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**Does ethnic conflict impede or enable employee innovation  
behavior? the alchemic role of collaborative conflict management**

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# **Does ethnic conflict impede or enable employee innovation behavior? the alchemic role of collaborative conflict management**

## **Abstract**

**Purpose** – The purpose of this study is to investigate whether a societal context of ethnic conflict influences employee innovation behavior in the work domain, and whether a collaborative conflict management style adopted by supervisors plays a moderating role.

**Design/methodology/approach**- Drawing on the conflict, organizational behavior and innovation literature, the study examines the main and interaction effects of employee sensitivity to ethnic conflict, organizational frustration, and collaborative conflict management style of supervisors on employee engagement with colleagues to innovate products, services, and job processes. Hypotheses are tested using hierarchical regression analysis, controlling for ethnic diversity in workgroups.

**Findings** - Employee innovation behavior is greatest when employee sensitivity to ethnic conflict is high, organizational frustration is low, and when supervisors are perceived to be highly collaborative in managing conflict, regardless of whether the workgroup is ethnically homogenous or diverse.

**Research limitations/implications** - The research findings expand our knowledge of the effects of sociopolitical conflict on employee behavior and the role of collaborative conflict management. Future research can address limitations including self-reports, cross-sectional design, and single country setting.

**Practical implications** - The findings suggest that employee innovation behavior can be enhanced through developing collaborative conflict management skills of those in leadership positions.

**Originality/value** - This is the first study to empirically examine the influence of ethnic conflict on employee innovation behavior, and is of value to businesses operating in conflict settings.

**Keywords** - Ethnic conflict, Employee innovation behavior, Organizational frustration, Collaborative conflict management, Sri Lanka

**Article classification** - Research paper

## **Introduction**

Sociopolitical violence such as war, insurgencies, terrorism and ethnic conflict has generally been associated with disruption to business activities and danger to physical and human assets (Suder, 2006). While managers will generally avoid operating in high-risk environments, it is not always possible or even desirable since many business investments have a long-term horizon (Oetzel and Getz, 2012). In fact, global firms are increasingly shifting their investments from developed countries to emerging economy countries in Asia, Africa and Latin America (Dewhurst *et al.*, 2012), many of which are located in regions where sociopolitical conflict is prevalent (Heidelberg Institute, 2014). As such, global firms need to consider the potential impact of such conflict on their business and what can be done within their control to manage it. This paper examines the influence of ethnic conflict on employee innovation behavior, a fundamental aspect of business success, and the role of collaborative conflict management.

Recent events around the world have focused attention on ethnic conflict. In China, for instance, ethnic tension has resulted in mounting violence and heightened government security over the past few years (Beech, 2014; Buckley, 2014). Across Africa and the Middle East, ethnic and religious tensions, manifesting in wars and ethnic killings, have persisted for decades, most recently in South Sudan (Cline, 2011; Lustig, 2014). In South Asia, ethnic violence has recently erupted in India (Singh and Brumfield, 2013), while Sri Lanka is known for having had one of the world's longest ethnic wars that ended in 2009 (Shastri, 2009). Ethnic conflict is a principal cause of violence and instability around the world (Carter *et al.*, 2009). It can be considered a negative, hostile force in a firm's operating environment, since lives and businesses can be endangered and disrupted, especially if the conflict erupts into terrorist acts or war (Chirot, 2001; Esman, 2004; Horowitz, 2000).

A growing stream of research concentrates on the indirect, psychological effects of sociopolitical conflict on employee behavior, and the human resource management strategies to mitigate the external influence (Lee and Reade, 2015; Reade and Lee, 2012). This stream of research draws on findings in the organizational behavior literature that indicate the societal context, including one characterized by conflict and adversity, has a bearing on employee attitudes and behavior in the workplace (Johns, 2006; Woolley, 2011). Studies on the psychological effects of war (Massarra and Karkoulian, 2008; Reichel and Neumann, 1993; Vinokur, *et al.*, 2011), terrorism (Alexander, 2004; Bader and Berg, 2013, 2014; Mainiero and Gibson, 2003), and ethnic conflict (Lee and Reade, 2015; Reade, 2009; Reade and Lee, 2012) point to a negative impact on employee attitudes, behavior, and wellbeing. This includes lower work motivation, work productivity, organizational commitment, and job satisfaction. It also includes higher levels of anxiety, stress, depression and anger which is consistent with the negative aspects of conflict cited in the conflict management literature (e.g. Baron, 1991). For the firm, the general implication of these effects is lower organizational performance.

Yet, the conflict management literature draws our attention to the differential effects of conflict on organizational behavioral phenomena (De Dreu, 2006). That is, the same type of conflict, under various conditions, may have a negative effect on one aspect of employee behavior while having a positive effect or no effect on other aspects of behavior. We are concerned here with the effects of ethnic conflict on employee innovation behavior. Is ethnic conflict likely to impede employee innovation behavior, consistent with the above-mentioned negative implications, or could it potentially have a differential, positive relationship with employee innovation behavior? The conventional view in the innovation literature is that innovation and creativity are promoted by positive environmental and psychological states (Anderson *et al.*, 2014); thus, the negative aspects of ethnic conflict would serve to impede

employee innovation behavior. At the same time, there is evidence in the innovation literature to suggest that perceived environmental threat, negative moods, anxiety and distress are positively related to innovation and creativity (Anderson *et al.*, 2014; George and Zhou, 2002; Mone *et al.*, 1998). From this standpoint, it is equally possible that the otherwise negative aspects of ethnic conflict could enable employee innovation behavior.

Indeed, the conflict management literature has long provided evidence of the constructive forces of conflict (Baron, 1991; Coser, 1956; Deutsch, 1973). Conflict is said to foster, among other beneficial processes and outcomes, consideration of new ideas and approaches that can facilitate innovation and change (Baron, 1991). Recent studies on the relationship between conflict and innovation indicate that the way in which conflict is managed has a bearing on innovation performance (De Drue, 2006). Collaborative conflict management has been shown to provide an environment conducive to innovation and creativity (Chen *et al.*, 2005; Chen *et al.*, 2012; De Drue, 2006; George and Zhou, 2002).

The objective of this study is to examine the main and interaction effects of employee sensitivity to ethnic conflict, organizational frustration, and collaborative conflict management style of supervisors on employee innovation behavior. In part, we respond to calls in the innovation literature to investigate the “dark side” of innovation predictors, that is, to go beyond the “uncritically assumed positive antecedents” of innovation and consider potential negative forces, or negative forces in tandem with positive forces (Anderson *et al.*, 2014, p. 1322). We do this by investigating the “dark side” effects on innovation of violent ethnic conflict external to the firm and organizational frustration internal to the firm. We also respond to calls in the conflict management literature for an interdisciplinary approach to ethnic conflict in relation to organizational phenomena (Posthuma, 2011). Ethnic conflict and its ramifications are said to be best understood through multiple disciplines and a broad perspective (Lee *et al.*, 2004). The current study is part of a larger research effort that

examines employee attitudes and behavior in environmental contexts of ethnic conflict, civil war, and terrorism (Lee and Reade, 2015; Reade, 2009; Reade and Lee, 2012),

This study is expected to contribute to our understanding of the environmental influence on, and organizational predictors of, employee innovation behavior. Few empirical studies exist on the effects of adverse sociopolitical conditions on employee attitudes and behavior that could affect the competitiveness of the firm. This study is the first to our knowledge to empirically examine the influence of ethnic conflict on employee innovation behavior. Employee propensity to work with colleagues to formulate and implement ideas for new and/or improved products, services, and job processes is fundamental to a firm's competitive advantage. Understanding what enables and constrains employee innovation behavior under environmental conditions of violent sociopolitical conflict is valuable for managers that conduct business in conflict settings.

