	.00	.13	.24	.05	.55
> 6 years	.00	.16	.21	.07	.76

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

Table 10 (continued)

Variable	△ R square	B	SE	β	t
Vision x Tenure:					
1-3 years	.00	.04	.20	.02	.20
4-6 years	.00	-.09	.28	-.03	-.32
> 6 years	.00	.01	.21	.00	.04
Cohesion x Tenure:					
1-3 years	.00	-.07	.19	-.04	-.34
4-6 years	.00	.05	.22	.02	.23
> 6 years	.00	.04	.20	.02	.19
Goal Interdep. x Tenure:					
1-3 years	.00	-.11	.21	-.06	-.53
4-6 years	.00	.05	.32	.01	.14
> 6 years	.00	.12	.23	.05	.53
Reflexivity x Tenure:					
1-3 years	.00	.01	.14	.01	.06
4-6 years	.00	-.01	.14	.00	-.04
> 6 years	.00	-.03	.16	-.01	-.19
Ext. Communication x Hrs. Worked:					
1-4 hours	.00	.20	2.37	.01	.08
5-10 hours	.00	.18	.71	.02	.25
11-15 hours	.00	-.01	.25	-.01	-.06
16-20 hours	.01	.26	.29	.08	.88
> 20 hours	.00	-.16	.21	-.10	-.77
Vision x Hrs. Worked:					
1-4 hours	.00	.57	3.28	.02	.17
5-10 hours	.01	.31	.36	.08	.88
11-15 hours	.00	-.16	.24	-.07	-.69
16-20 hours	.02	.51	.33	.14	1.56
> 20 hours	.01	-.21	.21	-.13	-1.02

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

Table 10 (continued)

Variable	△ R square	B	SE	β	t
Cohesion x Hrs. Worked:					
1-4 hours	.00	-.17	1.33	-.01	-.13
5-10 hours	.00	.25	.48	.04	.54
11-15 hours	.01	-.24	.22	-.10	-1.11
16-20 hours	.01	.52	.33	.12	1.58
> 20 hours	.00	.03	.19	.02	.15
Goal Interdependence x Hrs. Worked:					
1-4 hours	.00	.15	1.83	.01	.08
5-10 hours	.01	.81	.67	.10	1.20
11-15 hours	.01	-.20	.23	-.08	-.86
16-20 hours	.03	.84	.40	.19	2.12*
> 20 hours	.01	-.22	.22	-.13	-1.01
Reflexivity x Hrs. Worked					
1-4 hours	.00	-1.37	2.50	-.10	-.55
5-10 hours [b]	.02	-.54	.40	-.16	-1.36
11-15 hours	.00	-.21	.21	-.07	-1.01
16-20 hours	.01	.23	.20	.09	1.14
> 20 hours	.01	.18	.14	.14	1.27

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

Table 11

Regression Analyses: Moderation effect of Age (all categories) [a]

Variable	△ R square	B	SE	β	t
External Communication x Age:					
18-24 years	--	--	--	--	--
25-34 years	.00	.11	.23	.05	.49
35-44 years	.00	.06	.19	.04	.34
45-54 years	.01	-.25	.23	-.10	-1.10
55-59 years	.00	-.08	1.01	-.01	-.07
Vision x Age:					
18-24 years	--	--	--	--	--
25-34 years	.00	-.01	.24	.00	-.04
35-44 years	.00	-.02	.20	-.01	-.11
45-54 years	.00	-.05	.23	-.02	-.20
55-59 years	.00	.23	.87	.03	.27
Cohesion x Age:					
18-24 years	--	--	--	--	--
25-34 years	.01	.32	.25	.11	1.29
35-44 years	.00	.09	.19	.05	.50
45-54 years	.02	-.40	.22	-.17	-1.84
55-59 years	.00	.34	1.02	.04	.34
Goal Interdependence x Age:					
18-24 years	--	--	--	--	--
25-34 years	.00	.16	.29	.05	.57
35-44 years	.01	.24	.21	.13	1.12
45-54 years	.02	-.43	.23	-.17	-1.84
55-59 years	.00	.27	.92	.03	.30

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

Table 11 (continued)

Variable	△ R square	B	SE	β	t
Reflexivity x Age:					
18-24 years	--	--	--	--	--
25-34 years	.00	.13	.15	.07	.84
35-44 years	.00	.04	.14	.03	.30
45-54 years	.01	-.18	.17	-.09	-1.09
55-59 years	.00	-.33	.46	-.05	-.72

[a] Dependent Variable: Individual Innovativeness
[b] Estimates of SE and t using robust standard errors, HC3 method (Hayes & Cai, 2007)
* p < .05, ** p < .01, *** p < .001

APPENDIX F

IRB APPROVAL

FIU | FLORIDA INTERNATIONAL UNIVERSITY

Office of Research Integrity
Research Compliance, MARC 414

MEMORANDUM

To: Dr. George Marakas
CC: Luis Giralt

From: Maria Melendez-Vargas, MIBA, IRB Coordinator

Date: May 18, 2022

Protocol Title: "C3D-GIRALT-INNOVATION"

The Florida International University Office of Research Integrity has reviewed your research study for the use of human subjects and deemed it Exempt via the **Exempt Review** process.

IRB Protocol Exemption #: IRB-22-0215 **IRB Exemption Date:** 05/18/22
TOPAZ Reference #: 111782

As a requirement of IRB Exemption you are required to:

1) Submit an IRB Exempt Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved prior to implementation.
2) Promptly submit an IRB Exempt Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.
3) Submit an IRB Exempt Project Completion Report Form when the study is finished or discontinued.

Special Conditions: N/A

For further information, you may visit the IRB website at http://research.fiu.edu/irb.

MMV/em

VITA

LUIS E. GIRALT

1987	B.A., Economics University of Florida Gainesville, Florida
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1989-1993	Relationship Manager Citibank N.A. Quito, Ecuador
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1995-2001	Finance Professional Vice President Merrill Lynch Private Finance Ltd. Miami, Florida
2001-2023	Private Banker / Team Leader Managing Director Citi Private Bank Miami, Florida
2020-2023	Doctoral Candidate Florida International University Miami, Florida

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