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Testing the Congruence of Espousals and Enactments Predicting Team Innovation

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by

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Abstract

This study employs a social identity perspective (Hogg, 2008) to test whether perceptions of both espoused and enacted values drive team innovation, and tests whether both their level and congruence determine their impact on innovation. This relationship is tested in a multilevel latent polynomial regression model (MLPM) framework (Zyphur, Zammuto, & Zhang, 2016). The study also leverages block variable procedures (e.g., Edwards & Cable, 2009) to model the combined effects of espoused and enacted values, and tests whether these combined effects mediate between leader behavior and team innovation. This represents the first test of Zohar and Hofmann's (2012) proposition that the alignment of espoused and enacted values should guide group behavior because it captures the way groups interpret their normative environment. Results indicate both espoused and enacted values exert significant, positive effects on team innovation when modeled together, and that the highest innovation occurs in teams where perceptions of both values are high. Tests of the mediation hypothesis revealed that the mediation of leader behavior on team innovation flowed primarily through enacted values (climate for innovation), rather than the combined effects of espoused and enacted values. This is the first study to demonstrate the utility of block variable procedures to model and test the combined effects of two congruence variables as a mediator at the group level. The MLPM results suggest the need to include espoused values to explain more fully the impact of climate-based perceptions on team innovation. Implications and future directions are discussed.

Introduction

Schneider, Gonzalez-Roma, Ostroff, and West (2017) assert the greatest challenge for researchers in the fields of climate and culture is to address the artificial barrier between the two constructs. Although the link between climate and culture remains largely unexamined (Ostroff, Kinicki & Muhammad, 2012), Zohar and Hofmann (2012) offer a testable empirical solution to address this challenge. Eminent climate scholars have lauded the potential of their solution to integrate these two essential elements of organizational analysis (Ehrhart, Schneider, & Macey, 2013). Specifically, Zohar and Hofmann (2012) developed an integrative framework that proposes organizational members use the comparison of espoused and enacted values, which are facet-specific and climate-based, as a critical part of the meaning of culture's deep level. They note applying their measurement considerations could facilitate the assessment of multiple climates within an organization, as well as mapping of these multiple climates onto corresponding elements of culture (Zohar & Hofmann, 2012). Importantly, there is a simpler starting point than mapping multiple climates and culture elements in a single model or study. Empirically testing the simple proposition at the center of Zohar and Hofmann's (2012) model, that the alignment of espoused and enacted values guides member behavior and performance, is an important launching point from which future investigations of multiple climates and culture elements can build. This study represents that first step. It tests whether the alignment, both level and congruence, of a single set of facet-specific espoused and enacted values are a critical driver of performance, measured as team innovation, and whether they mediate the impact of leader behavior on performance.

This study offers three contributions to climate and culture research. First, using a theoretical foundation in cognitive and general social identity perspectives (e.g., Cialdini, 2007; Hogg, 2008) it tests whether espoused and enacted values (specific climate) provide important normative information teams use together to guide their behavior. Supporting this normative perspective, other scholars note the psychological mechanisms of information processing and social norms that drive organizational culture's effects provide stronger theoretical grounds to explain how culture impacts performance (Chatman & O'Reilly, 2016). Current research supports specific climates alone are strong predictors of numerous types of performance (see Schneider, Erhart, & Macey, 2013 for a review). By demonstrating climate's influence on performance is more fully explained when including espoused values, this study offers a new conceptualization of the normative information climate provides and shows evidence of its incremental validity.

Second, this study tests the measurement foundation of a theoretical framework that can help integrate climate and culture research. If these theoretical and measurement perspectives are further aligned, it will enable researchers to assess the impact of multiple climates on performance by forming configurations of several espoused-enacted value combinations to evaluate the combined effect of relative climate priorities, and these configurations can be related to a variety of culture configurations (Zohar & Hofmann, 2012). Climate and culture are related and essential components of organizational analysis and description, yet few empirical studies examine or explain how they are connected (Ostroff et al., 2012; Schneider et al., 2017). This makes an examination anchored in a framework describing their link worthwhile. At the same time, focusing on a refined piece of the more complex model helps makes the current study feasible, increasing the probability future studies may build on its findings.

Third, this study offers a methodological contribution. Congruence has not been modeled or tested as a mediator in published research due to the difficulties of modeling and interpreting the multiple polynomial terms defining congruence as a single mediator (cf. Edwards, 2009) and the challenges of combining multiple observed and latent variables as a single mediator in a multilevel framework (c.f., Edwards, 2009; Preacher, Zyphur, & Zhang, 2016; Muthén & Muthén, 1998-2017; Zyphur et al., 2016). By first using multi-level latent polynomial regression modeling (MLPM) to distill the between-level variance from enacted values, block variable procedures (Edwards & Cable, 2009; Heise, 1972; Igra, 1979) can be leveraged to create a single mediator that represents congruence at the team level. Using these techniques, this study models the combined effects of the alignment of espoused and enacted values and tests whether they mediate leadership's impact on performance. Demonstrating the utility of this novel technique to model congruence represents a methodological contribution to climate and culture literature, and to congruence literature more broadly. Collectively, this study refines the understanding of how climate drives team performance and of a larger framework for the integration of the climate and culture constructs in future investigations.

Climate, Culture, and the Zohar & Hofmann (2012) Model

A short description of the climate and culture constructs and of Zohar and Hofmann's (2012) model is a helpful starting point, because it provides the conceptual foundation for the much simpler theoretical model tested here. Schneider et al. (2013) define climate as the shared meaning attached to practices, policies, and procedures and to the relevant behaviors that are valued, rewarded, supported, and expected. Within organizational climate, there also exist molar and specific climates, with specific climates having both process climates (e.g., procedural justice climate) and strategic climates focused on achieving external criteria (e.g., safety or innovation) (Ehrhart et al., 2013; Schneider et al., 2013). (For a thorough review of molar climates see Ehrhart et al., 2013). Proponents of studying specific climates emphasize their practical and theoretical advantage over molar climates because they yield stronger links with outcomes of interest due to their specific nature (Ehrhart et al., 2013; Schneider, 1975). Importantly, Zohar and Hofmann (2012) consider specific climates as equivalent to enacted values. Climate for innovation is a commonly studied specific, strategic climate (e.g., Anderson & West, 1998; King, Chermont, West, Dawson, & Hebl, 2007), making it useful for a direct examination of espoused and enacted values as predictors of performance.

Although there are more than 50 different definitions of culture across its broad literatures (Verbeke, Volgering & Hessels, 1998; Zohar & Hofmann, 2012), Schein's (2017) definition is the most comprehensive and widely adopted (Ostroff et al., 2012). This makes it useful for highlighting culture's major components. Schein (2017) defines culture as:

> The accumulated shared learning of [a] group as it solves its problems of external adaptation and internal integration; which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, feel, and behave in relation to these problems. (p. 6)

Schein's (2017) model also stipulates culture has three levels. Level one Schein calls visible "artifacts", which are what a member sees and feels in an organization. Level two is espoused beliefs and values. These are the ideals, aspirations, ideologies, and rationalizations of organizational members that may be congruent or incongruent with behavior of organizational members (Schein, 2017). Level three is the basic underlying assumptions, which are the "deepest" level of culture and form the core of its meaning. Importantly, the deep level of culture drives behavior and emotions for organizational members because it provides a cognitive appraisal of what employees should pay attention to and how they should behave across organizational contexts (Ostroff et al., 2012; Schein, 2017). Some scholars suggest culture's deep level contains other elements. For example, Zohar and Hofmann (2012) assert the deep level of culture contains both values and basic assumptions. Despite these differences, consistent with Schein, many theoretical models converge on the idea that culture's deep level generates an integrative cognitive interpretation of multiple elements that guides member behavior (Allaire & Firsirotu, 1984; Detert, Schroeder, & Mauriel, 2000; Schein, 2017; Zohar & Hofmann, 2012).

Zohar and Hofmann's (2012) model addresses the deep level of culture specifically. Their model describes climate as a facet-specific surface layer phenomenon that organizational members use to interpret the deep level of culture. Espoused and enacted values (espousals and enactments) are central to their model. They consider climate as equivalent to enacted values, which reflect the group's shared perceptions of procedures, practices and behaviors that are valued, rewarded, and supported with respect to a specific strategic outcome such as innovation (e.g., Schneider, 1990; Schneider et al., 2013). Their model specifies enacted values are only one part of the lens through which the deep layer of culture is interpreted. The other part of the lens is espoused values, which come from the group's manager and reflect what these group leaders "say" is important for the group. Their model asserts that members compare espousals and enactments to interpret the deep level of culture. Thus, the comparison of espoused and enacted values is theorized to be a critical link between the climate and culture constructs and a driver of group behavior and performance. See Figure 1 showing Zohar & Hofmann's (2012) model.

To be clear, Zohar and Hofmann's (2012) model is not tested in the present study. But, at the core of their model is a simple empirical proposition that will be tested here. Their model asserts the comparison of espoused and enacted values within the group is used to determine the meaning of that group's deep level of culture with respect to a particular facet, such as innovation, or safety. If that is true, then this comparison should be a driver of performance, because, across numerous theoretical models the cognitive interpretation of culture's deep level guides member behavior, as mentioned above. This yields a simple starting point and the model tested in the present study.

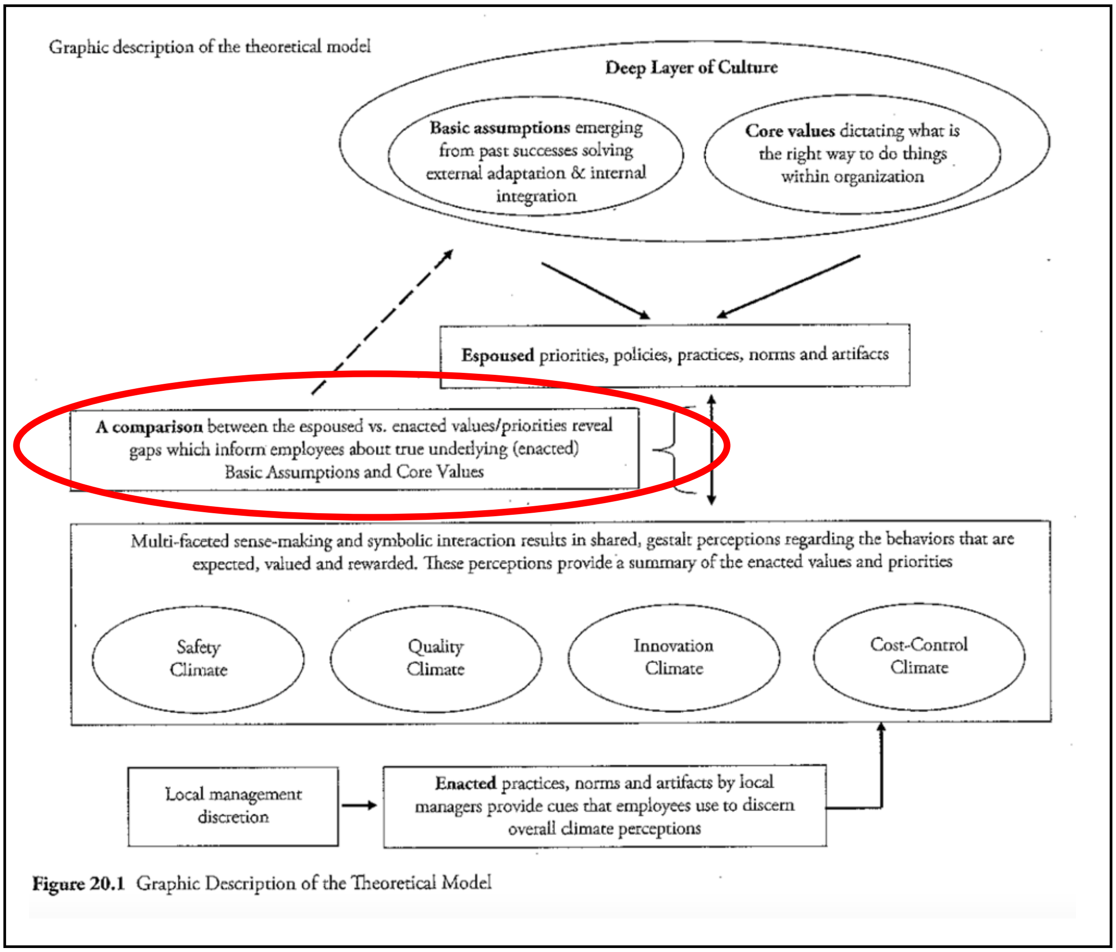

Figure 1

Zohar & Hofmann's (2012) Integrative Theoretical Model of Climate and Culture

Note: Red circle is not in the original model and is added to highlight the comparison between espoused and enacted values that is central to the current study's model.

The model tested here proposes that the comparison of espoused and enacted values at the group level determines group behavior, and ultimately group performance. See Figure 2 isolating the current study's proposition in a heuristic model. It is intentionally labeled "heuristic" to denote it is not comprehensive nor does it include all possible linkages. Rather, it highlights the most critical relationships for integrating espoused and enacted values at the collective level (c.f., Ostroff et al., 2012). With respect to "group" level as indicated in Figure 2, the current study focuses on the team level, specifically, because teams are cultural "building blocks" for many organizations and they're the most salient and proximal referent in the organizational hierarchy for many employees (Hartnell, 2020; Morgeson, DeRue & Karam, 2010). This makes the shared perceptions of espousals and enactments within the team versus higher levels of analysis likely to create greater within team agreement and between team variance (Bliese, 2000) leading to stronger links with collective performance (Ehrhart et al., 2013; Schneider, 1975) and enhancing the ability to test the inter-relationship of espoused and enacted values and its impact on team innovation.