The paper proceeds with a review of the literature on innovation, ethnic conflict, organizational frustration, and collaborative conflict management as a basis for hypotheses development. This is followed by methods, results, and discussion of implications for research and management practice.

## **Innovation and the Firm**

Innovation is fundamental to a firm's performance, competitive advantage and longer-term survival (Anderson *et al.*, 2014; Garcia-Morales *et al.*, 2006; Jimenez-Jimenez and Sanz-Valle, 2008; Scott and Bruce, 1994). As noted by Anderson and colleagues (2014, p. 1298) in their review of the innovation and creativity literature, innovation has generally been conceptualized as "both the production of creative ideas as the first stage and their implementation as the second stage". In other words, innovation is concerned with the formulation of novel and useful ideas, and idea implementation. It also encompasses



incremental improvements to existing products, services, and processes, and the adaptation of products and processes from outside the organization (e.g. Scott and Bruce, 1994). Innovation is a broad concept, and a multitude of disciplines address various aspects of innovation: quality management, operations management, technology management, product development, marketing, strategic management, economics, and organizational behavior (Hauser *et al.*, 2006).

Innovation is often conceived at the organizational level (e.g. Chen *et al.*, 2005). Less attention has been paid to innovation at the individual or group level, including the influence of work groups on individual innovative behavior (Scott and Bruce, 1994). In particular, employee innovation behavior -developing, adopting and implementing new ideas for products and work methods- is considered to be an important asset of the firm (Yuan and Woodman, 2010). It has been pointed out that collective effort among peers is critical to the generation of ideas (Sethia, 1989). This suggests that innovation in the workplace is generally the result of collaborative efforts between colleagues, rather than the efforts of individuals working in isolation (Scott and Bruce, 1994). We take an organizational behavior approach, by examining employee innovation behavior and the influence of macro-environmental and organizational variables.

Numerous studies have been conducted on the antecedents and moderating factors associated with organizational innovation (Calantone *et al.*, 2003; Damanpour, 1991). These include factors at the individual, group, organizational and environmental levels of analysis. At the individual level, and of interest to the present study, are the effects of psychological states and supervisor behavior. While positive psychological states are generally associated with promoting innovation, negative psychological states such as threat, distress, and negative mood have been found to be positively related to innovation (Anderson *et al.*, 2014). A study by George and Zhou (2007), found that that positive and negative mood states

together heightened creativity. In other words, positive and/or negative moods, or ambivalent emotions, can co-exist to enhance creativity and innovation (Fong, 2006), and has been found to be particularly the case when the supervisor provides a supportive context (George and Zhou, 2007).

Supervisory behavior is considered important for fostering a work environment conducive to innovation. For instance, leadership style has been found to be an important predictor of organizational innovation (Daft, 1978; Jung *et al.*, 2003; Sarros *et al.*, 2008). Likewise, conflict management style has been associated with innovation (Chen *et al.*, 2005, 2012; Song *et al.*, 2006; Suliman and Al-Sheik, 2008). A supervisor's conflict management style may also lead to employee attitudes conducive to behavior that fosters employee innovation (Chan *et al.*, 2008; Ma *et al.*, 2008). A collaborative style of conflict management has been associated with innovation performance (Chen *et al.*, 2005).

Factors that have received less attention in the innovation literature are “dark side” phenomena as well as the external environment as a predictor of innovation (Anderson *et al.*, 2014). Dark side factors are those that might constrain innovation. For instance, at the organizational level, obstacles to innovation include entrenched policies, procedures, and an adherence to the status quo (Amabile *et al.*, 1996). In Dougherty and Hardy's (1996) study on problems with sustained product innovation, respondents expressed their frustration with management and with difficulty obtaining resources within the organizational political structure. Organizational frustration encompasses situational impediments that block goals and performance (Heacox and Sorenson, 2004; Spector, 1978).

Regarding the operating environment as a predictor, the innovation literature is somewhat mixed. On the one hand, it is suggested that uncertain environments limit a firm's willingness to take risks and render decision making more difficult (Calantone *et al.*, 2003), including when an organization is in decline (Cameron *et al.*, 1987). Particularly in hostile

environments, resource scarcity is a consideration (Kreiser and Marino, 2002) and firms may become more financially conservative (Latham and Braun, 2009). Challenges to sustaining organizational innovation are said to include turbulence in the operating environment (Santos-Vijande and Alvarez-Gonzales, 2007).

On the other hand, there is substantial and growing evidence in the innovation literature suggesting that uncertain, hostile or turbulent environments may pressure or promote innovation as the firm attempts to adapt to competition, threats and changing circumstances in order to survive (Freel, 2005; Garcia-Morales *et al.*, 2006; McCann and Selsky, 1984; Negassi and Hung, 2014). Freel (2005), for instance, found that higher levels of innovation are associated with uncertainty in the market and technological environments. Studies on turbulent markets have found evidence suggesting a positive relationship with innovation (Lichtenthaler, 2009). There is also evidence in the organizational decline literature that a measurable threat to the organization's viability promotes innovation (Mone *et al.*, 1998). Further, there is evidence suggesting that perceived environmental threat is associated with innovation. Threats involve a negative situation in which loss is likely and over which one has relatively little control (Dutton and Jackson, 1987). Covin, and Slevin (1989) found that small firms exhibited more entrepreneurial, innovative behavior in hostile environments. While adverse environments generally refer to market turbulence and competition, recent anecdotal evidence from the Middle East indicates that sociopolitical turmoil served to invigorate innovative strategies for the survival of small business owners (Wonacott, 2012).

Organizational innovation is a dynamic capability that integrates, builds, and reconfigures competences to address rapidly changing environments (Eisenhardt and Martin, 2000; Garcia *et al.*, 2006). While the innovation process has been viewed as linear in the past, there is recognition that it is an interactive process in terms of technological stages, centers of

innovation activity such as R&D centers, and so forth (Adams *et al.*, 2006). These observations underscore the interactive process between variables related to innovation. One of the most influential theoretical perspectives in the creativity and innovation literature is the interactionist perspective of organizational creativity (Woodman *et al.*, 1993). It emphasizes interactions between individual, group, organizational and contextual factors that might enhance or inhibit creativity in the work domain. This theoretical perspective forms the overarching conceptualization for our research model. We are interested in the main and interaction effects of employee sensitivity to ethnic conflict as an external predictor, and organizational frustration and collaborative conflict management style of supervisors as internal predictors, of employee innovation behavior. Our research hypotheses regarding these relationships are developed in the following sections.

### **Ethnic conflict: external impediment or enabler?**

Conflict between ethnic groups is considered to be a leading cause of violence and instability around the world (Carter *et al.*, 2009). Particularly in its manifestations of war and terrorism, conflict between ethnic groups can disrupt lives and business activities, endanger people and assets, and instill fear and anxiety in the populace (Chirot, 2001). Ethnic conflict stems from perceived grievances by an ethnic group, perceptions of relative deprivation, and perhaps repression. Violence can occur if there is no perceived remedy for the situation through political, legal, or economic means.

