



Review

Health and safety management systems through a multilevel and strategic management perspective: Theoretical and empirical considerations



Patrick L. Yorio*, Dana R. Willmer, Susan M. Moore

U.S. CDC-NIOSH, Office of Mine Safety and Health Research, Pittsburgh, PA, USA

ARTICLE INFO

Article history:

Received 13 March 2014
 Received in revised form 14 July 2014
 Accepted 13 September 2014
 Available online 3 October 2014

Keywords:

Multilevel theory and methods
 Strategic management
 Health and safety management systems
 Safety climate
 Safety culture

ABSTRACT

Multilevel and strategic management theory and research methods are presented and applied to current issues in occupational health and safety (H&S), the primary goal being to better understand health and safety management systems (HSMS) from a theoretical and empirical perspective. Through these perspectives, a strategic HSMS may be understood as a construct that exists objectively at the strategic level of the organization—its objective content often distinct from the implemented practices and procedures within a workgroup and from worker perceptions and interpretations of its content. These nuances highlight the types of biases that can arise when choosing a level of measurement to assess the HSMS and techniques that can be used to minimize measurement error and increase the validity of inferences made. These nuances also illuminate the contingencies important for the success of a strategic organizational HSMS. The contingencies are discussed from a theoretical perspective and presented in a conceptual HSMS model.

Published by Elsevier Ltd.

Contents

1. Introduction	221
2. Health and safety management systems in practice, theory, and research	222
2.1. HSMS in practice	222
2.2. HSMS theory and research	222
2.3. HSMS through a multilevel perspective	223
2.4. Assessing the content of a strategic HSMS: biases and techniques to increase measurement validity	224
3. A conceptual model	224
3.1. Workgroup leadership	225
3.2. Organizational values	225
3.3. Worker perceptions and interpretations of an HSMS	226
4. Conclusion and suggestions for future research	226
Acknowledgements	227
References	227

1. Introduction

As defined by available system standards (e.g. ANSI/AIHA Z-10; OHSAS 18001; Responsible Care; ILO-OSH-2001), a health and

safety management system (HSMS) is a set of institutionalized, interrelated, and interacting strategic H&S management practices designed to establish and achieve occupational safety and health goals and objectives. Because of the potential importance of an HSMS in occupational injury and illnesses prevention, it has emerged as an important research topic in the H&S academic community. To date, however, empirical measurement of an organizational HSMS for the purpose of understanding its effect

* Corresponding author at: CDC-NIOSH, Office of Mine Safety and Health Research, 626 Cochran Mill Road, PO Box 18070, Pittsburgh, PA 15236, USA.

E-mail address: pyorio@cdc.gov (P.L. Yorio).

on other important H&S phenomena in research studies has taken on different forms. Robson et al. (2007) conducted a systematic review of the empirical literature that explored the effectiveness of an HSMS and found that common limitations across studies were a lack of consistency in HSMS measurement techniques and an underreporting of the potential biases that the technique introduced.

These limitations are problematic from both a research and policy perspective. First, the distinct HSMS measurement approaches used within the H&S academic literature imply very different operational definitions of the construct. Importantly, valid inferences about the effect of an HSMS on specific outcomes (e.g., injuries and illnesses) require that the content of the HSMS in place be accurately measured. Secondly, given that occupational standard setting bodies throughout the world (e.g., the United States, ILO, Canada, Australia, and the European Union) have made and continue to make efforts toward mandatory HSMS-related standards, valid empirical research of HSMS effectiveness is increasingly important.

In what follows, multilevel and strategic management theories are used to distinguish between a strategic HSMS (a top-down construct that exists at the level of the organization and is a key part of its structure), HSMS implementation (the behaviorally executed policies and practices that often exist within organizational workgroups), and worker perceptions and interpretations of the HSMS. Through these basic lines of delineation, two important developments related to HSMS theory and research are illuminated. First, the types of biases, measurement error, and construct validation issues relevant to empirical assessment of an HSMS for use in research models becomes apparent. Second, contingencies important to the success of a strategically designed organizational HSMS can be theoretically developed, providing insight into important research questions that may be answered in future studies.