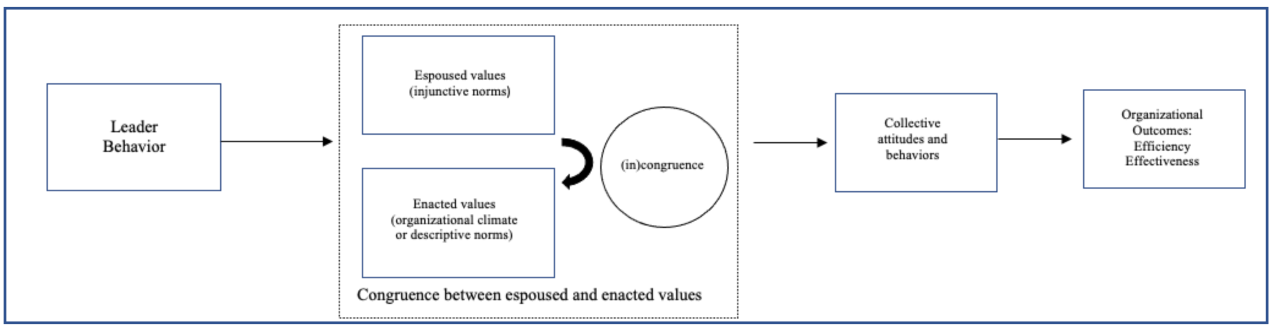

Figure 2

Heuristic Model of the Comparison of Espoused and Enacted Values

Note: The entire model is positioned at the group level and assumes the model is embedded in a multi-level context, with inputs and outputs to/from higher and lower levels of analysis, and feedback loops not pictured. The latent "(in)congruence" variable (circle) denotes polynomial regression analysis integrating level and congruence for both normative predictors.

Several studies have demonstrated specific climates (i.e., enacted values) at the group level drive a variety of performance types (Schneider et al., 2012) such as innovation (e.g., Abbey & Dickson, 1983; Anderson & West, 1998; Eisenbeiss, van Knippenberg, & Boerner, 2008), safety (e.g., Christian, Bradley, Wallace, & Burke, 2009; Zohar & Luria, 2004), and customer service (e.g., Jong, Ruyter, & Lemmink, 2005; Schneider, Macey, Lee & Young, 2009). For the comparison of espoused and enacted values to be useful to conceptualize how team members interpret climate information, it is critical to show that both espoused and enacted values predict performance when they are modeled together. This would demonstrate the utility of including espoused values in the modeling of climate above and beyond enacted values alone, since empirical findings already demonstrate a strong link between enacted values and performance. The social identity perspective offers theoretical and empirical support for this conceptualization and for the corresponding proposition tested here.

The Social Identity Perspective Applied to Espoused and Enacted Values

A general social identity perspective specifies that the impact of norms is due primarily to how they are interpreted in reference to one's in-group based on the process of self-categorization (Hogg, 2008). This process leads to the creation of cognitive "prototypes" for behavior within the group and a tendency to attribute group behaviors to those prototypes (Hogg, 2008). With greater agreement within the group on a particular prototype, there is greater consensus on attitudes and a more homogenous set of norms (Hogg, 2008). Many psychologists further distinguish norms as injunctive and descriptive (e.g., Cialdini, 2007). Injunctive norms are one's view of what others believe to be appropriate conduct. They represent collective perceptions of the organization's aspirations; group perceptions of what other people think they "should" do. Groups would derive this type of information from espoused values. Descriptive norms are one's view of what occurs; group member perceptions of what they do in practice. Groups derive this information from enacted values/specific climate (Zohar & Hofmann, 2012).

According to the social identity perspective, when groups form shared perceptions of their norms it renders the confusing perceptual field inherent to organizations more predictable and allows them to plan their actions more effectively (Hogg, 2008). So, the social identity perspective posits the cognitive interpretation of the group's norms guides behavior of its members. Consistent with this discussion, there is strong empirical support that both injunctive and descriptive norms determine collective behavior and performance within groups, and the greatest impacts come from both injunctive and descriptive norms together, rather than either one alone. This has been demonstrated for household energy use (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007), behavior addressing campus issues (Smith & Louis, 2008), safety behavior of construction teams (Gong, Liu, Xiang, & Wang, 2019), and drinking behavior of athletes on sports teams (Graupensperger, Turrisi, Jones, & Evans, 2020).

One additional study is worth describing because it supports the distinctions of the source of normative information within teams as proposed in the current study. Fugas, Melia, and Silva (2011) measured the impact on worker safety behavior of both injunctive and descriptive norms for the workers and the supervisors in a passenger transportation company. Descriptive norms of workers rather than supervisors impacted worker safety behavior, while the injunctive norms from the supervisor rather than the workers impacted worker safety behavior. Specifically, if there was agreement among workers about the supervisor's injunctive norms, and those norms were high, the impact of worker descriptive norms on behavior was greater (Fugas et al., 2011). This supports the idea that in teams the source of information for descriptive norms is other group members, while the source of injunctive norm perceptions is the team's leader. Consistent with this study, Zohar and Hofmann (2012) assert espoused value perceptions come from a group's leader, while enacted value perceptions come from a group's specific climates.

Applying this social identity perspective to espousals and enactments yields the empirical proposition tested in the present study. It suggests espoused values are injunctive norms because they tell members what "ought to be" and enacted values are descriptive norms because they tell members what "is" (e.g., Zohar & Hofmann, 2012; Rohan, 2000). Research on human-resource systems further supports this interpretation and suggests congruence between espoused and enacted values will drive performance by clarifying guidance to organizational members on how to best interact to achieve organizational goals (e.g., Bowen & Ostroff, 2004; Ostroff et al., 2012). This removes ambiguity by aligning what the team perceives "ought to" be (espousals), with what the team experiences (enactments; Zohar & Hofmann, 2012). Using team innovation as an example, the social identity perspective suggests teams are likely to compare espoused and enacted values to determine their group behavior and performance. The level of team innovation should be determined not only by the climate for innovation (enacted value), but by both espoused and enacted values within the team.

Hypothesis 1. *The leader's espoused value for innovation and the team's enacted value (climate) for innovation will predict team innovation.*

Why Examine Congruence and Why Utilize MLPM?

The alignment between espoused and enacted values as central to their impact implies the need to utilize a congruence framework to fully understand their joint effects. Multiple studies have shown evaluating congruence using polynomial regression analysis (PRA) offers a more comprehensive and accurate test of the combined impact or alignment of two predictors than the use of difference scores for the same purpose (e.g., Edwards, 1994a; Edwards, 1994b; Johns, 1981). These studies also demonstrate PRA combined with response surface methodology (RSM) allows for a more thorough description of the combined impact of the two predictors (e.g., Edwards & Harrison, 1993; Edwards & Parry, 1993; Zyphur et al., 2010). The impact of espousals and enactments on team innovation can be predicted with PRA using Equation 1:

$$TI = \beta_1 + \beta_2 ESP + \beta_3 ENA + \beta_4 ESP^2 + \beta_5 ESP*ENA + \beta_6 ENA^2 + \varepsilon, \quad (1)$$

where TI is team innovation, ESP is espoused value for innovation, ENA is enacted value for innovation, and the squared and interaction terms estimate the joint effects of both ESP and ENA on TI (e.g., Zyphur et al., 2016). A problem arises if one wants to apply the principles of PRA to multilevel data, as would be required in the case of climate perceptions. PRA applied to multi-level data (i.e., collected at the individual level and aggregated to the team level) can amplify the bias from sampling error when squaring variables or creating interactions terms (Moosbrurger, Schermelleh-Engel, Kelava, & Klein, 2009; Zyphur et al., 2016). Although traditional multi-level modeling techniques can correct for this sampling error, they don't allow modeling latent squared and product terms, so one can't compute the latent standings on the predictor variables called for by Equation 1. Multilevel latent polynomial regression modeling (MLPM), which is PRA applied to multi-level structural equations modeling, is used because in addition to correcting for sampling error, it allows estimating latent team-level standings for the squared and interaction terms required for the PRA predictors (Zyphur et al., 2016). Thus, MLPM is chosen because it can systematically evaluate the combined effects of two predictors on an outcome while addressing the sampling error issues that are amplified when using multi-level data.

Congruence in the present study describes the degree of similarity perceived by the team between what is espoused as important and what is enacted as important (e.g., Zohar & Hofmann, 2012) with respect to team innovation (e.g., Zyphur et al., 2016). As Equation 1 indicates, using MLPM not only assesses the impact of the mean level of each predictor on the outcome, but assesses how the relationship between the predictors impacts the criterion. Additionally, a three-dimensional RSM plot will be used in conjunction with two key parameters to separately evaluate the impact of level and congruence of the predictors and to evaluate their joint effects. The a_1 parameter is calculated as ($\beta_2 + \beta_3$) from Equation 1 and describes the slope along the line of congruence (Zyphur et al., 2010). This quantifies the effect of the mean level of the two predictors on the outcome. When higher levels of the predictors lead to higher outcomes, a positive, significant slope is expected and the entire RSM plot is inclined upward with the line of congruence. The a_3 parameter is calculated as ($\beta_4 - \beta_5 + \beta_6$) from Equation 1 and describes the curve along the line of incongruence (Zyphur et al., 2016). If the criterion is also positively impacted by congruence of the predictors, the level of the criterion is expected to decrease as the predictor scores become less congruent. This would be reflected by a negative, significant a_3 parameter and an RSM plot that folds downward as it moves away from the line of congruence along the line of incongruence. Finally, if the highest performance is realized when both congruence and level are high, the peak of the response surface should be at the peak of the positively sloped line of congruence. See Figure 3 showing a hypothetical RSM plot corresponding to a positive, significant a_1 parameter and a negative, significant a_3 parameter with optimized performance for high congruence and level. In a measurement sense, MLPM coupled with RSM offers a comprehensive test of the important theoretical considerations implied by Zohar & Hofmann's (2012) focus on alignment.

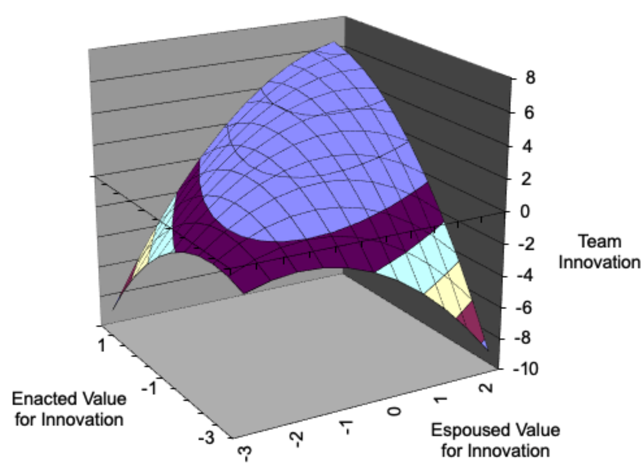

Figure 3

Hypothetical RSM Plot Showing a Positive Effect for Congruence and Mean Level

A computational problem arises when attempting to test congruence as a mediator in this framework because the multiple observed and latent variables that define congruence can't be modeled as both a predictor and an outcome in MLPM as would be required by mediation (Muthén & Muthén, 1998-2017). To overcome this limitation, factor scores and regression coefficients produced from the MLPM can be used to compute a block variable (Edwards & Cable, 2009; Igra, 1979; Heise, 1972) representing the between-level variance for any significant polynomial terms predicting team innovation. This block variable is a weighted linear composite of the terms in the block (Edwards & Cable, 2009). Given the MLPM that generates the block terms will be estimated at the between level only, the variance represented by this block variable will contain only team level variance, which is uncorrelated with individual level variance (Hox & Maas, 2001; Muthén, 1989;1994). While testing the effects of congruence requires separating within and between variance, testing mediation as described above would utilize only between-level (team) variance, and partialing of within versus between level variance has already occurred in the MLPM. As such, when the congruence terms are modeled as mediators in the present study this represents a 2-2-2 mediation (c.f., Preacher et al., 2010), meaning the predictor, mediator, and outcome are all at level 2. Once block variable procedures have been applied, there is no need to test mediation in an MLPM framework. A single-level (team-level) structural equations model assessing the mediation effect of congruence will be less computationally demanding, and directly address the mediation hypothesis at the appropriate level. A more detailed explanation is provided in Appendix A.

How Espoused and Enacted Values Drive Team Innovation

There is a strong theoretical (e.g., Ostroff et al., 2012) and empirical (Chatman, Caldwell, O'Reilly, & Doerr, 2014) basis for the idea that one should measure the relative level or intensity (not just the congruence) of norms to fully explain their impact on performance. Specifically, Chatman and O'Reilly (2016) advise when assessing the impact of norms one should measure their content, consensus, and intensity. Content describes the substance of the norm. Consensus describes the extent to which members agree broadly on the norm. Intensity describes the strength with which the norm is held. In this study, content is captured by using a facet-specific norm (i.e., innovation), consensus is captured because the MLPM will partial and use only between-level (team-level) variance, and strength or intensity is accounted for because the MLPM examines the impact on the criterion across the range of scores for both predictors (Edwards & Cable, 2009; Zyphur et al., 2016). Supporting the importance of measuring the strength of norms, Chatman et al. (2014) found high-tech firms characterized by both high consensus and intensity on the norm of adaptability outperformed firms characterized by lower consensus, lower intensity, or both. The important considerations of measuring multiple components of strength, along with insights of the social identity perspective indicate both congruence and intensity will more fully explain the impact of espoused and enacted values on team innovation. Specifically, the highest team innovation should occur when both the level and congruence of the two norms are high. The question of why this drives team innovation, specifically, still needs to be answered.