Well known ethnic conflicts around the world include Israel and Palestine, Northern Ireland, Kashmir, Greece and Turkey, Bosnia, South Africa, and Rwanda (Carter *et al.*, 2009). Sri Lanka, the setting for this study, is well known for having had one of the world's longest ethnic-based civil wars that lasted 26 years and ended in 2009 (Shastri, 2009). There are a number of ethnic groups in Sri Lanka, though the two at the center of the ethnic conflict

were the Tamil-speaking Sri Lankan Tamils who are primarily Hindu, and the majority Sinhalese who speak Sinhala and are mainly Buddhist. Colombo, the commercial capital of Sri Lanka, experienced terrorist attacks particularly during the final decade of the war. It is estimated that over 70,000 people lost their lives during the war (Shastri, 2009).

Studies on the effects of ethnic conflict on employee behavior have revealed negative effects for the organization (Lee and Reade, 2015; Reade, 2009; Reade and Lee, 2012). These findings are consistent with studies on the effects of war and terrorism on employee attitudes, behavior and wellbeing (Alexander, 2004; Bader and Berg, 2013, 2014; Massarra and Karkoulian, 2008; Vinokur, *et al.*, 2011). As noted earlier, this includes lower work motivation, work productivity, organizational commitment, and job satisfaction. It also includes higher levels of anxiety and stress.

However, as elaborated in the previous section, there is compelling evidence to suggest that negative environmental and psychological states are associated with innovation, the dependent variable of interest in this study. As there are no guiding studies to date on the relationship between ethnic conflict and employee innovation behavior, we adopt the view of a positive relationship for the following reasons. One, even though violent sociopolitical conflict has been shown to have a negative impact with regard to some aspects of employee behavior, the same form of conflict can reportedly have differential effects on employee behavior. Two, even though the innovation literature is somewhat mixed on the effects of a 'turbulent and hostile' environment on innovation, these environments generally refer to turbulent and hostile markets and competition. Perhaps more pertinent to the current study is anecdotal evidence from the Middle East indicating that sociopolitical turmoil served to invigorate innovative strategies for the survival of small business owners (Wonacott, 2012). In other words, conflict and tragedy can spawn innovative solutions for change. Three, there

is sufficient evidence in the innovation literature to suggest that conflict promotes idea generation and innovation.

We consider that individuals are likely to be sensitive to the tension and anxiety-producing events in the ethnically-charged societal context, and that such conflict sensitivity is likely to promote innovation behavior in the work domain. In other words, an individual's sensitivity to the sociopolitical environment is a vehicle through which external conflict has a bearing on organizational behavior phenomena. We propose that the higher the level of individual conflict sensitivity, the greater the propensity for individual engagement in innovation behavior. It is reasonable to assume, however, that an extreme level of sensitivity to ethnic conflict may not be beneficial as indicated in the general conflict management literature (De Dreu, 2006; Thomas, 1992). We therefore expect our proposed positive relationship between employee sensitivity to ethnic conflict and employee innovation behavior to be curvilinear, rather than linear. We hypothesize as follows.

*H1.* Employee sensitivity to ethnic conflict has a positive, curvilinear relationship with employee innovation behavior.

## **Organizational frustration**

Organizations by their very nature produce frustration (Spector, 1978). The basic idea of organizational frustration is twofold: one is that there are organizational or situational factors associated with constraint that contribute to individual frustration with the organization and, two, that individual reaction to frustration can take the form of withdrawal behavior, altered task performance, and abandonment of goal (Heacox and Sorenson, 2004). Besides task performance, the work on frustration has been concerned with aggression (Spector, 1978; Storms and Spector, 1987). In an organizational setting an employee may not show outward

aggression in response to frustration, but rather might display it privately in acts of sabotage (Spector, 1975).

The concept of situational constraints (O'Connor *et al.*, 1982; Peters *et al.*, 1980) relates to Spector's (1975) hypothesized sources of interference, and refer to aspects of the immediate work environment that “interfere with the translation of abilities and motivation into effective performance” (Storms and Spector, 1987). When situational constraints block goals or performance, employees are thought to respond with greater frustration (O'Connor *et al.*, 1982). Such constraints may include rules, policies and perceived obstacles. The process of innovation is likely to entail the need to alter the status quo, that is, to do things differently. Organizational constraints like rules and entrenched systems procedures, particularly in larger organizations, may hamper deviation from established practices and thwart innovation (Dougherty and Hardy, 1996). In their work on creativity, the first stage of the innovation process, Amabile and colleagues (1996) found empirical support for a negative effect of organizational impediments on creativity, including overemphasis of the status quo. We predict that organizational frustration emanating from situational constraints that block goals and performance will be negatively related to employee innovation behavior. We hypothesize as follows.

*H2.* Organizational frustration is negatively associated with employee innovation behavior.

## **Collaborative conflict management**

Conflict management strategies or styles can play an important role in effectively managing the conflict that arises from divergent needs or misperceptions between parties (Barbuto *et al.*, 2010). In an organizational context there can be interpersonal conflict that occurs

between work colleagues or between employees and supervisors, as well as intragroup conflict that is focused on members of a team.

The most widely used conflict management style framework includes five styles that center on the extent of concern for one's own outcomes versus the extent of concern for other's outcomes (Rahim, 1983; Thomas, 1976, 1992). The five conflict management styles are: dominating (also referred to as competitive or forcing), accommodating (also referred to as obliging or smoothing), avoiding, compromising, and collaborative (also referred to as integrative or problem solving) (e.g. Rahim, 1983; Thomas, 1976, 1992).

A dominating or competitive style is high on concern for one's own outcome and low on concern for other's outcome, and is characterized by threats, punishments, intimidation, and unilateral action. An accommodating style is low on one's own outcomes and high on the other's outcomes, and involves lowering one's expectations and letting the other party have his or her way. An avoiding style is low on concern for both self and other; it is a passive strategy where one retreats or does nothing. A compromising style is a mid-level concern for both self and other and is characterized by a give and take process where one sacrifices something to get something from the other party.

A collaborative or integrating style is the polar opposite of the dominating style, and is high on concern for the outcomes of both self and other. It is characterized by a problem solving process where one actively works with the other party to pursue avenues that maximize joint gains. The collaboration style of conflict management is considered to be optimal for synthesizing ideas and to work on complex issues. The collaborative style is thought to be the most effective conflict management strategy (Gross and Guerrero, 2000; MacIntosh and Stevens, 2008), and has been found to reduce both conflicts and stress (Friedman *et al.*, 2000).