2. Health and safety management systems in practice, theory, and research

2.1. HSMS in practice

As noted above, an HSMS can be broadly characterized as a set of institutionalized interrelated and interacting strategic elements designed to establish and achieve occupational H&S goals and objectives. Makin and Winder (2008) defined a comprehensive HSMS as a system that is comprised of purposefully distinct but complementary H&S management practices. These ideas can be briefly illustrated through the ANSI/AIHA Z-10 HSMS consensus standard. ANSI/AIHA Z-10 advocates the following elements: top-management leadership and employee participation; planning; implementation and operation; evaluation and corrective action; and management review. Each of these elements has a distinct function within the HSMS but all have the same objective: to prevent occupational injuries and illnesses. Numerous policies, practices, and procedures can be listed under each element and each of the practices listed under an element fundamentally aligns with the element's function. For example, the top-management leadership and employee participation element can include: a written H&S policy that articulates H&S management commitment, employee participation in risk management activities, and compliance with applicable laws and regulations; appropriate resource allocation; defining H&S roles and responsibilities and an accompanying accountability system; design of employee feedback systems; and integrating aspects of employee involvement into various practices that make up the HSMS (e.g., accident investigation, H&S inspections and audits, etc.).

From a practical perspective, the decision as to which elements to include within an HSMS (and practices aligned under those elements) can be challenging. As an HSMS is a strategically designed, context-specific organizational asset, there are various activities that can be administered and a variety of ways that the activities can be designed. However, consistent with the arguments of Makin and Winder (2008), the building blocks of an effective HSMS should include practices related to creating a 'safe place' (e.g., access/egress, electrical, noise, hazardous substances, preventative and predictive maintenance, housekeeping, etc.), sustaining 'safe people' (e.g., H&S training, psychosocial risk management, health surveillance, performance appraisals, etc.), and continuous improvement (e.g., recordkeeping, management review, etc.).

2.2. HSMS theory and research

Within the H&S academic literature, HSMS have been traditionally conceptualized to exist as an artifact of or manifestation of an organization's safety culture (Edwards et al., 2013; Cooper, 2000; Guldenmund, 2007; Mearns and Flin, 1999). Thus, current HSMS research work has been shaped by overarching organizational and safety culture themes. Although, efforts to clarify the distinct space between them have been made (Edwards et al., 2013; Guldenmund, 2010; Zohar, 2008), the theoretical development of HSMS as a safety culture artifact has seemingly created some confusion within the safety research community as to where to draw the methodological lines between these constructs (Reiman and Rollenhagen, 2013). It is suspected that this confusion has led, in part, to a loose operational definition and measurement of an organizational HSMS in H&S empirical studies.

Table 1 suggests that in H&S empirical investigations, two general approaches are commonly used to assess an HSMS in relation to important organizational and individual level outcomes.

The first approach (Worker Level Measurement) entails asking individual workers to provide perceptions of the elements and/or practices used within the HSMS. These gathered observations can then be aggregated upward to the group level or, as is common in the existing research, used at the individual level in research models. The second approach (Manager Level Measurement) entails asking managers and/or supervisors to supply information on the organization's HSMS and using this data to derive estimates of its effect on important H&S outcomes. As reflected in Table 1, the first approach suggests that an HSMS is operationally a bottom-up, worker-derived perceptual construct. Conversely, the second measurement approach suggests that an HSMS is a top-down, management derived, structural construct.

As an HSMS is often regarded as a component of safety culture, and safety culture is considered an emergent construct by many H&S theorists (Guldenmund, 2007, 2010; Christian et al., 2009), the bottom-up measurement approach has some appeal. There are, however, potential limitations when the resulting empirical inferences are reported to correspond to the practices and policies as formally specified by top organizational managers. First, because the responsibility to develop, implement, monitor and improve the HSMS policies and practices is fundamentally within the sphere of management, the bottom-up approach may not accurately reflect their actual development and function within an organization. Second, worker perceptions and interpretations of an HSMS may not accurately reflect the codified practices developed through strategic management processes. Perceptions of HSMS are limited, not only by bounded rationality and important cognitive, social, and psychological biases (Podsakoff et al., 2003; Hoyt, 2000), they are often filtered through various contingencies involved with the sometimes imperfect implementation of the HSMS. Because of the importance of workgroup supervisors and an organization's internal value systems in shaping the perceptions

Download English Version:

<https://daneshyari.com/en/article/589065>

Download Persian Version:

<https://daneshyari.com/article/589065>

[Daneshyari.com](https://daneshyari.com)