Team innovation is defined as the creation and implementation within a group of "ideas, processes, products or procedures" intended to create benefit for that group or its constituents (West & Farr, 1990, pg. 9). Marks, Mathieu and Zaccaro's (2001) team process taxonomy provides a useful framework to explain why both congruence and level of espoused and enacted values drives team innovation. They broadly define team process types as members' interdependent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing taskwork to achieve collective goals. They note emergent states and team processes explain how teams convert inputs to outcomes. Team innovation research supports both congruence and level of espoused and enacted values should impact the affective states of trust and cohesion (emergent states), and the team processes of communication and knowledge integration, both of which predict team innovation (van Knippenberg, 2017).

Trust simply defined is the willingness to be vulnerable to others based on confidence in their upholding expectations and provides a foundation for effective communication and knowledge sharing (e.g., Jones & George, 1998). Trust is foundational to collaborative behavior, such as team innovation, develops in facet-specific ways across organizational units, and reduces social complexity (Lewicki, McAlister, & Bies, 1999). These characteristics of trust converge with the logic underlying the social identity perspective justifying the model tested here. The level and congruence of espoused and enacted values within the team should impact trust, and this trust impacts the effectiveness of information integration and ultimately innovation. For example, both higher level and higher congruence between person and organization values optimizes trust which further predicts communication (Edwards & Cable, 2009). Similarly, Jones and George (1988) found unconditional trust stemmed from common shared values, and this trust led to communication and knowledge sharing. Supporting the trust to innovation link, Barczak, Lassk, and Mulki (2010) found higher trust led to more collaboration and ultimately to higher team creativity, a measure practically identical to innovation as it is defined here. In sum, trust research supports the congruence and level of values among the team predicts the team's level of trust which drives their level of collaboration and team innovation.

Studies show team cohesion functions similarly to trust in a team innovation context. Team cohesion is a multi-dimensional affective state consisting of task commitment, interpersonal attraction, and group pride (Beal, Cohen, Burke, & McLendon, 2003). All three components should drive team innovation. Beale et al. (2003) offer three reasons why group cohesion predicts the communication processes that lead to innovation. The level of cohesion determines the consistency and efficiency of language interpretation (Mickelson & Campbell, 1975), the degree of shared team mental model convergence (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000), and the effectiveness of transactive memory systems (Hollingshead, 1998; 2000; Wegner, Erber, & Raymond, 1991). Consistent with this logic, meta-analyses demonstrate group cohesion is a strong predictor of group performance, a moderate predictor of group performance outcomes (Beal et al., 2003), and that group cohesion is a strong predictor of team innovation (West & Wallace, 1991). Finally, the "expectation, approval and practical support" of team innovation is the strongest predictor of team innovation in meta-analysis (Hülsheger, Anderson, & Salgado, 2009, pg. 1131). This definition of team support for innovation captures both what is expected and what occurs in practice. This provides additional support that the combined interpretation of espoused and enacted values should drive team innovation, because they capture both what is expected and what occurs in practice.

Research on how climate operates within human-resources systems also suggests congruence between espoused and enacted values should drive team innovation consistent with the above discussion. This occurs because such congruence clarifies guidance within the team on how to best interact to achieve organizational goals (e.g., Bowen & Ostroff, 2004; Ostroff et al., 2012). With directions on how to achieve organizational goals unambiguous, key affective states improve and become more consistent (Ostroff et al., 2012), and these affective states enable better communication processes that drive team innovation. In sum, research across a variety of domains suggests, consistent with team process models, team affective states (trust and cohesion) and processes (communication and knowledge integration) (van Knippenberg, 2017; Marks et al., 2001) explain why both the congruence and level of espoused and enacted values determine the level of team innovation. Based on the theoretical and empirical support reviewed in the preceding discussion, espoused and enacted values should drive team innovation as follows:

Hypothesis 2. *The level of espoused and enacted values for innovation will be positively related to team innovation.*

Hypothesis 3. *The congruence of espoused and enacted values for innovation will be positively related to team innovation.*

Hypothesis 4. *The highest team innovation will occur in teams with both higher congruence and higher level of espoused and enacted values.*

Espoused and Enacted Values Mediating Leadership's Impact on Team Innovation

Reilly and DiAngelo (1990) argued that culture is embedded in organizational reality and is the lens through which messages are filtered. Considering climate and culture perceptions as an interpretive lens suggests group perceptions of espoused and enacted values may mediate the impact of innovative leadership behavior on team innovation. Consistent with Reilly and DiAngelo's (1990) perspective, the general social identity approach has been extended to the group's interpretation of leader behavior via leader categorization theory. This provides a grounded theoretical explanation for why this mediation should occur. Leader categorization theory suggests in group contexts leaders exercise influence through perceptions they embody the norms of the group (Hogg, 2008). This occurs because when leaders behave in ways consistent with group norms, group members afford them more influence within the group (Hogg, 2008). More specifically, such leaders are generally more well-liked, attain higher compliance with their requests, identify more strongly with their group, behave in ways benefiting the group, and such leaders are also conferred with prestige and status that differentiates them as the group's leader (Hogg, 2008).

Supporting the idea that the group's interpretation of norms mediates the impact of leader behavior, person-organization value fit at the team level fully mediated the impact of the group leader's transformational leadership on group effectiveness (Hoffman, Bynum, Piccolo, & Sutton, 2011). Hoffman et al.'s (2011) study effectively operationalized congruence between injunctive norms (values) from the team and from the organization. While this study didn't focus on innovation, and used a subjective fit measure, it does suggest the congruence of group-based norms/values is a carrier of the leader's impact on performance. In the present study, the congruence predictors are espoused values from the leader and the enacted values from the team, but the same principle is tested. Based on leader categorization theory, consistent with Hoffman et al. (2011), congruence of norms/values at the group level creates the lens through which the leader's behavior is interpreted.

Although no studies to date measure espoused and enacted values together as mediators, multiple studies support the mediation implied by leader categorization theory by demonstrating climate (enacted values) mediates between specific leader behaviors and collective performance. For example, supportive organizational climate mediated the effects of top management support of equal opportunity on the organization's human-relations performance (Ngo, Foley & Loi, 2009). Zohar and Luria (2004) showed safety climate partially mediated the relationship between a supervisor's safety-related behavior and group injury rate. Finally, Eisenbeiss et al. (2008) found the impact of transformational leadership on team innovation was mediated by team climate for innovation.

The mediation proposed here has not been tested with espoused and enacted values assessed simultaneously. Leader categorization theory predicts the innovative leadership behavior of the team's leader will be mediated by the combined effects of espoused and enacted values for innovation because the interpretation of these norms by the team is a source of the leader's influence. In this way, espoused and enacted values together will act as a mediator because they will carry the effects of the leader's behavior on the team's innovative performance. In line with this evidence, I predict:

Hypothesis 5. *The combined effects of espoused and enacted values for innovation will mediate the impact of innovative leadership behavior on team innovation.*

Method

Sample

Data for this examination were originally collected for the SHL and Gartner 2016 Leadership Validation Study (Johnson, 2019). The de-identified data were provided and authorized for use in this study via a Research Agreement between the author and SHL (see Appendix E). The sample for this analysis included 10,918 respondents nested in 2079 teams from 84 organizations in 11 countries. Leader behavior assessments were collected from the team leader’s manager, and at least three team members per leader. Other measures included a job analysis questionnaire assessing the team leader’s perception of the relevance of multiple values to their job, climate perceptions measured by team members, and team performance measured by the leader and by the team. Importantly, in the team-based ratings of innovative leadership behavior and team performance were highly correlated with the team climate for innovation measure and with each other (bivariate correlations r = .638 to .801, p < .001). So, for innovative leadership the leader behavior rating provided by his or her manager rather than the team was used, and for team innovation the team leader’s rating was used rather than the team’s self-rating. This was done to avoid problems of common method variance that can severely deflate quadratic and interaction terms making them difficult to detect (Siemsen, Roth, & Oliveira, 2010), and to provide a more conservative test of the proposed hypotheses by obtaining criterion and predictor measures from different sources (Podsakoff, Mackenzie, Lee & Podsakoff, 2003).

The average team size for the analyzed data set was 5.81 (SD 2.94) with team sizes ranging from 3 to 44. Of the 84 organizations represented, 40 were publicly traded, for-profit, 26 were private for-profit, and 18 were non-profit. There were 26 industries represented within the 84 organizations ranging from arts and entertainment, to energy, to financial services, to manufacturing, to waste management. There were 7 company types across the 84 organizations, with the type and number of companies per type listed in Table 1 below. Finally, company size was as follows: 1-500 employees: 3 organizations; 500-1,000 employees: 8 organizations; 1,000-5,000 employees: 20 organizations; 3,000-10,000 employees: 13 organizations; 10,000-20,000 employees: 17 organizations; 20,000-50,000 employees: 9 organizations; 50,000-100,000 employees: 11 organizations; greater than 100,000 employees: 3 organizations.

For team climate for innovation, the only variable measured at the individual level, it was important to demonstrate sufficient within group agreement to justify analyzing this variable at the team level. Three primary statistics used to justify aggregation in climate research are the r_{wg}, ICC_1, and ICC_2 (Ehrhart et al., 2013). The r_{wg} is a measure of within group agreement, ICC_1 is a measure of variance explained by clustering/unit membership, and ICC_2 indexes the reliability of group means (Ehrhart et el., 2013). Team climate for innovation produced a r_{wg} of 0.77, an ICC_1 of .17, and an ICC_2 of .48. LeBreton and Senter (2008) consider r_{wg} along a continuum, with values less than .3 indicating no agreement, values between .51 to .70 indicating moderate agreement, and values above .91 indicating very strong agreement. Similarly, they suggest ICC_1 values above .1 indicate a medium effect and values above .25 indicate a large effect (LeBreton & Senter, 2008; Ehrhart et al., 2013). Finally, Ehrhart et al. (2013) note ICC_2 values between .40 and .60 are common when studying climate in smaller units. Using this guidance, team climate for innovation/enacted value showed strong within group agreement, a medium effect of variance explained by clustering, and group reliability typical and appropriate for climate measures in small units.

Table 1

Number of Organizations by Company Type in SHL Data

Company Type	Number of Companies
Domestic company with operations in your country only	17.0
Domestic company with operations in more than one country in a single region	4.0
Domestic company with operations in more than one region around the world	24.0
Foreign multi-national company with operations in several regions around the world	26.0
Government – central, state/provincial, or local	9.0
State- or government-owned company	1.0
Non-profit or non-governmental public service organization	3.0
TOTAL	84.0

Modeling group level effects at the higher *organizational* level was impractical for three reasons. First, given medium effects of team membership (ICC_1 = .17), ignoring the team-level effects in a two-level model (i.e.., level one is individual, and level 2 is organization) may have led to particularly strong bias in standard error estimates and increased risk of Type I and II errors (Bliese & Hanges, 2004). Second, assuming team level was accounted for, model complexity, interpretability, and computational demands of a three-level model with such a large data set (i.e., level one is individual, level 2 is team, and level 3 is organization) would have been unreasonable. Third, the effect of organizational membership was very low. Organization-level

ICC_1 for team climate was .038, meaning less than 4 % of the variance in team climate was attributable to organization membership. The agreement statistics cited earlier along with these three considerations made treating the data as clustered and focusing on the team in a two-level model the most appropriate option to address the proposed hypotheses.

Analysis

Hypotheses 1 was evaluated by estimating a series of multi-level structural equations models in Mplus 8 (Muthén & Muthén, 1998-2017) to evaluate the effect of espoused and enacted values above and beyond enactments alone. The simpler models were compared to the hypothesized model using pseudo-R-squared as a measure of the proportion reduction of variance in level 2 intercepts (Raudenbush & Bryk, 2002), focusing specifically on the variance at the between level attributable to level 2 predictors (Rights & Sterba, 2019). Although these models without latent interactions did not require MLPM, they were saturated models, meaning their Chi-squared statistics will equaled 0 and their fit statistics indicated "perfect" fit and were not comparable (Kline, 2016). Additionally, because they were non-nested models their Chi-squared statistics would not be directly comparable even if they were not saturated (Kline, 2016). Two recommended statistics to compare alternative, non-nested models are the Akaike Information Criteria (AIC) and the Bayes Information Criterion (BIC) (Kline, 2016). AIC and BIC are predictive fit indexes which provide a similar general index of the how likely the model is given the data, with AIC estimates adjusting for model complexity and BIC adjusting for sample size (Kline 2016; Raftery, 1995). Although their absolute values are not meaningful, differences between AIC and BIC for models with the same dependent variables can be compared and favor the lower value. For BIC, specifically, differences greater than 10 are considered "decisive" evidence in favor of the smaller BIC (Lee & Song, 2001). So, comparison of model fit via AIC and BIC was used as additional information to evaluate Hypothesis 1.

Hypothesis 2, 3, and 4 were tested by specifying a latent multilevel polynomial regression model (MLPM; Zyphur et al., 2016) in Mplus 8 (Muthén & Muthén, 1998-2017) with a maximum likelihood estimator robust to non-normality (a detailed description of the analysis is available in Appendix A and code used for the analysis is in Appendix B).The results of the full MLPM containing the higher order terms along with response surface modeling (RSM) were used to fully interpret the independent and combined effects of congruence and level and to calculate and interpret estimates for the a_1 and a_3 parameters. The a_1 parameter ($\beta_2 + \beta_3$), which defines the slope along the line of congruence between espoused and enacted values was used to evaluate Hypothesis 2 predicting higher level of both predictors will be positively related to higher performance. A positive slope indicates that at higher of levels of espoused and enacted values team innovation is higher. The a_3 parameter ($\beta_4 - \beta_5 + \beta_6$), which defines the curve along the line of incongruence, was used to evaluate Hypothesis 3 predicting a congruence effect. A negative, significant parameter indicates that as congruence between espoused and enacted values increases, team innovation increases. Monte Carlo procedures were used to produce confidence intervals for the a_1 and a_3 parameters to evaluate their significance (Zyphur et al., 2016). Finally, a three-dimensional RSM plot (e.g., Edwards & Cable, 2009; Zyphur et al., 2016) was generated to fully interpret the impact of both predictors on innovation across the range of predictor scores, and to evaluate Hypothesis 4. Support for Hypothesis 4 would be indicated if the effect of both congruence and level were significant, and if the peak of the response surface occurred on the line of congruence at the high point of both predictors.