### *Collaborative style and leadership effectiveness*

Conflict management style has been associated with leadership effectiveness (Barbuto *et al.*, 2010; Chen *et al.*, 2005; Luthans *et al.*, 1985; Mintzberg, 1975). It has been reported that effective leaders spend more time addressing conflict than less effective leaders (Luthans *et al.*, 1985). This suggests a link between conflict management style and leadership effectiveness, which has been empirically supported in a study by Barbuto *et al.* (2010). In their study, only the collaborative style was significantly related to leadership effectiveness among all the five conflict management styles tested. Further, the collaborative style was found to be significantly associated with the personality traits of agreeableness and openness, suggesting that leaders who adopt this style are cooperative rather than competitive, and are creative, non-conformist, and embrace autonomy. The study confirmed previous findings on the importance of the collaborative conflict management style for leadership effectiveness, and suggests that leaders who constantly use a collaborative approach to conflict management are likely to “acquire information, respond to the changing environment in resourceful ways, and formulate and implement adaptive strategies to meet the various challenges” (Barbuto *et al.*, 2010, p. 445). Participative leaders typically encourage their subordinates to play an active role in the control and design of their work. As a result, employees tend to be more creative and innovative when leaders display a participative approach (Axtell *et al.*, 2000).

A participative leader is proactive in problem solving, and is thus likely to utilize a collaborative approach to conflict management, as opposed to a dominating or forceful approach. A collaborative approach is both proactive and participative in that it is characterized by a sharing of problems with concerned parties so that the problems can be resolved together. This form of participative, shared, or collaborative approach to both leadership and conflict management is where the current trend of leadership appears to be moving (Kuttner, 2011). A collaborative or integrative approach to conflict management has

been found to promote innovation (Chen *et al.*, 2005; Chen *et al.*, 2012). Chen and colleagues (2005) found that a cooperative style of conflict management promotes constructive conflict and top management team effectiveness, which in turn enhances organizational innovation. The above leads us to propose that when an employee perceives that his or her supervisor uses a collaborative conflict management style, this will enhance employee innovation behavior. We hypothesize as follows.

*H3.* Collaborative conflict management style of the supervisor is positively associated with employee innovation behavior.

### **Relationships among research variables**

As noted earlier, there is recognition that innovation is an interactive process. The interactionist theoretical perspective emphasizes interactions between individual, group, organizational and contextual factors that might enhance or inhibit creativity in the work domain (Woodman *et al.* 1993). In line with this perspective, we propose that, in addition to the hypothesized main effects, the three independent variables will interact to promote employee innovation behavior. We highlight the role of collaborative conflict management style where applicable in the hypothesized interactions.

A collaborative conflict management style is associated with openness, proactiveness and participation in problem solving. For these reasons it is reported to facilitate innovation. It has been observed that in situations of protracted conflict and tragedy there emerges creativity for survival and hope for a better future (Robben and Nordstrom, 1995). We predict that a collaborative conflict management style of the supervisor will harness the ‘risk and survival alertness’ of the external environment and strengthen the proposed positive

relationship between employee sensitivity to ethnic conflict and employee innovation behavior. We hypothesize as follows.

*H4a.* Collaborative conflict management style of the supervisor moderates the relationship between employee sensitivity to ethnic conflict and employee innovation behavior, such that higher collaboration strengthens the proposed positive relationship between employee sensitivity to ethnic conflict and employee innovation behavior.

Organizational constraints such as bureaucratic red tape that block innovation efforts can lead to organizational frustration. We predict that a collaborative conflict management style of the supervisor will mitigate the proposed negative relationship between organizational frustration and employee innovation behavior. This leads us to hypothesize the following.

*H4b.* Collaborative conflict management style of the supervisor moderates the relationship between organizational frustration and employee innovation behavior, such that higher collaboration weakens the proposed negative relationship between organizational frustration and employee innovation behavior.

Employee sensitivity to the external conflict is likely to interact with organizational frustration to affect employee innovation behavior. Based on our predictions in H1 and H2, we hypothesize as follows.

*H4c.* Employee sensitivity to the ethnic conflict interacts with organizational frustration, such that employee innovation behavior is enhanced when employee sensitivity to the ethnic conflict is high and organizational frustration is low.

We further predict that the interaction between employee sensitivity to ethnic conflict, organizational frustration, and collaborative conflict management style of the supervisor will together enhance employee innovation behavior. Our prediction rests mainly on what we

believe is an ‘alchemic’ role of collaborative conflict management to catalyze or transmute various forms of conflict and frustration into behavior conducive to productive change. We hypothesize as follows.

*H4d.* There is a three-way interaction effect between employee sensitivity to ethnic conflict, organizational frustration, and collaborative conflict management of the supervisor that enhances employee innovation behavior.

## **Method**

### *Sample*

The research setting was Colombo, Sri Lanka. As noted earlier, Sri Lanka is known for having endured one of the world’s longest ethnic-based civil wars and intractable conflicts. The 26-year war, fought between the Sri Lankan government forces and Tamil separatists, came to an end with the death of the leader of the Liberation Tamil Tigers of Elam in 2009. At the time of data collection in 2000, suicide bombings and clay mine detonations that produced civilian casualties were prevalent in Colombo, the capital city. Heavily armed military personnel manned checkpoints at city intersections, and randomly demanded identification cards which contributed to a tense atmosphere.

A structured questionnaire was used to collect responses from individual managers at foreign-invested and indigenous firms, the target population for the research. The questionnaire was administered in English since the English language is widely used for official, commercial and business education purposes, especially in urban areas like the capital city where the research was conducted. The snowball sampling method was used because it provides a means to gather a sample of managers that would otherwise be difficult to access (Singleton and Straits, 1999; Whitley, 1996). Five to ten questionnaires were given to 200 full-time Sri Lankan managers enrolled in an evening MBA program, where English is

used as the medium of instruction, at a top university in Colombo. The managers (MBA enrollees) in turn distributed questionnaires and envelopes to their colleagues in the workplace, which were returned anonymously to one of the authors who was a faculty member at the university in Colombo. Questionnaires were distributed within 129 organizations in greater Colombo, representing manufacturing, service, agribusiness, and public sectors.

Manufacturing sector companies comprise 21.1% of the sample and are largely in garments, foodstuffs, pharmaceuticals, ceramics, rubber products, and consumer products. Service sector firms comprise 55.3% of the sample and are mainly in banking, insurance, leasing, tea broking, shipping, import-export, telecommunications, and software development. Agribusiness firms comprise 1.7% of the sample and are in the business of fertilizers, livestock, and tea, rubber and coconut plantations. Public sector organizations comprise 16.9% of the sample and include universities and government departments such as the Board of Investment, Port Authority, and Central Bank. 917 questionnaires were returned. This yielded a 66% response rate and 898 usable questionnaires.

### *Measures*

The research variables include the dependent variable (employee innovation behavior), three main independent variables (employee sensitivity to ethnic conflict, organizational frustration, collaborative conflict management style), and a set of control variables. The scale items are measured on a five-point Likert scale where 1=strongly disagree and 5=strongly agree, unless otherwise noted. No copyrighted materials were used for the development of the scales.

*Employee innovation behavior* ( $\alpha=.89$ ). Employee innovation has been typically measured from the vantage point of the supervisor (Scott and Bruce, 1994). It has been

argued that employees rather than supervisors have a more nuanced understanding of the innovative behaviors that they engage in on an ongoing basis, hence providing a more reliable measure (Janssen, 2000). Innovation is the result of engagement with colleagues and others to generate and realize ideas for new and/or improved products, services, and job processes. A six-item measure was developed for our dependent variable that captures an individual's assessment of collective engagement in innovation behavior among self and colleagues. Sample items for the idea generation component of the measure include, 'My colleagues and I try to come up with ideas for new products/services for our customers,' and 'My colleagues and I regularly think of better ways of doing our jobs.' Sample items for the idea realization component include, 'My colleagues and I are keen to try out new ways of doing things,' and 'My colleagues and I are good at turning ideas into new or improved products/services.'

