



Production supervisor impacts on subordinates' safety outcomes: An investigation of leader-member exchange and safety communication

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Abstract

Problem: Supervisors are increasingly important to the functioning of manufacturing operations, in large part due to their role as leaders. While supervisors' relations and communication with their subordinates are known to be important in influencing subordinates' behavior, little is known about how these two factors will impact subordinates' safety. This study investigated how much each factor contributes to safety-related outcomes for blue-collar production employees. **Method:** Production employees at five Pennsylvania wood manufacturers completed a survey during their work shift. Five hundred and ninety eight employees provided data on leader-member exchange (LMX), safety communication, and safety-related events. Archival data on OSHA recordables were also obtained from the producers' human resources database. **Results:** Analyses found that the influence of LMX was greater than that of safety communication in predicting safety-related events. Neither LMX nor safety communication was significantly related to OSHA recordables. Results also demonstrated that employee job satisfaction and demographic variables such as gender and age have safety implications. **Impact on Industry:** Results from this study further emphasize the importance of production supervisors and illustrate the potential role of leader-member exchange in enhancing workplace safety. Specifically, organizations should foster positive social exchange between their employees and supervisors and enhance the leadership qualities of supervisors to help reduce workplace injuries.

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1. Introduction

Supervisors are an important part of manufacturing organizations, and play an increasingly critical role in delegating job tasks, managing subordinate performance, and juggling competing demands for productivity, quality, and safety. They are also seen as having a key role in communications between management and hourly employees (Therkelsen & Fiebich, 2003). Due to decentralization and other changes associated with organizations (Butz, Dietz, & Konovsky, 2001;

Kozlowski, Chao, Smith, & Hedlund, 1993), supervisors' leadership styles and exchange relations with subordinates are becoming more influential in affecting subordinates' performance and outcomes as compared to the influence of the organization itself (Stinglhamber & Vandenberghe, 2003).

Past research suggests that supervisors can impact the attitudes and behaviors of subordinates in a variety of ways. For example, results imply that positive exchange relations and communication between employees and supervisors can lead to increased job performance, job satisfaction, and organizational commitment (Gerstner & Day, 1997; Penley, Alexander, Jernigan, & Henwood, 1991). Exchange relations and communication between employees and supervisors have also been shown to affect specific employee behaviors such as safety performance. Hofmann and Morgeson (1999) found that

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employees in a manufacturing setting who have higher quality relationships and better communication with their leader are more likely to feel free to raise safety concerns, which can ultimately lead to fewer accidents assuming management acts on those concerns. Their research is one of the few examples of similar work done with a sample of blue-collar employees, and thus is an area that this work sought to expand upon.

Moreover, recent findings have shown that investigating the effects of organizational factors on employees' safety behavior can be a fruitful approach in safety research (Hofmann, Jacobs, & Landy, 1995; Michael, Evans, Jansen, & Haight, 2005; Zacharatos, Barling, & Iverson, 2005). Organizational factors such as climate (Barling, Loughlin, & Kelloway, 2002; Hemingway & Smith, 1999), personnel selection (Jones & Wuebker, 1988), and hiring practices (Vredenburg, 2002) have been investigated in an effort to increase our understanding of safety-related outcomes. Few researchers, however, have investigated the influence of organizational exchange (e.g., exchange relations between the leader and subordinate) and communication between a leader and a subordinate on workplace safety (Hofmann & Morgeson, 1999; Hofmann, Morgeson, & Gerrass, 2003).

We believe that the influence of supervisor-subordinate relationships and communication is an area worthy of further investigation given its potential to enhance safety performance in manufacturing organizations. In part, the dyadic supervisor-subordinate relationships should be given greater consideration since supervisors tend to communicate and interact differently with different subordinates and seem not to use the same style, content, and so forth, with all subordinates as some have proposed (Dienesch & Liden, 1986; Liden & Graen, 1980; Yrle, Hartman, & Galle, 2003). Further, since the practitioner-targeted safety literature often promotes the importance of communication, especially for behavior-based safety programs (e.g., Hidley, 1998), there is even greater need to conduct empirical studies investigating the effects of supervisor-subordinate safety-related communication.

In this study we develop and test a model linking leadership and safety communication with workplace safety. We propose that both positive exchange relations between a leader and a subordinate and their perceived safety-related communication will improve the subordinate's safety practices and thus reduce accidents. Our goal is to gain a better understanding of how exchange relations and safety-related communication between a leader and a subordinate can influence subordinates' safety outcomes. Further, we sought to investigate whether one of the two factors is more valuable in reducing safety-related events for hourly workers in a manufacturing environment. Our research therefore seeks to investigate the function of those factors in production organizations and offer readers with suggestions for improving workplace safety. The term safety-related event here refers to human-related incidents (see Barling et al., 2002), although the terminology has been used in other contexts (e.g., marine vessel accidents) in past research (e.g., Talley, 1995).

1.1. Safety implications of supervisor-subordinate relationships

Supervisor-subordinate relations have become an area of interest to organizational researchers for a variety of reasons. From an overall competitiveness standpoint, supervisors can play an important role in organizations by influencing their subordinates' attitudes, behaviors, and overall job-related performance (Andersson, Shivarajan, & Blau, 2005; Harris, Kacmar, & Witt, 2005; Zohar & Luria, 2003). From a safety perspective, a supervisor's leadership style provides an opportunity for enhancing workplace safety that goes beyond ergonomic design of facilities or implementation of physical changes to meet regulatory standards (Barling et al., 2002) in a manufacturing environment. Employees' safety performance should improve when they have a clear understanding of safe operating procedures and the consequences of unsafe behaviors and when their safety behaviors are supported by their supervisors (Hofmann & Morgeson, 1999). One way to examine the influence of the supervisor on subordinates is to investigate exchange relations between the supervisor and the member (i.e., the subordinate).

As shown in Fig. 1, we propose to investigate the relationships between two supervisor-related variables and subordinates' safety-related outcomes. Specifically, we will explore the roles of two factors, leader-member exchange (LMX) and safety communication between a leader and a subordinate, in enhancing subordinates' safety-related behaviors. The following sections will describe relevant LMX theory and safety-related communication.

1.2. Leader-member exchange theory

Leader-member exchange (LMX) refers to the quality of the exchange relationship that exists between employees and their superiors (Graen & Uhl-Bien, 1995). LMX has become an important leadership concept for management scientists in large part because of its ability to predict desired outcomes at multiple levels (e.g., individual employee level up to organizational; Gerstner & Day, 1997). Unlike other leadership theories seeking to explain leadership based on characteristics of the leader or of the situation, LMX focuses on the dyadic exchange relations between the leader and the follower as the level of analysis (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995). In this study we will measure one half of the dyad by simply asking subordinates about their LMX; not by asking both supervisor and subordinate for perceptions of each other.

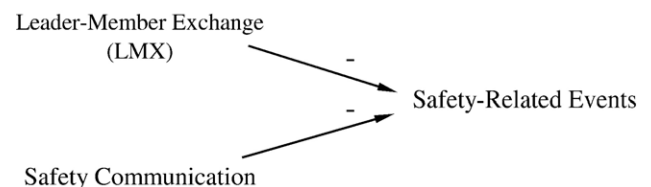


Fig. 1. Proposed relationships with organizational factors and safety-related events.

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