For Hypothesis 5, I used the factor scores and regression coefficients produced from the MLPM to compute a block variable (Edwards & Cable, 2009; Heise, 1972; Igra, 1979) representing the between-level variance for any significant polynomial terms predicting team innovation. This block variable was particularly useful because the other coefficients in the broader regression equation modeling the mediation (i.e., the leadership predictor and the performance outcome) were unaffected, and the variance explained by the block variable was identical to that explained by the equation using the original polynomial terms (Edwards & Cable, 2009). As described earlier, this test estimated a single-level (team-level) structural equations model assessing the indirect effect of innovative leader behavior on team innovation through espoused and enacted values and generate bootstrapped confidence intervals with 5000 estimates to determine the significance of the indirect effect. Support for Hypothesis 5 would be indicated if there was a significant indirect effect of leadership through the block variable, and if this mediation effect was larger than that produced by the individual espoused and enacted value terms alone.

Measures

Team Leader Innovative Leadership Behavior. The team leader's innovative leadership behaviors were measured using 11 items from the Leader's Edge portion of the 2016 SHL Gartner Leadership Study. These items were assessed by the team leader's manager and selected because they focused on specific behaviors of the team leader related to promoting innovation within the team based on West and Farr's (1990) definition of team innovation. The items were rated on a scale assessing the frequency of the leader's behaviors on a scale from 1 = "not at all" to 5 = "to a very great extent". McDonald's Omega for this scale is .77, and Cronbach's Alpha for this scale is .92. Additionally, fit statistics for this scale suggest these items have good fit as a composite, single-factor measure (RMSEA = .06, SRMR = .022, CFI = .975, and TLI = .969). The full list of all scales and items is in Appendix C. Sample items for this scale include, “Introduces information, challenges, or questions to stimulate team members to think in new and different ways” and “Instills policies, practices, procedures, and/or rewards that encourage others to identify and develop new ideas”.

Leader’s Espoused Value for Innovation. The team leader’s espoused value for innovation was measured using 5 items from the leader’s job analysis questionnaire (JAQ) portion of the 2016 SHL Gartner Leadership Study. The JAQ asked the leader to specify how important certain specific behaviors and values were to the performance of his or her job as team leader. Given the primary source of unit-level espoused values are the unit’s leader (Zohar & Hofmann, 2012), and the high correlation between ratings of leader and unit-level member perceptions (e.g., Motowidlo & Borman, 1978), a direct assessment of the leader’s espoused values was appropriate to assess perceptions of espoused value for innovation within the team. The items were rated on a scale from 1 = “not important” to 5 = “extremely important”. McDonald’s Omega for this scale was .75, and Cronbach’s Alpha for this scale was .85. Fit statistics for this scale suggest these items have good fit as a composite, single-factor measure (RMSEA = .06, SRMR = .01, CFI = .996, and TLI = .985). Sample items include, “Encourage creative dialogue and/or debate among employees to address work-related challenges or opportunities” and “Establish a climate that encourages team members to create new ideas and approaches to carrying out work”.

Team Enacted Value for Innovation (Team Climate for Innovation): Ehrhart et al. (2013) note short measures and broad sampling of climate within work units are appropriate given climate’s focus on a “gestalt meaning of similarly focused items” (pg. 74). Team enacted value for innovation was measured using 4 items rating team-level perceptions of policies, practices, and procedures that value and support team innovation in line with the definition of climate (e.g., Schneider et al., 2013). The items were measured at the individual level using a referent-shift consensus focused on the team (Erhart et al., 2013; Morgeson & Hofmann, 1999), with team-level variance estimated using the specified MLPM (Zyphur et al., 2016). The items were rated on a scale from 1 = "very poor" to 5 = "very good". McDonald's Omega for this scale is 0.95, and Cronbach's Alpha for this scale is .88. Additionally, fit statistics for this scale suggest the items demonstrate good fit as a composite, single-factor measure (RMSEA = .07, SRMR = .006, CFI = .999, and TLI = .996). As mentioned in the analysis section, team climate for innovation produced a r_{wg} of 0.77, an ICC_1 of .17, and an ICC_2 of .48. Sample items include, "How would you rate the resources available to the team to support efforts to innovate?" and "How would you rate the efforts in this team to measure and track the level of innovation achieved?"

***Between-level reliability*.** Geldhof, Preacher, and Zyphur (2014) recommend computing level-specific reliability when using multi-level data. Given this consideration, and the primary research focus on the between level in this analysis, between level composite (omega) reliability (e.g., Geldhof et al., 2014) was computed. The between-level omega reliability for team enacted value for innovation was .97.

Team Innovation. Team innovative performance was measured using five items rated by the team leader assessing the team's effectiveness at generating and implementing ideas, processes, and procedures within the team in line with West and Farr's (1990) definition of team innovation. Items were rated on a scale from 1 = "very ineffective" to 5 = "very effective". McDonald's Omega for this scale is 0.76, and Cronbach's Alpha for this scale is .81.

Additionally, fit statistics for this scale suggest this collection of items has good fit as a composite, single-factor measure (RMSEA = .07, SRMR = .031, CFI = .985, and TLI = .969). Sample items include, “How effective is this team at developing useful new ideas for products, services, and/or process improvements?” and “How effective is this team at improving procedures and/or processes?”

Size. Meta-analysis of the predictors of innovation at the team level suggest team size may impact the level of team innovation (Hülsheger et al., 2009), although, organization size was used as a control variable by Zyphur et al. (2016) and size exerted a negligible impact on organization level innovation. To verify that observed effects were not impacted by the size of the team, the number of people in each team was included as a control variable at the team level.

Full measurement model fit. A confirmatory factor analysis was estimated to assess the fit of the full measurement model as a four correlated factors model. Fit statistics suggest a good fit to the data of the proposed measurement model (RMSEA = .04, SRMR = .038, CFI = .953, and TLI = .948).

Results

Descriptive statistics and correlations for all study variables are presented in Table 2. Table 3 reports the model comparisons testing the incremental validity of espoused value for innovation, and Table 4 and Figure 4 report the results of the MLPM testing the combined effects of espoused and enacted values. As shown in Table 2, both espoused and enacted values were significantly correlated with team innovation and were significantly correlated with one another. Additionally, the team leader's innovative leadership behavior had a small, significant correlation with espoused values, enacted values, and team innovation.

Table 2

Descriptive Statistics and Correlations

	M	*SD*	1	2	3	4	5
1. Team Leader Innovative Leadership	3.81	.59	(.92)	--	.063**	--	--
2. Espoused Value for Innovation	3.80	.69	.058*	(.85)	.069**	--	--
3. Enacted Value for Innovation	3.76	.47	.107**	.126**	(.88)	.113**	.044**
4. Team Innovative Performance	3.88	.59	.07*	.263**	.210**	(.81)	.103**
5. Size	5.81	2.94	.065*	.07*	.04	-.036	--

Note: Level 1 (n = 10,918), Level 2 (n = 2079). *p<.05, **p<.01. Diagonal parentheses are estimated reliabilities as α; Numbers below diagonal are correlations between group mean for enacted value and variables 1, 2, 4, and 5 (level 2). Correlations above diagonal are individual perceptions of enacted value with variables 1, 2, 4, and 5.

Hypothesis 1 was evaluated by estimating a series of three multi-level structural equations models in Mplus 8 and computing and comparing the pseudo-R^2 for each model (Raudenbush & Bryk, 2002), specifically focusing on the variance at the between level attributable to level 2 predictors (Rights & Sterba, 2020). First, a model was estimated with only the level-2 observed variable team innovation, producing an estimated variance of .332 for team innovation at the between level. Next, adding only the observed variable enacted values as a predictor reduced the variance of team innovation to .304 (pseudo R^2 = .08). Finally, adding the predictor espoused values to the model with enacted values reduced the variance in team innovation to .288 (pseudo R^2 = .13, Δpsuedo R2 = .05), and both espoused and enacted values were significant predictors. See Table 3. Based on this evidence, Hypothesis 1 is supported.

Additionally, because the enactments only and the combined espousal and enactments models predict the same dependent variable and are fitted to the same data their AIC and BIC statistics are comparable (Kline, 2016). As shown in Table 3, the AIC for Model 3 with both espoused and enacted values is 136.66 lower than Model 2 with only enacted values, and the BIC for Model 3 is 129.52 lower than Model 2. Both sets of statistics favor Model 3. Specifically, based on Lee & Song's (2001) guidance the difference in BIC greater than 10 is "decisive" evidence in favor of Model 3. Overall, this additional information suggests the model incorporating espoused values provides better fit to the data and lends additional support for Hypothesis 1.

To justify the use of the higher order terms an MLPM was estimated following Equation 1 with appropriate squared and interaction terms added for espousals and enactments. Though this model further reduced the variance of team innovation to .287 (pseudo R2 = .14, Δpsuedo R2 =.01), the higher-order terms were not significant. While Hypothesis 1 results indicate both espoused and enacted values are significant predictors of team innovation, the negligible variance explained by the higher order terms suggests their congruence may not explain incremental variance. Examination of key parameters and the corresponding RSM plot was used to fully evaluate Hypotheses 2, 3, and 4.

Table 3

Model Comparisons For Incremental Validity of Espoused Values

	Model 1 (Null Model)		Model 2 (Ena. only)		Model 3 (Esp. & Ena.)	
Model Paths	Est.	SE	Est.	SE	Est.	SE
Esp. to Team Inn.					.188***	.021
Ena. to Team Inn. (*Esp. to Ena.)*			.514***	.060	.446***	.061
Team Inn. Between Level Var.	.332***	.013	.304***	.012	.288***	.012
	Model Fit Summary					
AIC			24476.98		24340.32	
BIC			24505.55		24376.03	

Note: Est. = estimate; SE = standard error; ****p* < .001; Ena. = enacted value for innovation; Esp. = espoused value for innovation; Inn. = Innovation; Var. = variance.

Response Surface Analysis

Hypothesis 2 predicted that the level of espoused and enacted values for innovation would be positively related to team innovation. This hypothesis was tested by examining the slope that defines the response surface along the line of congruence. As can be seen in Table 4 and Figure 5, the slope of the response surface along the line of congruence was positive ($a_1 = \beta_{12} + \beta_{13} = .657$), and the 95% confidence interval did not include zero (range, .51 - .75). A positive slope indicates that as both espoused and enacted values increase, team innovation increases. See Figure 5 showing the RSM plot based on the output in Table 4 recalculated with non-significant terms removed. The positive slope of the response surface along the line of congruence illustrates the significant effect for the mean level of both predictors. This supports Hypothesis 2.

Hypothesis 3 predicted that as congruence between espoused and enacted values for innovation increases, team innovation will also increase. This hypothesis was tested by examining the curve that defines the response surface along the line of incongruence between espoused and enacted values for team innovation ($a_3 = \beta_{14} - \beta_{15} + \beta_{16}$). Though the a_3

parameter was negative ($a_3 = -.232$), the confidence interval included zero (range, -1.25 - .51), indicating its impact was not significantly different than 0. Figure 5 represents the response