*Employee sensitivity to ethnic conflict* ( $\alpha=.83$ ). Ethnic conflict external to the firm is captured by the sensitivity of employees to ethnic conflict. We used a 4-item scale to measure the affective and behavioral aspects of an employee's reaction toward the work domain in response to violent ethnic conflict (Reade and Lee, 2012). The affective facet is measured with two items, "I seem to lose enthusiasm for work whenever I get news of another bomb blast" and "I feel more tense at work when there is a fresh incident related to the ethnic conflict". The two items that capture the behavioral facet are "I sometimes find it difficult to perform my job well due to the mood created by the ethnic conflict" and "I am sometimes late or miss work due to the incidents related to the ethnic conflict". We use the squared term of ESEC in the analysis as per our argument for a curvilinear relationship with innovation behavior.

*Organizational frustration* ( $\alpha=.88$ ). Employee frustration with the work organization stems from situational factors in the immediate work environment associated with constraint

and the blockage of goals or performance (O'Connor *et al.*, 1982; Peters *et al.*, 1980; Heacox and Sorenson, 2004; Spector, 1975). We used an 11-item scale based on Spector (1975) that includes items relevant to the potential constraint of employee innovation behavior such as “I feel blocked in my efforts to be creative”, “There are a lot of petty and unreasonable rules at work” and “I find that every time I try to do something at work I run into obstacles”.

*Collaborative conflict management style of supervisor* ( $\alpha=.80$ ). The extent to which an employee perceives that his or her supervisor uses a collaborative approach to resolving conflict was measured with a 4-item scale derived from the conflict management literature (eg. Rahim, 1983; Thomas, 1976), and structured using the supervisor-subordinate dyad format of Howat and London (1980). The items were prefaced by the statement: “When a disagreement occurs in your workgroup involving your supervisor, to what extent does *your supervisor* use each of the following behaviors to resolve the situation? Remember, you are rating how *your supervisor* behaves when resolving conflict, not how you behave or what you think is desirable” (Howat and London, 1980, reported in Cook *et al.*, 1989: 255). Items include, “addresses all the concerns that s/he has and the other person has”, “brings the issues immediately up for discussion”, seeks the other person’s ideas in working out a solution”, and “shares the problem with the other person so they can work it out”. They were measured on a five-point Likert scale where 1=never occurs, 2=seldom occurs, 3=sometimes occurs, 4=frequently occurs, and 5=usually occurs.

*Control variables.* A set of control variables associated with innovation are included. These are gender, age, tenure, position (Scott and Bruce, 1994), and size of company and workgroup by number of employees (Damanpour, 1992; Garcia *et al.*, 2006). Also included is firm ownership to assess any variation between indigenous and foreign-invested firms. Given the societal context of ethnic conflict, we control for ethnic diversity in workgroups.

Respondents were asked to identify whether their workgroup was comprised of members from one ethnic group or from more than one ethnic group.

## **Results**

Here we report descriptive and empirical findings. Means, standard deviations and intercorrelations of all the research variables are provided in Table 1.

[Table 1 about here]

The characteristics of the achieved sample are as follows. About 72% of the total sample are male and 28% are female. Regarding age, more than half of respondents (53%) belong to the 26-35 year old age group, while 28% belong to the 36-45 year old age group; those over the age of 45 comprise 13.5% while those under the age of 26 comprise 5.5% of the sample. In terms of position, more than half of respondents (51%) occupy a middle managerial level position, while 25% hold upper managerial positions and 24% hold lower managerial positions. The majority of respondents (46%) have been with their company for 1-5 years while 30% of respondents have been with their company for 6-15 years; 11% have been with their company for more than 15 years, while 13% have been with their company for less than 1 year. Respondents work for companies that vary in size, with about 60% working for firms that hire less than 500 employees and 40% working for firms that hire 500 and more employees. In terms of firm ownership, 58% work for indigenous firms while the remainder (42%) work for foreign-owned firms with varying degrees of primarily UK, European, and US ownership. Regarding workgroup ethnic diversity, 17% of respondents report working in ethnically homogenous workgroups while 83% report working in ethnically non-homogenous workgroups.



Our hypotheses were tested through hierarchical regression analyses, shown in Table 2. In Model 1 of the analysis we entered the control variables, including workgroup ethnic diversity. In Model 2 we added our external and internal independent variables, employee sensitivity to ethnic conflict (ESEC), organizational frustration (frustration), and collaborative conflict management style of the supervisor (collaboration). Since we predict that ESEC has a curvilinear relationship with employee innovation behavior, we use the squared term in the analysis. In Model 3 we add three 2-way interaction terms, collaboration x ESEC, collaboration x frustration, and ESEC x frustration. In Model 4 we add a 3-way interaction term including ESEC, frustration and collaboration. This is done in order to assess the effects of interaction between the research variables on employee innovation behavior. The interaction terms are mean-centered in their construction. The beta coefficients of the final model, Model 4, are used to determine support for the research hypotheses.

[Table 2 about here]

We proposed in Hypothesis 1 that employee sensitivity to ethnic conflict (ESEC) will have a positive, curvilinear relationship with employee innovation behavior. As shown, the squared term of ESEC has a marginally significant positive direct effect on employee innovation behavior ( $\beta = .08, p < .10$ ). Hypothesis 1 is therefore supported. Hypothesis 2 posits that organizational frustration will be negatively related to employee innovation behavior. Organizational frustration has a negative and highly significant effect ( $\beta = -.17, p < .001$ ), therefore supporting Hypothesis 2. Hypothesis 3 states that a collaborative conflict management style of supervisor will have a positive relationship with employee innovation behavior. This hypothesis is supported with a positive and highly significant effect ( $\beta = .20, p < .001$ ).

Hypotheses 4a, 4b, 4c and 4d propose that there are interaction effects between the research variables. Hypothesis 4a predicts that a collaborative conflict management style adopted by the supervisor will moderate the relationship between (ESEC) and employee innovation behavior, such that the greater the perceived collaborative conflict management style of the supervisor, the positive the relationship between ESEC and employee innovation behaviour is stronger. This relationship is not significant so Hypothesis 4a is not supported. Hypothesis 4b predicts that collaborative conflict management style of supervisors moderates the relationship between organizational frustration and innovation behavior, such that the greater the perceived collaborative conflict management style of the supervisor, the weaker the negative relationship between organizational frustration and employee innovation behavior. The results were not significant so Hypothesis 4b is not supported. Hypothesis 4c predicts that employee sensitivity to ethnic conflict interacts with organizational frustration to enhance employee innovation behavior when ESEC is high and frustration is low. The relationship is not significant so Hypothesis 4c is not supported. (Note that in Model 3 the relationship is positive and significant,  $\beta = .08, p < .05$ ). While each of the 2-way interaction terms are not significant in the final model, the 3-way interaction among ESEC, frustration and collaboration has a significant and positive relationship with employee innovation behavior ( $\beta = .11, p < .05$ ). Hypothesis 4d is therefore supported. These relationships are plotted in Figures 1 and 2.