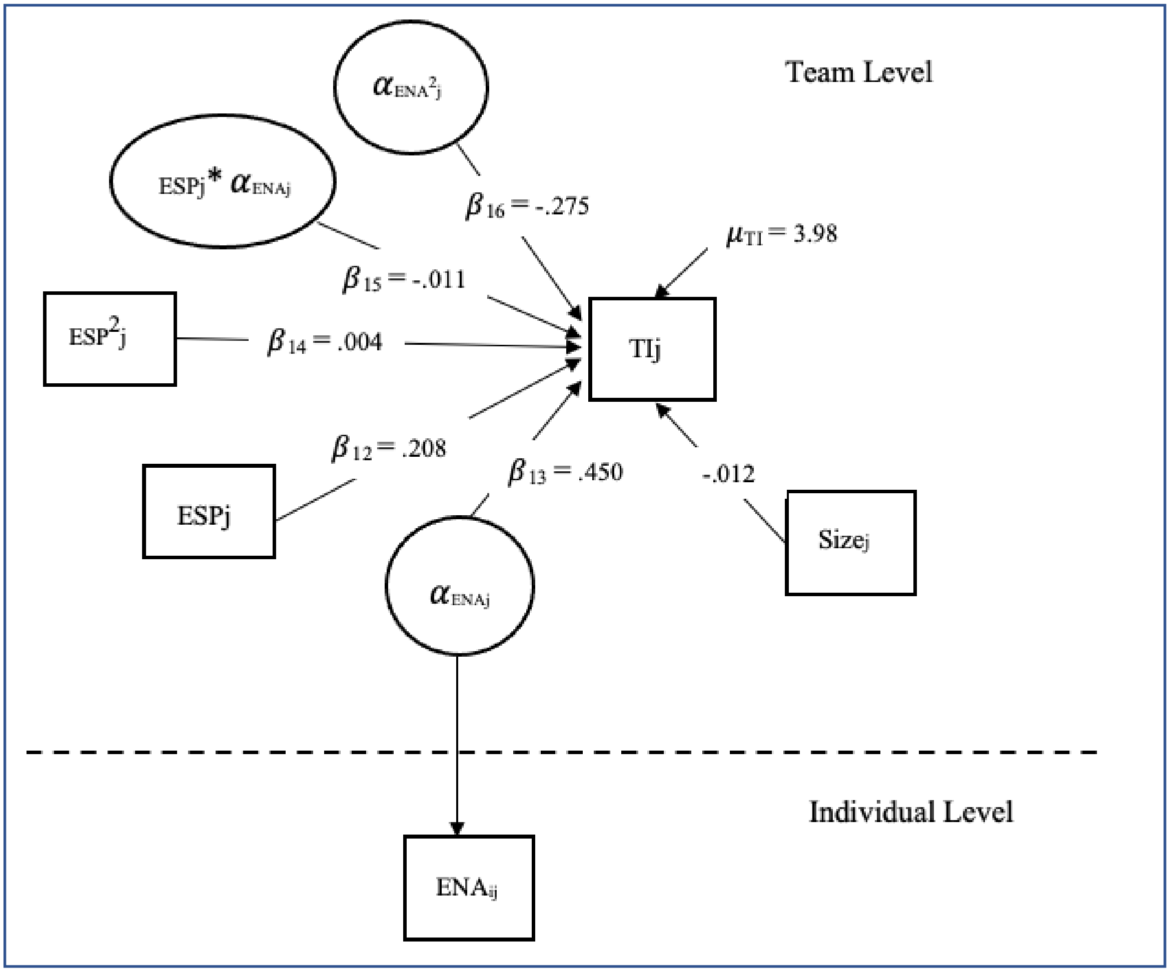

Figure 4

Multi-level Latent Polynomial Regression Model

Note. Model of structural and measurement relationships for study variables. Rectangles represent observed and circles represent latent variables. Arrows connecting two variables are regression paths, and the arrow connected to TI is its intercept. All variables and parameters are as defined in Equation 1. Symbol "α" indicates enactments was measured at the individual level, and group means are used to estimate latent variables.

surface corresponding to the re-estimated MLPM with the non-significant, higher order terms removed, and shows there is no curvature along the line of incongruence. Therefore, Hypothesis 3 was not supported. Additionally, given the effect of congruence on team innovation was non-significant, Hypothesis 4 was not supported. Finally, the results of the MLPM shown in Table 4 were also re-estimated while controlling for leader behavior in addition to team size to ensure the effects of espoused values were not better explained by leader behavior. For this additional MLPM, the effect of leader behavior on team innovation was non-significant (β = .045, *p* =.105), and the pattern of results reported in Table 4 did not change.

Table 4

Multilevel Latent Polynomial Regression Model Results

	Multilevel Latent Polynomial Regression		
	Parameter Estimate	SE	*p* Value
TI regressed on:			
ESP	.208	.02	<.001
ENA	.450	.07	<.001
ESP^2	.004	.026	.872
ESP x ENA	-.011	.119	.929
ENA^2	-.275	.470	.610
Size	-.012	.004	.004
Intercepts/means			
TI	3.98	.063	<.001
	Response Surface Parameters and Confidence Intervals		
	2.5%	Parameter Estimate	97.5%
a_1	.51	.657	.75
a_3	-1.25	-.260	.51

Note: TI = Team Innovation; ESP = espoused value for innovation; ENA = enacted value for innovation.

Mediation Analysis

Hypothesis 5 predicted the combined effects of espoused and enacted values for innovation would mediate the impact of innovative leadership on team innovation. To estimate the combined effects of espoused and enacted values, block variables procedures (e.g., Edwards & Cable, 2009) were used to form the mediator variable representing the combined effects of both predictors at the team level. Table 5 reports the comparison of three models estimating the mediation effects of espoused and enacted values. Specifically, the hypothesized model with both values modeled as a block variable was compared to a model with both values modeled separately, and a model with only enacted values as a mediator. As seen in Model 1, the indirect effect of leader behavior on team innovation through the block variable (labeled "via congruence") was significant (β = .04, 95% CI .022-.058). However, as shown in Models 2 and 3, the mediating effect is transmitted primarily through enacted values (β = .039, 95% CI .023-.059), the mediating effect of espousals is small (β = .011, 95% CI .002-.020), and the magnitude of the parameter estimate for the combined mediator is only negligibly larger than the mediation effect in Models 2 and 3. Therefore, Hypothesis 5 was not supported.

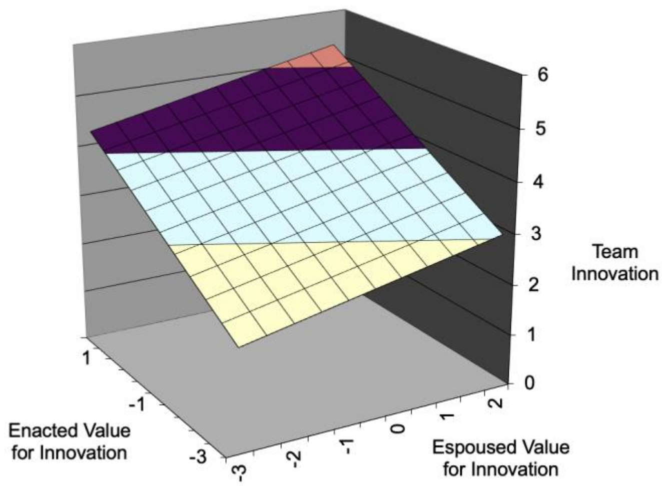

Figure 5

RSM Plot With Relating Espoused and Enacted Values and Team Innovation

Table 5

Model Comparisons For Mediation of Espoused and Enacted Values

	Model 1 (Combined Mediator)		Model 2 (Esp. & Ena. separate)		Model 3 (Ena. only mediator)	
Model Paths	Est.	SE	Est.	SE	Est.	SE
Cong. to Inn.	.382***	.027				
Esp. to Inn.			.185***	.028		
Ena. to Inn			.350***	.026	.373***	.026
Ldrshp. to Cong.	.106***	.028				
Ldrshp. to Esp.			.057*	.028		
Ldrshp. to Ena.			.113***	.027	.113***	.027
Ldrshp. ind. Inn. (via Congruence.)	.04***	.011				
Ldrshp. ind. Inn. (via Espousals)			.011	.005		
Ldrshp. ind. Inn (via Enactments)			.039***	.01	.042***	.011
R-square for Inn.	.146**	.021	.158**	.02	.139**	.019
	Model Fit Summary					
χ^2	1.303		24.995		1.174	
P-value	.25		.000		.28	
df	1		2		1	
CFI	.998		.912		.999	
TLI	.995		.737		.997	
RMSEA	.015		.091		.011	
SRMR	.012		.045		.011	
AIC	1018.1		4455.7		1598.8	
BIC	1049.4		4508.0		1630.2	

Note: *$p < .05$; **$p < .01$; ***$p < .001$. Cong. = congruence; Esp. = espoused value for innovation; Inn. = team innovation; Ena. = enacted value for innovation; ind. = indirect. Ldrshp. = innovative leadership behavior.

Discussion

This study proposed and tested a model that frames the alignment between espoused and enacted values as a driver of team innovation, and a mediator of the effects of the team leader's innovative leadership on team innovative performance. Results show the mean level of both espoused and enacted values exert a significant, positive effect on team innovation, and that including espoused values predicts incremental variance in team innovation compared to enacted values (specific climate) alone. Specifically, the highest performance was found when espoused and enacted values for innovation within the team were both high. This demonstrates both norms exert an important, direct effect on team innovation. Contrary to prediction, though, the congruence between espoused and enacted values did not significantly predict team innovation, and the combined effects of espoused and enacted values did not mediate between innovation-focused leader behaviors and team innovation. Rather, the mediation tests support previous empirical work showing the indirect effects of leader behavior on team innovation flow primarily through team climate for innovation.

Theoretical Implications

Many studies find climate for innovation is a major predictor of team innovation (e.g., Bain, Mann, & Priola-Merlo, 2001; West & Wallace, 1991), and others find the leader's impact on team innovation is primarily indirect through team climate for innovation (e.g., Chen, Farh, Campbell-Bush, Wu, & Wu, 2013; Eisenbeiss, et al., 2008). At the same time, the role of the leader in the creation of climate perceptions is poorly understood and in need of further research given a variety of theoretical explanations and a diverse set of empirical findings (Ostroff et al., 2012). Ehrhart et al. (2013) suggest leaders impact specific climate perceptions by communicating to their followers where to focus their motivation. The social identity perspective offered an integrative theoretical explanation for the role of the leader in team climate perceptions. Based on this perspective, espoused values should work in addition to enacted values (specific climate perceptions) to predict performance, because each provide important, unique information about how to direct motivation within the team. Results showed perceptions of espoused values, which originate from the team's leader but are distinct from leader behavior, exerted significant influence on team innovation when modeled with enacted values. Thus, the team leader impacts climate perceptions, above and beyond the indirect effects of their leadership behavior, by impacting perceptions of climate-based injunctive norms within the team. This study also found high levels of both norms predicted the highest team innovation, which further highlights the importance of incorporating espoused values to explain more fully the impact of climate-based perceptions on team innovation.

These results suggest the need to change the way we conceptualize the effects of specific climates on performance to include espoused values, and partially supports the central proposition of the Zohar and Hofmann (2012) model used to justify the current study. Based on the results here, the comparison of espousals and enactments does capture important meaning that directly impacts group behavior, although "congruence" may not be the most relevant way to conceptualize this comparison. To be fair, Zohar and Hofmann (2012) never used the term "congruence". Rather, they describe the effects as stemming from "alignment" without specifying a particular measurement technique. At this point, it seems the theoretical term "alignment" does not necessarily imply the measurement term "congruence" for espoused and enacted values. From that perspective, the results are still consistent with what their model predicts, although further research will be needed to clarify what constitutes “alignment” for espoused and enacted values and how such alignment impacts performance.

The non-significant mediation findings shed additional light on how climate perceptions operate within the team. In this case, the leader’s impact at the team level was primarily through team climate for innovation. So, while both espoused and enacted values are part of the “lens” for interpreting the team’s normative context, the results suggest that same lens is not used to interpret specific leader behavior, contrary to the prediction of leader categorization theory as it was used here. In hindsight, the general social identity perspective used to differentiate espoused and enacted values also helps explain these findings. The social identity perspective, and the injunctive versus descriptive distinction would predict espoused values, although originating from the leader, would not be directly impacted by leader behavior because leader behavior provides descriptive rather than injunctive cues. From this perspective and given the leader behavior measure incorporates only actions, it is not surprising the mediation effect flows primarily through climate. Such results are consistent with the social identity perspective and suggest the application of leader categorization theory may have needed to distinguish the leader’s behaviors from the leader’s words in the same way the social identity perspective distinguished the follower’s perceptions of espoused from enacted values. This would have more precisely accounted for leader categorization theory’s foundation in the social identity perspective.

One area of research where the leader’s words and deeds are differentiated is behavioral integrity. Behavioral integrity (BI) measures the degree of word-deed alignment for the leader. Meta-analysis of leader BI show it has strong, positive impacts on follower performance (Simons, Leroy, Collewaert, & Masschelein, 2015). Additionally, Palanski and Yammarino

(2009) propose this distinction is relevant at the group level, and that a group has "integrity" if it displays consistency between words and actions, and suggest such integrity is a direct determinant of group performance. They further comment that group integrity is likely driven largely by the group's norms, but that the study of leadership and integrity lacks a strong theoretical base (Palanski & Yammarino, 2009). This concept of a distinction between what the leader says and what the team experiences, and that they are dual determinants of group performance in both Zohar and Hofmann's (2012) model and the social identity perspective pairs well with findings and propositions from BI research. Little, if any, research has integrated this distinction into studies of leadership, climate, and culture. The findings of the current study indicate a similar word-deed distinction may be a relevant way to conceptualize the normative environment of teams with respect to a specific climate. Indeed, espoused, and enacted values seem to follow this word-deed distinction, and through the social identity perspective also offer a strong theoretical base for continued examination of climate and culture, and perhaps integration with BI research.

The direct effects of both espoused and enacted values on team innovation raise an additional theoretical implication. Zohar and Hofmann (2012) proposed the comparison of espoused and enacted values are a critical part of the meaning of the deep level of culture and guide group behavior. The social identity perspective was used here to explain why these values represent injunctive and descriptive norms and that they should work together to predict performance because they're used to interpret the team's normative context. Importantly, this normative perspective integrates well across a variety of models of culture. See Table 6 for a comparison of descriptions of how culture's deep level drives behavior. Culture's impact stemming from a cognitive interpretation of the normative information provided by its core elements is a common thread across these conceptualizations. It's worth noting Schein (2017), and others, assert the deep level of culture is difficult to measure or quantify despite its importance, because it functions implicitly, meaning it is not discussed explicitly, nor processed consciously (Uhlmann, Leavitt, Menges, Koopman, Howe, & Johnson, 2012). Given Schein's (2017) definition is the most comprehensive and widely adopted (Ostroff et al., 2012), this has created a problem for culture assessment because it renders the core component of culture immeasurable. It also helps explain the infrequency of quantitative examinations of culture (cf., Schneider et al., 2017). The model tested here provides some initial evidence this measurement problem has a solution to the degree that espoused and enacted values describe the meaning of culture's deep level, because these constructs are measurable. That espoused and enacted values both drive behavior suggests they may be used to interpret the deep level of culture, just as Zohar and Hofmann's (2012) model proposes.

It is also worth noting this implication that the deep level of culture is described by climate perceptions is right in line with where the fields have been moving in recent years. Schneider et al. (2013) highlight how Schein, a foundational culture scholar, has similar views:

> Schein, who in the earlier editions of his book (1985, 1992) barely mentioned climate (simply lumping climate in with "artifacts"), has more recently (2004, 2010) characterized climate as providing the behavioral evidence for the culture of a setting, such that those behaviors form the bases for employees' conclusions about the values and beliefs that characterize their organization (pg. 377).

The more that empirical studies examine climate and culture, the more both fields realize their inter-relationship is pronounced. Zohar and Hofmann's (2012) proposition that specific climates are used to decipher the meaning of the deep level of culture is not contrary to the broader culture scholarship, though it may seem that way at first glance given the strong

Table 6

Comparison of Descriptions of How Culture Drives Behavior Via Its Deep Level

Reference	Description of Culture's Deep Level
Schein (2017)	Culture as a set of basic assumptions defines for us what to pay attention to, what things mean, how to react emotionally to what is going on, and what actions to take in various kinds of situations. (pg. 22)
Zohar & Hofmann (2012)	A comparison between the espoused vs. enacted values/priorities reveal gaps which inform employees about true underlying (enacted) Basic Assumptions and Core Values. (pg. 661)
Hatch (2011)	The ongoing processes of meaning making…produce the thread with which assumptions, values, artifacts, and symbols are spun and then woven into culture…. Over time, the sum of such meaning-making activity, ongoing throughout a culture, produces the rich and varied web of meaning that connects people to each other. (pg. 344-345)
Verbeke et al. (1998)	Organizational culture therefore is a system of shared norms and behaviors that are *learned* by the members of the organization and shape their *way* of doing. (pg. 315)
O'Reilly & Chatman (1996)	[Organizational culture] A system of shared values defining what is important, and norms, defining appropriate attitudes and behaviors, that guide members' attitudes and behaviors. (pg. 166)
Trice & Beyer (1993)	[Ideologies] …shared, relatively coherently interrelated sets of emotionally charged beliefs, values, and norms that bind some people together and help them to make sense of their world…When beliefs, values, and norms develop over time into the relatively stable, unified, and coherent clusters that comprise ideologies, they provide causal models for explaining and legitimating collective and individual behaviors. (pg. 33-34)
Wiener (1988)	[Value systems]…values shared by group members, particularly values concerning modes of conduct, become similar to norms in guiding members toward uniformity in behavior… When a number of key or pivotal values concerning organization-related behaviors and state-of-affairs are shared—across units and levels—by members of an organization, a central value system is said to exist. (pg. 535)
Allaire & Firsirotu (1984)	Values are symbolic interpretations of reality which provide meanings for social actions and standards for social behavior. (pg. 213)
Smircich (1983)	The social or organizational world exists only as a pattern of symbolic relationships and meanings sustained through the continued processes of human interaction. Social action is considered possible because of consensually determined meanings for experience that, to an external observer, may have the appearance of an independent rule-like existence. (pg. 353)
Pettigrew (1979)	[Symbols, language, ideologies, beliefs, rituals, and myths] These concepts direct attention toward the mobilization of consciousness and purpose, the codification of meaning, the emergence of normative patterns, the rise and fall of systems of leadership and strategies of legitimization. It is through such mechanisms and processes that culture evolves, and indeed the ever-fluctuating state which we describe as an organizational culture then acts as a determinant or constraint on the way further attempts to handle issues of purpose, integration, and commitment are handled. (pg. 576-577)

Note: For models where the deep level of culture and/or culture's impact on behavior are associated with specific terms or a collection of terms that are not referenced in the description, those terms are included in brackets.

disagreement about culture's semantic content that characterizes organizational culture research (Chatman & O'Reilly, 2016). However, when one looks at the broader body of work in both climate and culture, their overlap is pronounced, and multiple scholars are echoing Zohar and Hofmann's (2012) proposition. In fact, Table 6 suggests culture scholars have made similar claims for several decades. A notable difference is that Zohar and Hofmann (2012) make these propositions in a particularly specific and therefore testable way.

Finally, this study demonstrates the utility of a novel technique using block variable procedures to model the combined effects of congruence as a mediator at the group level. Although the mediation hypothesis in this study was not supported, block variable procedures were still useful to evaluate the degree to which the combined effects of espoused and enacted values functioned as a mediator at the team level. In this case, given the higher-order polynomial terms were non-significant, the additional variance of the block variable mediator relative to the separate mediators was not surprising. Other studies that apply this technique may find significant, incremental mediation for the block variable, while more fully evaluating the effects of the congruence mediator.

For example, multiple studies find significant effects of "congruence" as a mediator between leader behavior and performance at the group level. Importantly, these studies use subjective assessments of congruence measured as a single variable, so they don't fully evaluate the effects of congruence between the two predictors (Edwards, 1993). For example, Hoffman et al. (2011) found person-organization value congruence fully mediated the group-level impact of transformational leadership on work group effectiveness. Similarly, Brown and Treviño (2006) found that value congruence between the leader and work group fully mediated the impact of the group leader's socialized charismatic leadership on group-level interpersonal deviance. For these studies, using separate measures of the congruence components rather than a subjective fit measure, and applying the block variable technique demonstrated here would provide a more thorough evaluation of the effects of congruence. It would also likely clarify whether the mediation effect flows through a particular component of congruence or through its combined effects. For studies like these, where the group is a theoretically relevant level to test mediation, the application of this simple technique likely provides a more comprehensive test of the role of congruence as a mediator, and more fully tests the underlying theory.

Practical Implications

A survey of 1,348 North American Executives found 92% believe that their organizational culture is one of the three most important drivers of their firm's value, and that culture is directly linked to innovation (Graham, Harvey, Popadak, & Rajgopal, 2016). At the same time, Schneider et al. (2013) use the example of British Petroleum's "safety culture" survey (which was actually a climate survey) following the infamous BP Texas City oil spill to explain that when corporations assess and attempt to change "culture", it is a much broader term than the one used by scholars. In practice, organizations typically assess climate in those cases, because climate creates the processes that reinforce core values and drive performance (Schneider et al., 2013). So, in practice, organizational leaders are likely to use climate as a direct route to enhance performance, and innovation is likely to be one of their focal outcomes.

Assuming organizational leaders do focus on climate to drive performance, leaders interested in leveraging the findings of the current study need to manage two climate-based perceptions. The results here demonstrated the highest innovation occurs in teams where both the espoused and enacted values for innovation are high. So, leaders should ensure the policies and procedures within their team create the actual experience, the enacted value, that innovation is important. But the espoused value within the team should also be high, which may not be part of a leader's focus. As support, see Figure 5. For teams who perceived the highest enacted value for innovation in the current study, but the espoused value was low, their overall level of innovation was lower than it could have been. The peak of the response surface is at the high point of both espoused and enacted values, suggesting optimal performance was realized when both perceptions were high. Although climate is where executives will tend to focus in practice to enhance team innovation, the current study's results suggest attending to espoused values of team leaders should also be a part of this strategy.

At the same time, the findings point to the practical advantage of a unit-level leader focusing on enhancing climate rather than communicating values in the case of limited time or resources. Results showed the impact of climate on innovation was stronger than espoused value, and that climate, not espoused values, carried the impacts of leader behavior. The implication is that if a leader's resources of time and energy are limited, greater returns are likely from ensuring the enacted values are high than from communicating to followers that innovation is important. For example, with limited time, rewarding those who introduce new ideas or services may be preferable to scheduling time to communicate with the team to highlight the importance of innovation. Consistent with this implication, a recent study of the role of the leader in stimulating innovation based on a survey of 86 working team leaders from manufacturing and services industries found one of the leader's most important functions was rewarding the innovative behavior of organizational members (Kaziol-Nadolna, 2020). While the previous implication underscores espoused values should be part of the overall strategy, the results also suggest that espoused and enacted values are not equally important. More impact on team innovation comes from climate for innovation than from espoused values.

Future Research

Chatman and O'Reilly (2016) advocated strongly for a move away from disagreements among scholars over culture's semantic content, and toward norm-based theories of culture to explain its mechanisms and impact. They also note that the "culture-climate debate", unlike other debates in culture research, has been "generative", meaning it has enhanced our understanding of how people make sense of their organizations and how this shapes behavior (Chatman & O'Reilly, 2016, pg. 205). Considering the noticeable convergence across descriptions of how culture drives behavior in very different models in Table 6, combined with the results of the present study, using espoused and enacted values as a dual basis for explaining how culture drives performance is likely to be similarly generative. Assuming results of the present study can be replicated, an important next step is to extend this measurement framework to other strategic climates and consider how multiple specific climate combinations influence outcomes, because the relative priority of competing climates is also a part of their impact in Zohar and Hofmann's (2012) model. There are several important questions for such research to address: What are the other strategic climates in the Zohar & Hofmann (2012) framework that similarly predict performance? Are they consistent across organizations? Do these climates change, and if so how? Finally, how does the profile of relevant strategic climates in an organization relate to performance and to the collection of culture elements? Addressing these questions will help further bridge the gap between climate and culture and will enhance our understanding of how sensemaking within organizations drives behavior.

Erhart et al. (2013) note complexity of the organizational environment can be a boundary condition for the effectiveness of specific climates. Based on the results of previous studies of culture and innovation, it is possible country, industry, and organization type operate as boundary conditions for climate for innovation, and the heterogeneity of these characteristics across the sample attenuated the strength of the higher order terms in the MLPM. For example, studies have demonstrated multi-national teams may have more complex communication processes than dominant culture teams, driving lower team innovation when those processes aren't actively managed (e.g., Boucken, Brem, & Kraus., 2016). National culture has been shown to have strong impacts on innovation processes at the organization level, and these processes directly determine organization-level innovation (Beyenne, Sheng, & Wei, 2016). Notable differences in the level of team innovation between organizations have been observed for different industries such as research versus development (Bain et al., 2001). Finally, those rating performance sometimes adjust their ratings by the level of team-based culture within the organization (Lievens, Conway, & De Corte, 2008) meaning leaders across organizations may have rated innovation differently as team-based culture differed within their organization. Industry, country, and organization type (domestic versus multi-national) were stable at the organization level and were rather heterogenous across the full sample. These factors of the organizational environment may have been inadequately controlled by the choice not to model organization-level effects and highlight areas that may be fruitful for future research.

To support this claim, two individual companies that allowed controlling for the unique effects of industry, country, and company type at the organization level while maintaining adequate power (121 teams and 176 teams respectively, e.g., Zyphur et al., 2016) were chosen, and the MLPM was run separately in each company. Results are included here as exploratory, post-hoc analyses to highlight possible areas for future research. For one domestic US company the pseudo-R^2 for the full MLPM was .20, and for one multi-national US company pseudo-R^2 for the full MLPM was .19. For both companies, the MLPM including the higher order terms produced delta-R^2 of .10 relative to the espoused and enacted values only models, so additional variance was explained by the combined higher order terms. Response surface plots also indicate the effects of the higher order terms were non-linear, and for the multi-national company, a more typical "congruence" effect was observed. See Appendix D for the MLPM results and RSM plots. This should not be construed to indicate support for the unsupported hypotheses in the current study. However, it highlights the need to carefully account for country, industry, and organization type in future research that examines the congruence between espoused and enacted values. It also suggests heterogeneity of such differences may attenuate the impact of the higher order terms in an MLPM, because such differences were likely masked in the full sample.

These additional analyses and the studies cited to justify them indicate future climate and culture research should continue to examine value congruence in an MLPM framework, with careful attention to sample characteristics of industry, country, and organization type. So far, research within the domains of organizational climate and culture has seldom been done with a cross-cultural lens (Ostroff et al., 2012; Schneider et al., 2017). Chao and Moon (2005) proposed a meta-theory that framed the interactions among individuals within an organization as a complex, yet sometimes predictable, cultural "mosaic", where the demographic (e.g., ethnicity), geographic (e.g., country) and associative (e.g., profession or employer) characteristics of individuals all impact how "culture" comes together hierarchically within organizations. They argued most organizational research only accounts for one of those many complicated factors, yet many if not all of them are likely to define "culture's" impacts (Chao & Moon, 2005). Though examples of such research are limited for climate research within teams, Gelfand, Brett, Gunia, Imai, Huang, & Hsu (2013) found negotiating teams in Taiwan versus the United States had very different outcomes for the same team context due to the way norms for harmony interacted across the two cultural groups (Taiwanese versus American). Future studies would benefit from integrating such a nuanced cross-cultural perspective and will also clarify boundary conditions that better illuminate how espoused and enacted values operate within the team.

Strengths and Limitations

One strength of the current study was the strictness of the test of the theoretical model imposed by choosing measures from multiple sources, and a narrow measure of leader behavior. Tests of the mediation pathway between leader-behavior and team innovation through climate often rely on team measures of both leader behavior and climate, and use a broad measure of leader behavior, such as transformational leadership. Such studies find strong direct and indirect effects of leadership on performance (e.g., Chen et al., 2013). Specifically, Chen et al. (2013) reported a direct effect of transformational leadership on climate for innovation of (β = .60, p < .05) and an indirect effect of (β = .23, 95%CI .01-.49). The estimates produced here were much smaller.

For comparison, an additional mediation analysis was conducted using the team-reported overall leadership scores from the original SHL survey instrument coupled with the current study's measures for espoused and enacted values and team innovation. This helped assess the degree to which parameter estimates in other studies may be inflated by the combined effects of common method variance and by using broad measures of leader behavior. When using a team-reported leadership measure of overall leadership, the pattern of results remained consistent with the current study (i.e., still no incremental mediation for the block variable), but the parameter estimates of the direct effect of leader behavior on enacted values (β = .60, 95% CI 0.57 - 0.62) and the indirect effect of leader behavior through enacted values (β = .195, 95% CI 0.17 - 0.22) both increased substantially in line with other studies. See Appendix D for the full results of this additional mediation analysis.