[Figures 1 and 2 about here]

Figures 1 and 2 show the interaction effects of ESEC and frustration on employee innovation behavior under conditions of Low and High Collaboration, respectively. As shown, employee innovation behavior, our dependent variable, is represented on the y axis

(Innovation Behavior) and employee sensitivity to ethnic conflict (ESEC), our external predictor, is represented on the x axis. Frustration in low and high conditions was then plotted against both Innovation Behavior and ESEC. Figure 1 shows these relationships under conditions of Low Collaboration and Figure 2 shows these relationships under conditions of High Collaboration.

Comparing Figure 1 and Figure 2, employee innovation is highest when Collaboration is high, ESEC is high, and frustration is low. In both Figures 1 and 2, it can be seen that when ESEC is high, the difference between high and low frustration narrows in its effect on Innovation Behavior. In other words, when ESEC is high it tends to offset the negative impact of high frustration on employee innovation behavior. These relationships are further accentuated under conditions of High Collaboration. In Figure 2, the slopes are steeper for both low and high frustration, indicating that high collaboration makes more of a catalyzing impact vis-à-vis ESEC and frustration compared to conditions of Low Collaboration (Figure 1).

In sum, the results support our prediction that employee innovation behavior is influenced by employee sensitivity to ethnic conflict, organizational frustration and by a collaborative conflict management style adopted by supervisors.

## **Discussion and Implications**

We began this paper with a question: does ethnic conflict impede or enable employee innovation behavior? To answer that question we first considered the extant literature on the effects of sociopolitical conflict on organizational phenomena as well as the environmental and psychological predictors of innovation. While the literature is mixed, we found sufficient empirical and anecdotal evidence to proceed with examining ethnic conflict as a potential external enabler of employee innovation behavior. We also examined two predictors internal

to the organization: organizational frustration as a potential internal impediment, and collaborative conflict management style of supervisors as a potential internal enabler of employee innovation behavior. In addition to studying the main effects of these predictors on employee innovation behavior, we investigated their interaction effects. Our results support the main effects as predicted, and interaction effects reveal that employee innovation behavior is greatest when employees are highly sensitive to ethnic conflict external to the firm, when their frustration with the organization is low, and when they perceive their supervisor to be highly collaborative in managing conflict. Collaborative conflict management appears to play a further catalyzing role to enhance employee innovation behavior. These findings have implications for firms that operate in conflict settings and are elaborated below.

It appears that ethnic conflict does not impede employee innovation behavior, but rather enables it, at least in our sample. As predicted, we found a positive, although marginally, direct relationship between employee sensitivity to ethnic conflict and employee innovation behavior. Although the statistical significance of the relationship is modest, it is in keeping with a growing number of studies in the innovation literature that suggest that an adverse operating environment invigorates innovation to adapt to needed environmental changes (Garcia-Morales *et al.*, 2006). This result suggests that while sociopolitical conflict has been associated with negative effects on some aspects of employee behavior, the same form of conflict can have differential effects on various behavioral phenomena. For instance, sociopolitical conflict has been associated with lower commitment and satisfaction (Reade, 2009; Reade and Lee, 2012; Vinokar, 2012). Yet, innovation appears to be promoted by sensitivity to conflict external to the firm. This may stem in part from a hope for change in societal conditions, and engaging in innovation in the firm may be a small part of that desire

for change. Employee sensitivity to ethnic conflict further enhances employee innovation behavior through interaction with other variables, as discussed in more detail below.

For predictors of innovation internal to the firm, we proposed that organizational frustration would be an internal impediment and that a collaborative conflict management style of the supervisor would be an internal enabler of innovation behavior. We hypothesized a direct negative effect of organizational frustration on employee innovation behavior.

Organizational frustration is conceptualized as situational constraints emanating from the immediate work environment that block goals and task achievement. As predicted we found strong support for organizational frustration as an internal impediment to employee innovation behavior. The more employees feel that their efforts to be creative are blocked, that the rules are petty and policies unfair, and that they do not have authority to get their work accomplished, the less they are inclined to engage with colleagues to create new or improved products, services, and job processes.

We hypothesized a direct positive effect of collaborative conflict management style on employee innovation behavior. A collaborative style has been associated with openness to new ideas and proactive behavior, which are thought to facilitate innovation. As predicted we found that a collaborative style has a strong positive relationship with employee innovation behavior. The more employees feel that their supervisor addresses their concerns and seeks their ideas in working out solutions, the more they are inclined to engage with colleagues to innovate new and/or improved products, services and processes. We also proposed that a collaborative style of conflict management could play a moderating or interacting role vis-a-vis the relationships between the other research variables. This is discussed in the following section.

*The alchemic role of collaborative conflict management*

Following an interactionist theoretical perspective, we examined several two-way interactions and one 3-way interaction between the research variables. Only the three-way interaction that included all the independent variables was significant. The key finding is that employee innovation is highest when employee sensitivity to the conflict is high, organizational frustration is low, and collaborative conflict management style is high. While the two-way interactions were not significant, the three-way interaction results actually supported the proposed two-way interactions.

For instance, we hypothesized that collaborative conflict management would moderate the proposed relationships between employee sensitivity to ethnic conflict and employee innovation behavior by amplifying the positive effect, and between organizational frustration and employee innovation behavior by weakening the negative effect. The three-way results shown in Figures 1 and 2 clearly indicate that a highly collaborative style generates these effects. We also hypothesized that an interaction between employee sensitivity to ethnic conflict and organizational frustration. Again, the three-way results clearly show that innovation behavior is greater when ESEC is high and frustration is low. Moreover, when a highly collaborative style is added, there is a dramatic increase in the level of innovation behavior, not only from those reporting low frustration as expected, but also from those reporting high frustration. In other words, a highly collaborative style has the effect of transforming high frustration to a high level of innovation engagement.

Collaborative conflict management thus appears to have characteristics of alchemy, at least in our sample. In other words, it plays an alchemic role by transmuting social conflict and organizational frustration into employee behavior that is beneficial to the organization. It appears able to harness what is generally thought of as negative energy—both external and internal to the firm--and transmute that energy into a positive force for the organization, that is, employee propensity to engage with colleagues in innovation behavior. Alternately, a

collaborative approach to conflict management by supervisors could be viewed as releasing the constructive forces of conflict for the benefit of the organization. The findings lend empirical support to the effectiveness of leaders who adopt a collaborative approach to managing conflict (Chen *et al.*, 2005, 2012). The results provide support for fostering participative and collaborative leadership and conflict management styles as a leadership strategy in situations of sociopolitical conflict. This is consistent with the accounts of numerous writers who have suggested the need for a participative or collaborative leadership style to promote the innovation process (eg. Chen *et al.*, 2005, 2012).

#### *Limitations and future directions*

There are several limitations that need to be acknowledged, and which provide avenues for further research. The primary limitation is generalizability. The study included only one country. While Sri Lanka provided an appropriate setting for the current study of the effects of ethnic conflict on organizational phenomena, a larger sample of countries where ethnic conflict is prevalent would allow for comparisons and increase generalizability of the results. Also, while the study captured both foreign and indigenous firms across a broad range of industries, the research participants included only managers from the capital city. Future research would profit by including other employee groups and from a wider geographic range (urban and rural), which is likely to entail the need for survey instruments in indigenous languages.

The study utilized a cross-sectional design and self reports. It therefore provides only a snapshot of perceived innovation behaviors by individual employees. A snapshot does not capture the complexity inherent in prolonged sociopolitical conflict, as was the case in this study, since respondents interact dynamically with their environments (Saathoff, 2010). A longitudinal research design would allow observations of behavior over time that may be

shaped by their dynamic interaction with the external environment. A longitudinal design would also allow for an assessment of the constancy of employee innovation behavior. It has been pointed out that persistency in innovation enables a firm to capture technological and organizational learning effects that improve with time (Bartoloni, 2012).

Another area of potential weakness is that the respondents were not asked to reveal their ethnicity. This is because of the tense interethnic climate prevalent during the period of data collection. Researchers have commented on the perceived danger sensed by respondents when asked to reveal their ethnic identity in such an environment (Kingsolver, 2010). It was not comfortable to ask ethnicity information, and doing so may have lowered the response rate. An interesting finding is that there appears to be no variation in employee innovation behavior between workgroups that are ethnically homogenous and those that are ethnically non-homogenous. Having more information on the ethnic composition of workgroups would allow a more fine-grained analysis.

Further, it could be useful to gain the observations of team leaders regarding the innovation behavior of their subordinates. Studying individual innovative behavior in a natural work setting is a complex and difficult endeavor due to measurement issues and choice of criterion on which to focus attention (Scott and Bruce, 1994). Compared to other economic variables, such as production, innovation is much harder to measure. This is due to the very nature of the phenomenon of innovation, which is characterized by a high level of heterogeneity, or multiple facets including inputs to the innovation process, such as people, and physical and financial resources; knowledge management such as idea generation; innovation strategy; organizational culture and structure; portfolio management; project management; and commercialization (Adams *et al.*, 2006). A fuller framework of factors thought to enable (and impede) employee innovation behavior needs to be developed. This might include human resource management strategies which have been found to promote



innovation (Jimenez-Jimenez and Sanz-Valle, 2008). Leadership development and training in collaborative conflict management could be a valuable HRM intervention, given the findings in this study. The research model needs more variables to help explain employee innovation, particularly in contexts of sociopolitical conflict. As noted by Saathoff (2010, p. 242), prolonged sociopolitical conflict is one of the most challenging problems that we face, and the complexities go beyond a single, isolated conflict event. In that regard, it could prove beneficial to consider the range of conflict management styles and under what conditions (eg. conflict intensity, conflict duration, geographic distance from war theater, demographic profiles) each might be appropriate to utilize in contexts of ethnic or other forms of sociopolitical conflict.

Despite these drawbacks, the study provides a window to employee innovation behavior embedded in organizations located in an environment of ethnic conflict, and a means to enhance employee innovation behavior through developing collaborative conflict management skills of those in leadership positions. Employee engagement with colleagues to innovate products, services, and better job processes is fundamental to a firm's competitive advantage. Finding ways to foster employee innovation under adverse environmental circumstances is valuable particularly to managers that conduct business in conflict settings. The study also adds to our knowledge of factors promoting and constraining innovation in a developing country context. To date, such studies are relatively rare (Laosirihongthong *et al.*, 2013).

Given the important role that collaborative conflict management appears to have in promoting innovation behavior, firms might consider taking advantage of opportunities that exist for increasing culturally-relevant collaborative approaches. Many societies in Africa, Asia and Latin America are representative of cultural groups that value cooperative forms of resolving conflict (Faure, 2000). Anthropological studies show that countries in these regions

often have long histories of consensual, village-based dispute resolution (Merry, 1992). There is evidence of a growing sentiment for the revival of indigenous consensual dispute resolution processes as an alternative to formal, often colonially-imposed, rights-based legal systems (Ben-Mensah, 2004). Given the findings in the current study, this trend presents an opportunity for firms to utilize or leverage indigenous traditions of consensual conflict management to foster sustainable employee innovation behavior (Reade and McKenna, 2007, 2013).

Sociopolitical conflict occurs throughout the world and is on the rise (Heidelberg Institute, 2014). This study has contributed to our understanding of the effects of a violent operating environment on employee innovation behavior, and offers a practical means for controlling the impact on the firm. By cultivating a collaborative conflict management approach among supervisors, war-related tensions, distress and anxieties experienced by employees can be better channeled to promote innovation that benefits the firm.

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**Table 1. Means, standard deviations and correlations (N=727)**

<b>Variables</b>	<b>Mean</b>	<b>SD</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>1. Sex</b>	1.28	0.45											
<b>2. Age</b>	2.50	0.78	-.17**										
<b>3. Tenure</b>	2.39	0.84	-.08*	.48*									
<b>4. Position</b>	2.03	0.70	-.16**	.35**	.14**								
<b>5. Size of workgroup</b>	2.08	1.09	-.03	.17**	.23**	.18**							
<b>6. Size of workplace</b>	3.49	1.21	-.03	.12**	.27**	-.09*	.31**						
<b>7. Workgroup ethnic diversity</b>	0.83	0.38	-.06	.02	.06	.08*	.19**	-.01					
<b>8. Firm ownership</b>	0.42	0.50	.00	.11**	.13**	.00	.07	.16**	-.03				
<b>9. Employee sensitivity to ethnic conflict</b>	2.31	0.86	.11**	-.01	-.02	-.07*	-.02	-.03	-.08*	.02			
<b>10. Organizational frustration</b>	2.66	0.66	.05	-.03	-.01	-.08*	.00	.08*	-.05	.08*	.32**		
<b>11. Collaborative conflict management style</b>	3.45	0.83	-.02	-.10**	-.09*	-.04	-.07*	-.01	-.05	-.10**	-.01	-.34**	
<b>12. Innovation behavior</b>	3.87	0.59	-.20**	.09**	.06	.15**	.03	-.02	-.00	-.01	-.03	-.24**	.28*

Note. \*p<.05, \*\*p<.01

**Table 2. Hierarchical regression analysis of employee innovation behavior (N=726)**

	Model 1	Model 2	Model 3	Model 4
<b>Model 1</b>				
Sex	-.18***	-.18***	-.17***	-.17***
Age	.00	.01	.02	.01
Tenure	.04	.05	.05	.05
Middle management	.07	.06	.05	.06
Upper management	.14**	.13*	.12*	.13**
Size of workgroup	.01	.02	.02	.01
Size of workplace	-.02	-.02	-.01	-.01
Firm ownership	-.01	.03	.02	.02
Workgroup ethnic diversity	-.04	-.03	-.02	-.02
<b>Model 2</b>				
Employee Sensitivity to Ethnic Conflict (ESEC) (H1)		.08*	.06	.08 <sup>+</sup>
Organizational Frustration (Frustr) (H2)		-.17***	-.17***	-.17***
Collaborative Style (Coll) (H3)		.24***	.23***	.20***
<b>Model 3</b>				
Coll x ESEC (H4a)			.03	-.01
Coll x Frustr (H4b)			-.03	-.02
ESEC x Frustr (H4c)			.08*	.02
<b>Model 4</b>				
ESEC x Frustr x Coll (H4d)				.11*
$\Delta R^2$	.06***	.11***	.01	.01*
$F$	4.857***	11.590***	9.620***	9.438***
$R^2$	.06	.16	.17	.18
Adj. $R^2$	.05	.15	.15	.16
<p><i>Note.</i> Sex: 1=male, 2=female; Age: 1=less than 25, 2=25-35, 3=36-45, 4= over 45; Tenure: 1=less than 1 year in company, 2=1-5 years, 3=6-15 years, 4=over 15 years; Position dummy1=middle management, 2=upper management (base category: lower management); Size of workplace: 1=less than 20 employees, 2=20-99, 3=100-499, 4=500-999, 5= over 1000 employees; Size of workgroup: 1=less than 10, 2=10-19, 3=20-49, 4=over 50; Firm ownership: 0=indigenous, 1=foreign-invested; Workgroup ethnic diversity: 0=ethnically homogeneous group; 1=non-homogeneous group.</p> <p><sup>+</sup> <math>p &lt; .10</math>, * <math>p &lt; .05</math>, ** <math>p &lt; .01</math>, *** <math>p &lt; .001</math>.</p>				