This additional analysis suggests to the degree studies include common method variance between leader behavior and climate and utilize broad leadership measures, they may over-estimate the effects of leader behavior on performance through climate. The results of the current study support previous empirical work suggesting the direct effects of climate on performance are strong. However, they suggest the degree to which climate mediates leader behavior, though significant, may be smaller than previously estimated, and the direct effect of leader behavior on climate is also likely over-estimated in studies using common methods to measure leader behavior and climate. As this additional analysis demonstrates, the choice of measures made the test here more conservative and may more accurately estimate the pattern of results. This represents a strength of the study design.

Using a focused measure of leadership, versus a broad measure of leadership (e.g., Transformational Leadership; TFL) represents an additional strength. The specific measure makes the results of the current study more applicable, by allowing leaders to identify behaviors they can focus on to create the type of climate in their teams that drives innovation. Compare the current findings to studies that show TFL enhances climate for innovation and ultimately team innovation. Such studies offer the takeaway that leaders should exhibit transformational leadership behavior to foster a climate for innovation (e.g., Chen et al., 2013). However, as van Knippenberg and Sitkin (2013) note, measures of TFL don’t specify how the dimensions combine to form the construct, confound the behaviors with the effects, and TFL is not empirically distinct from other aspects of leadership.

Consistent with this critique, the question of what behavior to engage in is difficult based on a TFL measure. What should leaders focus their behavior on to leverage such findings? Should they be more “motivating”, which is also an outcome (the “inspirational motivation” dimension from TFL)? Or stimulate more thought, also an outcome (the “intellectual stimulation” dimension from TFL; Bass & Riggio, 2006)? These rhetorical questions illustrate the relevance of van Knippenberg and Sitkin’s (2013) criticism in a practical way. In contrast, the innovative leadership measure used in the present study makes the same question easier to answer and apply. For example, these two items from the leader behavior scale provide clear examples of the types of behaviors a leader could utilize to enhance the climate that drives team innovation: “Produces plans that outline the steps and resources needed to efficiently attain objectives” and “Improves his or her performance by incorporating the input and ideas of others”.

One limitation of the current study is the subjective nature of the criterion measure, team innovation. As van Knippenberg (2017) notes, subjective measures often combine the processes of idea generation and implementation that define team innovation with little distinction or consideration although idea implementation does not necessarily follow from idea generation. He argues team innovation research would be more informative with more attention to this distinction. This study’s archival data did not include an objective measure of innovation, nor was one available for the companies represented within the data. But, integrating an objective measure of team innovation, and the corresponding differentiation of idea generation and implementation within the criterion, would have offered a more careful assessment of the impact of climate perceptions on team innovation.

Another limitation of the current study is the espoused value measure's referent/source. The measure of espoused value for innovation was assessed directly from the leader. It measured the leader's perception of what was important to the team. It is possible this measure did not adequately capture follower perceptions of what was espoused as important within the team. A measure directly tapping follower perceptions of the leader's espoused values or asking the leader to rate which values he "says" are important rather than what he "thinks" are important would have better face validity as an espoused value measure. Technology also offers new ways to address this limitation in future studies. For example, direct correspondence from leader to followers, such as through emails, could be directly converted to quantitative data using natural language processing (Oswald, Behrend, Putka, & Sinar, 2021) and could offer precision and objectivity to the assessment by measuring the actual language of espoused values that create culture perceptions (Srivastava & Goldberg, 2017).

The correspondence between the congruence measures is an additional limitation. Given congruence is defined by two predictors (e.g., Edwards, 1994a), ideally the individual item content of the espoused and enacted values measures would be identical. While both overall measures were consistent with definitions of their underlying constructs, limitations of the archival data also prevented a one-to-one mapping of content for individual scale items of study measures. Greater precision and construct coverage for the espoused value measure, coupled with precise content alignment with the enacted value measure would have offered a more thorough test of the congruence hypothesis and may have impacted the mediation results as well since espoused values were also part of the mediator.

Finally, the cross-sectional design is a limitation of the current study. While the overall results correspond well to theory, theory also suggests feedback loops are likely to be involved in the development of climate perceptions (e.g., Ehrhart et al., 2013; Ostroff et el., 2012). The study design doesn't allow testing whether levels of espoused values, enacted values, or team innovation at a particular time impact subsequent levels of these predictors or the outcome. Additionally, theory also specifies perceptions of espoused and enacted values are formed by separate processes, both of which are fundamental to organizational systems. Espoused values are a top-down, contextual effect where higher-level phenomena shape and constrain lower-level phenomena, whereas enacted values (or climate) are a bottom-up emergence phenomena where dynamic interaction among entities at a lower level yields the phenomena at a higher level (Kozlowski, Chao, Grand, Braun, & Kuljanin, 2013; Ostroff et al., 2012; Zohar & Hofmann, 2012). While this study was not focused on emergence, a longitudinal design that can unpackage how perceptions of espoused and enacted values develop, and subsequently impact performance would provide a more rigorous test of the underlying theory while enhancing our understanding of the dynamics of emergence for both predictors (Kozlowski et al., 2013).

Conclusion

The Zohar and Hofmann (2012) model provided a simple empirical proposition that was tested here. At least three important factors underscore the relevance of this test. First, there is broad theoretical convergence on the idea that culture drives performance through the cognitive interpretation of the normative environment (e.g., Chatman & O'Reilly, 2016). Second, there is meta-analytic evidence of the link between culture and performance, including innovation (Hartnell, Ou, & Kinicki, 2011). Third, the continued evolution of climate and culture research highlights a pronounced overlap between the two constructs (e.g., Schneider et al., 2013; Zohar & Hofmann, 2012). Given these factors, climate and culture literatures need empirical evidence that can clarify the mechanisms through which culture impacts performance, and how culture is related to climate. Assessing espoused and enacted values as dual climate-based predictors of performance addresses this need. Results showed espoused and enacted values were both predictors of team innovation, while only enacted values (climate for innovation) carried the impact of leader behavior on team innovation. These results suggest espoused and enacted values together more fully explain the impact of climate-based perceptions on team innovation. Their intersection may also provide an important framework for examining multiple climates and integrating them with culture in future research.

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Appendix A:
Technical Appendix

Analysis Part 1

Part 1 of the analysis involved testing the incremental validity of espoused values predicting team innovation and then estimating the effect of congruence between espoused value for innovation (by the leader) and enacted values for innovation (experienced by the team) on team innovation (rated by the team leader). The former involved estimating a series of multilevel structural equations models based on the code shown in Appendix B, Part 1, with the exception that the analysis is TYPE = TWO LEVEL versus TWO LEVEL RANDMOM and the command algorithm = integration is suppressed. This is done because without the higher order terms included, the ML SEM does not need to be tested with MLPM because there are no latent interaction terms, and the output also produces conventional fit statistics to allow model comparison. For the MLPM examining congruence, the code in Appendix B mirrors the code provided by Zyphur et al. (2016) producing estimates of the combined effects of congruence, as well as two additional parameter estimates for further quantifying the effect of the mean level and congruence of the predictors on the outcome. These additional parameters were the a_1 parameter, defined as the addition of the beta12 parameter for espoused value and the beta13 parameter for enacted value, and the a_3 parameter defined as the beta14 parameter for espoused value squared minus the beta15 parameter for espoused and enacted value interaction plus the beta16 parameter for the enacted value squared. All 5 polynomial coefficient estimates were used to produce a response surface showing the joint impact of both congruence variables on the outcome in a three-dimensional plot. All multi-level Part 1 analysis code mirrored the MLPM used by Zyphur et al. (2016) to assess the effect of congruence on innovation at the organization level, except for the analysis being situated at the team level. Team size was controlled like Zyphur et al. (2016). This analysis also used the SAVE command to save factor scores that were used to compute a block variable representing all the variance of the polynomial terms as described Part 3.

Analysis Part 2

Part 2 of the analysis required using Monte Carlo simulation procedures, also following code provided by Zyphur et al. (2016) to produce confidence intervals for the a_1 and a_3 parameters specified in the constraints portion of the code tested in Part 1 (See Appendix B for the code). These congruence parameters are used to fully interpret the mean and congruence effects for Hypothesis 2a and 2b, respectively which predict positive, significant effects for congruence and mean level. This Monte Carlo technique involves generating 10,000 parameter estimates using the model produced parameters and their asymptotic variances and covariances generated in Part 1. This Monte Carlo procedure generated 10,000 parameter estimates for the betas representing the congruence terms, which were then used to calculate 10,000 estimates of the descriptive parameters specified in the constraints portion of Part 1 by inputting the 10,000 beta estimates into the "constraints" equations specified in the Mplus code using Microsoft Excel. These 10,000 estimates were then sorted in order independently by magnitude, with the top 2.5% and bottom 2.5% eliminated to generate a confidence interval for each specific descriptive parameter. This was done because these compound statistics do not have a known sampling distribution, and non-parametric bootstrapping procedures cannot be applied to multi-level data with clustered sampling (Zyphur et al., 2016). Also, parametric bootstrapping is excessively computationally demanding with large sample sizes and latent interactions. Instead, the Monte Carlo technique used by Zyphur et al. (2016) avoids the computational difficulty of parametric bootstrapping for latent interaction variables, while generating interpretable CIs to estimate significance of the descriptive parameters.

Analysis Part 3

Part 3 of the analysis involved using the factor scores for each of the factors from the Part 1 MLPM and integrating these using block variable procedures (Igra, 1979; Heise, 1972) as specified by Edwards and Cable (2009). Because the Part 1 MLPM only estimated between-level variance, the factor scores and corresponding variance estimates only represent variance at the team level. This means all the variables in this mediation model are at level 2. The predictor (team leader's innovative leadership behavior), both portions of the congruence variable (leader's espoused value and the between-level/team variance of enacted values), and the outcome (team innovation assessed by the leader) were all level 2 variables. In addition to making this model more amenable to the application of block variable procedures, it also situates the entire relationship at the team level making a multi-level analysis unnecessary in this case. The congruence block variable was computed by multiplying each individual's factor score by the parameter estimate from the MLPM for each of the 5 congruence variables, adding these product terms together, and aggregating them to the team level. In practice, only the espoused and enacted value terms were significant, so the higher order terms ultimately were not included. This created a data set with one row per team, and congruence represented as a block variable that captures all the variance predicted by the polynomial terms at the team level for each team. Mediation was then assessed using Mplus as specified in the code in Appendix B. To evaluate the significance of the mediation effect bootstrapping procedures and 5,000 estimates were used to generate confidence intervals for the direct, indirect, and total effects of leadership on performance through the mediator, congruence. The mediation was also estimated with espoused and enacted value modeled separately. For this separate mediation, only the individual scores aggregated to the team level were used without "optimal" weighting as specified by the MLPM and block variable procedures were not applied.

Appendix B:
Code Used for Hypothesis Testing

Analysis Part 1: Mplus Code to test Hypothesis 1 through 4 using ML SEM & MLPM

```
TITLE: Dissertation defense using SHL data
!This tests the right half of the model
!congruence between espousal/climate for innovation
!predicting team innovation performance

DATA:
!enter the name of the data set
FILE IS ~/Documents/diss/SHL Defense/SHLdiss7c.txt;
VARIABLE:
!enter the names of the variables in the data set
Names are TM Size ESp ENa PRF;
Usevariables are TM ESp ENa PRF ESp2;
Cluster is TM;
Between are ESp PRF ESp2;
Missing are all (-999);
!Arbitrary missing value flag-999
define: center ESp ENa (grandmean);
ESp2 = ESp*ESp;
ANALYSIS:
!A robust full-information maximum-likelihood estimator is used by default
Type = twolevel random; !'Random' is a command
!required to estimate latent interactions
Algorithm = integration; !Numerical integration is
!required in the presence of latentinteractions
MODEL:
%WITHIN% !No need to specify a model within-organizations (variances estimated bydefault)
%BETWEEN% !The between-organization model contains all parameters of interest
!fESp by ESp@1;
fENa by ENa@1;
ENa@0; !ESp@0; !Puts latent variables'behind'
!random intercepts to allow using 'XWITH'
!to form latent squared/interaction terms as follows:
!ESp2 | fESp XWITH fESp; !Squares enactments
ESpENa | ESp XWITH fENa; ! Interaction term for espousals and enactments
ENa2 | fENa XWITH fENa; ! Squares espoused value
PRF on ! Regression equation as in Equation 7
!from Zyphur et al. (2016) with matching labels
!for beta terms as follows:
ESp (beta12)
fENa (beta13)
ESp2 (beta14)
```

```
ESpENa (beta15)
ENa2 (beta16);
!Size;
![ESp@0 ENa@0]; ! Sets grand means to zero,
!with latent variable means for these as follows:
![fESp] (muESp); [fENa] (muENa);  !Labels ‘mu’ reflect Greek terms found in Equation 7
MODEL CONSTRAINT:
New (a1 a3); !ESp0 ENa0 p10 p11 SQRT p11test); !Delta removed
!Creates new parameters that are labeled as in the Results section when they appear in the text, for
additional details
!see Edwards & Parry (1993) and Edwards (1994)
a1 = beta12 + beta13; ! Slope along line of congruence, or Hypothesis 1
a3 = beta14 - beta15 + beta16; ! Curve along line of incongruence, or Hypothesis 3
OUTPUT: sampstat TECH1 TECH3 TECH5; !Requests specific Mplus technical output
```