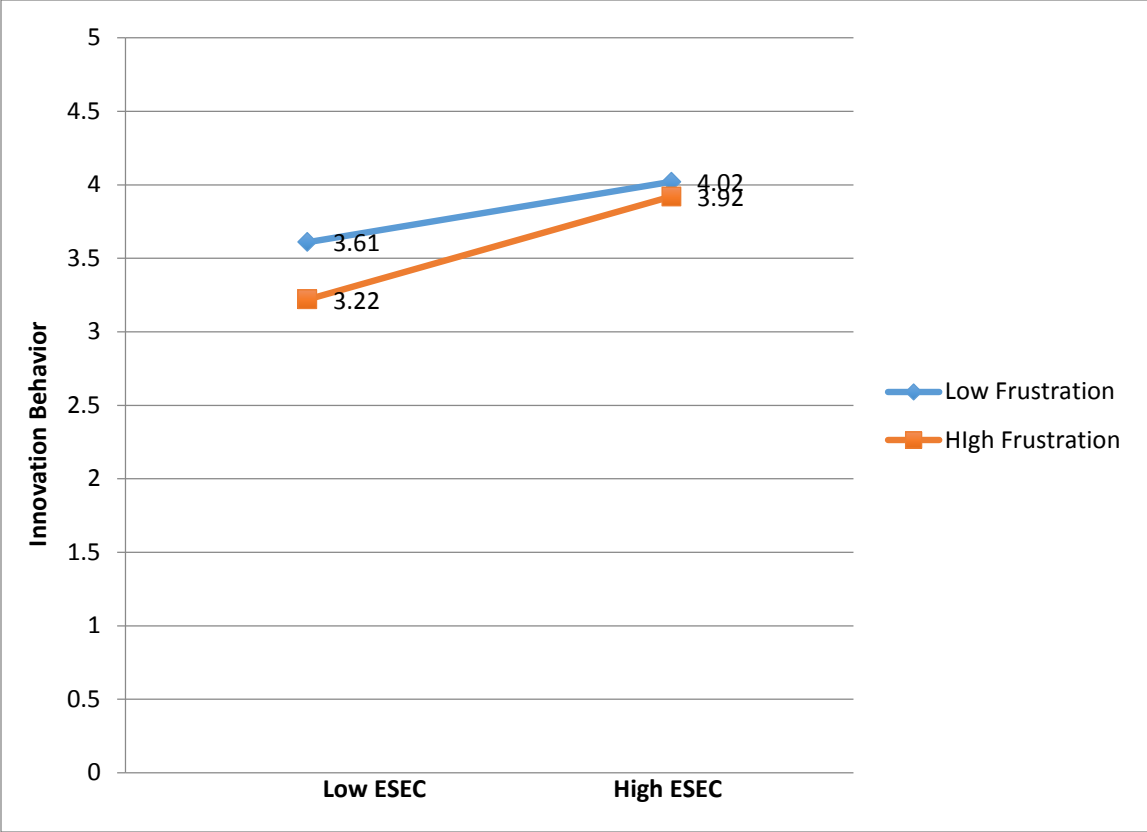


Figure 1. ESEC x Frustration Interaction: Low Collaboration

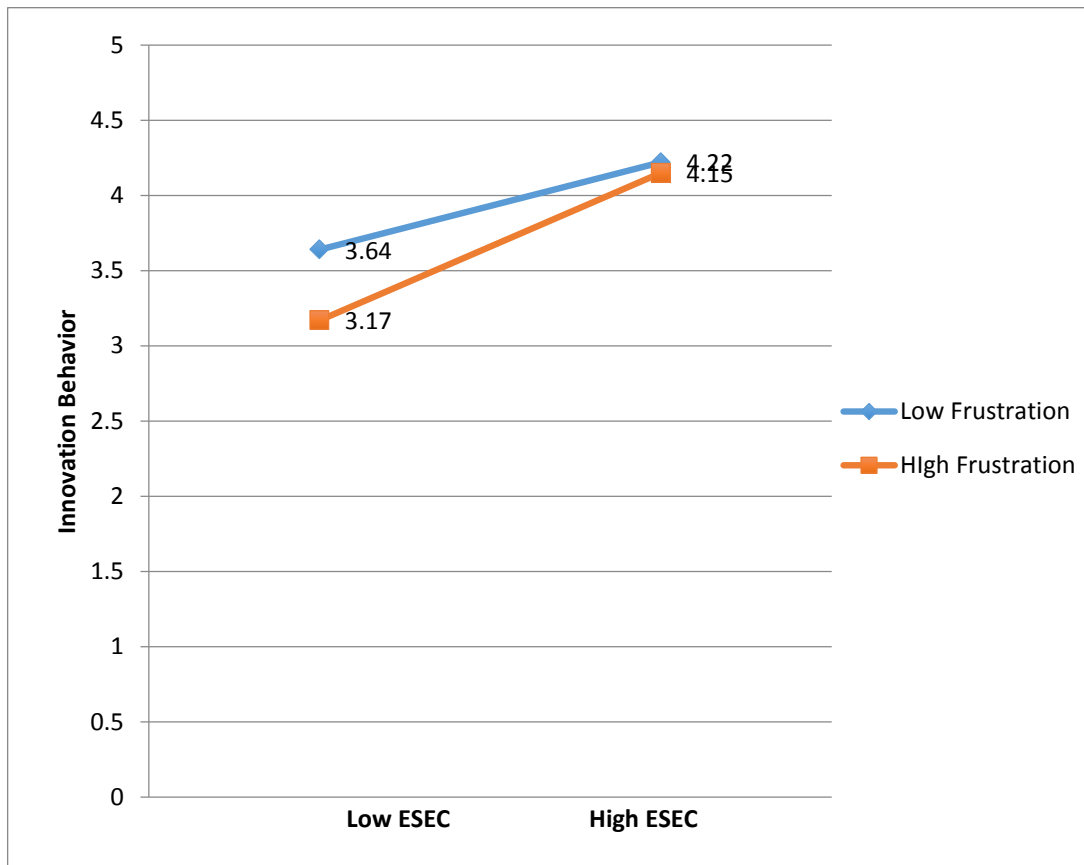


Figure 2. ESEC x Frustration Interaction: High Collaboration