Analysis Part 2: Mplus Code for Monte Carlo CIs for congruence parameters

```
MONTECARLO:
!This code runs montecarlo procedures for CIs using covariances
!from the SHLdef7.1 code (Dr.Kim's) with model constraints
!this included the n.s. estimates for the polynomial terms
NAMES ARE beta12 beta13 beta14 beta15 beta16;
NOBSERVATIONS = 10000;
REPSAVE = ALL;
SAVE = 7cMonteCarlo.dat;
MODEL POPULATION:
[beta12*.204 beta13*.444 beta14*.008 beta15*-.013 beta16*-.252];
! Sets population means for
! these variables equal to parameter estimates as shown in Table 2
beta12*.0004 beta13*.0049 beta14*.000676 beta15*.014 beta16*.221;
! Sets variances of these
! variables equal to their asymptotic variance (i.e., the square of their SEs in
! their MPlus output)
beta12 with beta13*-.0000719 beta14*.0000761 beta15*-.000371 beta16*.000562; !
Asymptoticcovariances
beta13 with beta14*.0000295 beta15*.000944 beta16*-.0164; ! Asymptotic covariances
beta14 with beta15*-.000551 beta16*.000726; ! Asymptotic covariances
beta15 with beta16*-.0131; ! Asymptotic covariance
```

Analysis Part 3: Mplus Code to test Hypothesis 3 mediation of congruence at level 2

```
TITLE: Dissertation Defense using SHL data
!This tests the left half of the model
!a block variable represent espousals and enactements/climate
!mediates the effects of team leader innovative leader behaviors on team innivation
!SHLdiss7cmed.txt is the baseline7c output file with block variables merged the
!with team leader behavior predictor score
DATA:
!enter the name of the data set
FILE IS ~/Documents/diss/SHL PoC/SHLdiss7cBVP.txt;
```

```
ANALYSIS: BOOTSTRAP = 5000;
define:
center ILB (grandmean);
VARIABLE:
!enter the names of the variables in the data set
Names are TM ESp ENa PRF ILB CONG;
Usevariables are PRF ILB CONG;
Missing are all (-999);
!Arbitrary missing value flag-999
MODEL:
PRF ON CONG;
CONG ON ILB;
MODEL INDIRECT:
PRF IND ILB;
OUTPUT: CINTERVAL STDYX;
```

Analysis Part 3: Mplus Code testing mediation of separate espoused and enacted values at level 2

```
TITLE: Dissertation Defense using SHL data
!This tests the left half of the simulated model
!two separate variables represent espousals and enactements/climate without
!weighting/BVps applied
!mediate the effects of team leader innovative leader behaviors on team innivation
!SHLdiss7cmed.txt is the baseline7c output file with block variables merged with
!the team leader behavior predictor score
DATA:
!enter the name of the data set
FILE IS ~/Documents/diss/SHL PoC/SHLdiss7cBVPsep.txt;
ANALYSIS: BOOTSTRAP = 5000;
define:
center ILB (grandmean);
VARIABLE:
!enter the names of the variables in the data set
Names are TM ESp ENa PRF ILB;
Usevariables are ESp ENa PRF ILB;
Missing are all (-999);
!Arbitrary missing value flag-999
MODEL:
PRF ON ESp;
PRF ON ENa;
ESp ON ILB;
ENa ON ILB;
MODEL INDIRECT:
PRF IND ILB;
OUTPUT: CINTERVAL STDYX;
```

Appendix C:
Individual Scales & Items for Hypothesis Testing

Team Leader's Innovative Leadership Behaviors (manager rated)

1. Identifies the strengths and weaknesses of alternative approaches through the systematic use of logic and/or analytical techniques
2. Uses his/her understanding of the operations, structure, and goals of the organization to get things done more readily or effectively
3. Instills policies, practices, procedures, and/or rewards that encourage others to identify and develop new ideas
4. Produces plans that outline the steps and resources needed to efficiently attain objectives
5. Strives for constant development and improvement of the team
6. Aids employees in connecting with others (inside or outside the company) who can add value to or help them better do their jobs
7. Introduces information, challenges, or questions to stimulate team members to think in new and different ways
8. Sets the expectation that team members first try to work through problems or differences before seeking his or her help
9. Helps his or her team overcome obstacles and obtain resources, support, and cooperation from other areas of the company
10. Improves his or her performance by incorporating the input and ideas of others
11. Uses his/her competencies in new ways to suit the situation at hand

Team Leader's Espoused Value for Innovation (team leader rated)

How important are each of these to your job as team leader?:

1. Encourage creative dialogue and/or debate among employees to address work-related challenges or opportunities
2. Create an environment in which creativity and innovation are expected out of each employee
3. Share challenges, ideas, or new information with groups to bring about discussion and idea generation
4. Question traditional assumptions to produce new ideas, approaches, and/or insights for the business
5. Establish a climate that encourages team members to create new ideas and approaches to carrying out work

Team Climate for Innovation (Enacted value, team rated)

1. How would you rate the efforts in this team to measure and track the level of innovation achieved?
2. How would you rate the level of cooperation and help units provide each other in this company in pursuit of innovation?
3. How would you rate the resources available to the team to support efforts to innovate?
4. How would you rate your supervisor in leading the effort to implement new methods or ideas within the team?

Team Innovation (team leader rated)

How effective is this team at:

1. Leveraging the ideas and support of others in the company?
2. Improving working methods, techniques, or tools?
3. Developing useful new ideas for products, services, and/or process improvements?

4. Improving procedures and/or processes?
5. Effectively transferring skills and knowledge to team members?

Appendix D
Post-Hoc MLPMs of American Multi-national and Domestic Companies &
Post Hoc Mediation Analysis Using Broad, Team Measure of Leader Behavior

Table A1

US Multi-national Computer Software Company MLPM Results (post-hoc)

	Multilevel Latent Polynomial Regression		
	Parameter Estimate	SE	*p* Value
TI regressed on:			
ESP	.184	.076	.016
ENA	.436	.258	.090
ESP2	-.090	.107	.404
ESP x ENA	1.27	.717	.076
ENA2	-1.03	1.034	.318
TI Residual Variance	.256	.043	<.001
Intercepts/means			
TI	3.87	.067	<.001
	Response Surface Parameters and Confidence Intervals		
	2.5%	Parameter Estimate	97.5%
a_1	.08	.620	1.16
a_3	-5.56	-2.40	.65

Note: AIC = 2854.1; BIC = 2905.5

Table A2

Model Comparisons Testing Incremental Validity, Multi-national Software (post-hoc)

	Model 1 (Null Model)		Model 2 (Ena. only predictor)		Model 3 (Esp. & Ena. Predictors)	
Model Paths	Est.	SE	Est.	SE	Est.	SE
Inn. to Esp.					$.189^{*}$	.020
Inn. to Ena.			$.725^{***}$	.242	$.742^{*}$	.062
Between. Var.	$.315^{***}$	.031	$.280^{***}$	.033	$.285^{***}$	.012
	Model Fit Summary					
AIC			5114.80		2853.28	
BIC			5149.0		2889.27	

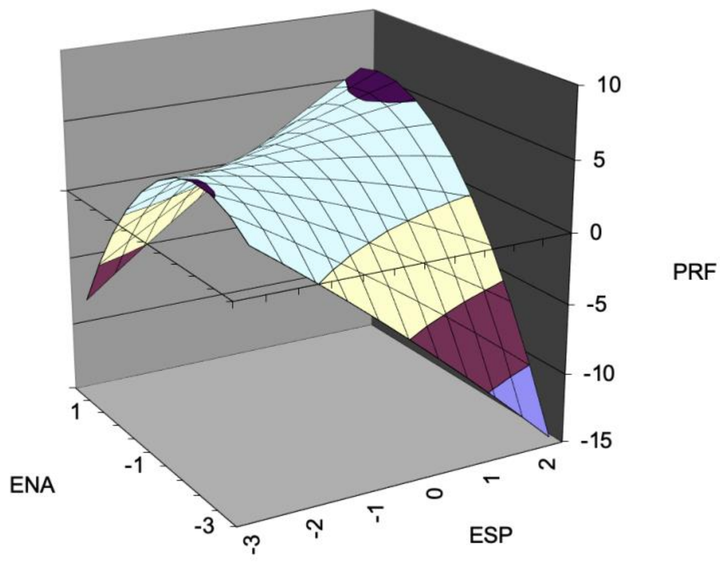

Figure A1

RSM Plot for US Multi-national Software Company (post-hoc)

Table A3

US Domestic Insurance Company MLPM Results (post-hoc)

	Multilevel Latent Polynomial Regression		
	Parameter Estimate	SE	*p* Value
TI regressed on:			
ESP	.201	.078	.010
ENA	.333	.331	.315
ESP2	-.156	.097	.109
ESP x ENA	-1.12	.498	.024
ENA2	-.378	.993	.703
TI Residual Variance	.278	.044	<.001
Intercepts/means			
TI	3.90	.090	<.001
	Response Surface Parameters and Confidence Intervals		
	2.5%	Parameter Estimate	97.5%
a_1	-.13	.534	1.20
a_3	-1.33	.558	2.51

Note: AIC = 2459.1; BIC = 2508.04

Table A4

Model Comparisons Testing Incremental Validity, Domestic Insurance (post-hoc)

	Model 1		Model 2		Model 3	
	(Null Model)		(Ena. only predictor)		(Esp. & Ena. Predictors)	
Model Paths	Est.	SE	Est.	SE	Est.	SE
Inn. to Esp.					.224**	.078
Inn. to Ena.			.547	.389	.486	.0378
Between. Var.	.347***	.040	.331***	.040	.311***	.042
	Model Fit Summary					
AIC			3147.7		2460.9	
BIC			3178.6		2495.1	

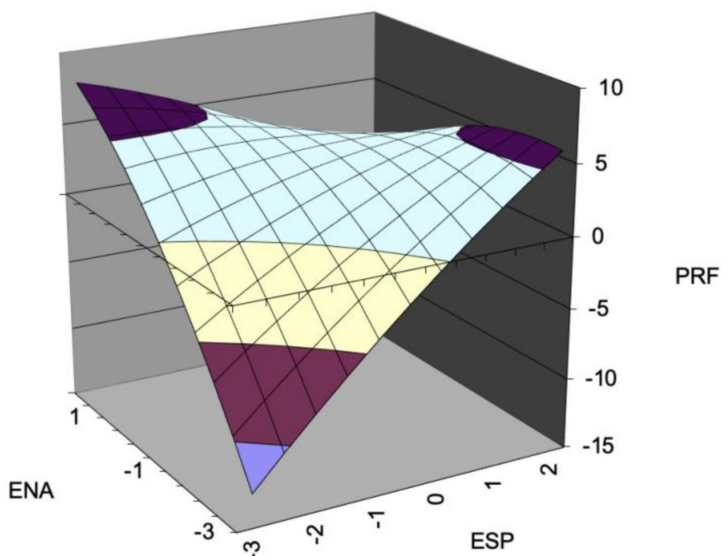

Figure A2

RSM Plot for US Domestic Insurance Company (post-hoc)

Table A5

Model Comparisons of SEM Analyses Testing Mediation of Espoused and Enacted Values With Broad Team-based Measure of Leader Behavior (post-hoc)

	Model 1 (Congruence Mediator)		Model 2 (Esp. & Ena. separate)		Model 3 (Ena. Only Mediator)	
Model Paths	Est.	SE	Est.	SE	Est.	SE
Cong. to Inn.	.41***	.022				
Esp. to Inn.			.237***	.024		
Ena. to Inn			.325***	.023	.352***	.022
Ldrshp. to Cong.	.40***	.019				
Ldrshp. to Esp.			.088***	.024		
Ldrshp. to Ena.			.598***	.016	.598***	.016
Ldrshp. ind. Inn. (Via Congruence.)	.16***	.011				
Ldrshp. ind. Inn. (via Espousals)			.021***	.006		
Ldrshp. ind. Inn (via Enactments)			.195***	.015	.21***	.015
R-square for Inn.	.167**	.018	.170**	.02	.124**	.016
	Model Fit Summary					
χ^2	4.571		40.171		21.463	
P-value	.03		.000		.000	
df	1		2		1	
CFI	.994		.967		.98	
TLI	.982		.902		.941	
RMSEA	.044		.102		.106	
SRMR	.017		.037		..034	
AIC	1013.3		5174.1		1466.4	
BIC	1046.4		5229.3		1499.5	

Appendix E
Research Agreement Authorizing Access to Data Used for This Study

.SHL.

Talent in Innovation.
Innovation in Talent.

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8 October 2019

Rylan Charlton

University of South Florida

4202 E. Fowler Ave.

Tampa, FL 33620

Dear Rylan:

Research Agreement ("Agreement")

The purpose of this Agreement is to allow the SHL group company identified below, or an SHL affiliate (collectively "**SHL**"), to discuss with you the possibility of supporting you or providing you with materials to carry out a "**Research Project**" as further defined in Schedule A, and to disclose Confidential Information to you.

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RC
10-9-19

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I should be grateful if you would sign the enclosed duplicate letter and return it to me to confirm your acceptance of the terms and conditions set out above.

Yours sincerely

Sara Gutierrez

for and on behalf of **SHL US LLC**

I hereby confirm my acceptance of the terms and conditions set out above.

Rylan Charlton

Doctoral Student, University of South Florida

Dated: ~~8~~ October 2019
9 Oct 2019

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In consideration of the mutual covenants and undertakings contained in this Agreement, THE PARTIES AGREE to the terms and conditions of this Agreement.

Rylan Charlton:	**SHL:**
By: [signature]	By: [signature]
Name: Rylan Charlton	Name: Sara Gutierrez
Title: Doctoral Student, USF	Title: Research Leader
Date: October 9, 2019	Date: 10-10-19

Appendix F
Permission to Use Zohar & Hofmann (2012) Figure 20.1

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