



Spanish validation of the mindful organizing scale: A questionnaire for the assessment of collective mindfulness

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ARTICLE INFO

Keywords:

Mindful organizing
Collective mindfulness
Scale validation
Safety culture
Team safety climate
Team learning

ABSTRACT

Introduction: Mindful organizing (also known as collective mindfulness) is a team level construct that is said to underpin the principles of high-reliability organizations (HROs), as it has shown to lead to almost error-free performance. While mindful organizing research has proliferated in recent years, studies on how to measure mindful organizing are scarce. Vogus and Sutcliffe (2007) originally validated a nine-item “Mindful Organizing Scale” but few subsequent validation studies of this scale exist. The present study aimed to validate a Spanish version of the Mindful Organizing Scale.

Method: The sample included 47 teams (comprising of a total of 573 workers with an average team size of 12.19) from a Spanish nuclear power plant. A confirmatory factor analysis (CFA), reliability analysis, and an analysis of aggregation indices were carried out. A correlation analysis and CFA were used to further validate the scale in terms of its distinctiveness from, and relationship with, other team-related variables such as safety culture, team safety climate, and team learning. Finally, evidence of criterion-related validity was collected by testing the incremental validity of the mindful organizing scale in the association with various workplace safety outcomes (safety compliance and safety participation).

Results: The results confirmed a unidimensional structure of the scale and indicated satisfactory internal consistency. Aggregation of the scores to the team level was justified while significant positive correlations between mindful organizing and other team-related variables (safety culture, team safety climate, team learning) were found. Moreover, mindful organizing showed distinctiveness from safety culture, team safety climate and team learning. Finally, incremental validity of the scale was supported, as it shows to be associated with safety compliance and safety participation above and beyond other related constructs.

Conclusions: The Spanish version of the Mindful Organizing Scale has shown to be a valid and reliable scale that can be used to measure mindful organizing.

Contributions: The validation of the unidimensional Spanish version of Vogus and Sutcliffe’s (2007) Mindful Organizing Scale provides researchers and practitioners with a reliable and valid tool to use in Spanish speaking organizations to measure mindful organizing, which has been shown to result in more reliable performance. Theoretically, this study offers four contributions. Firstly, it validates a scale that operationalizes the ‘mindful organizing’ construct in a traditional high-reliability organization (nuclear power plant) which has never been done before. Secondly, it offers evidence that a mindful organizing scale can be validated in a new cultural context and language (Spanish) to any of the previous studies done before it. Thirdly, it adds to our understanding of mindful organizing’s nomological network by distinguishing it from other team and safety-related variables. Lastly, it builds on current research showing sound psychometric properties of a one-dimensional, quantitative measure of mindful organizing.

1. Introduction

Mindful organizing (also known as collective mindfulness) is the collective capability to discern discriminatory detail about emerging

issues and act swiftly in response to such details (Vogus and Sutcliffe, 2012; Weick and Sutcliffe, 2006; Weick et al., 1999). The concept first came into fruition when researchers such as Weick et al. (1999) started investigating social processes that allow high-reliability organizations

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<https://doi.org/10.1016/j.aap.2019.105351>

Received 14 October 2018; Received in revised form 5 August 2019; Accepted 25 October 2019

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(hereinafter HROs) such as air traffic control centres and nuclear power plants to operate almost flawlessly when the potential for catastrophe is so high. These researchers discovered that in these organizations, employees engage in mindful organizing allowing them to anticipate, detect, and recover from, errors. In such dynamic and intense environments, this capability could be the difference between life and death. Research in this area has thrived as mindful organizing has shown to result in fewer accidents and safer performance, especially in the health care sector (Sutcliffe et al., 2016). Teams engaging in mindful organizing were found to have fewer occupational safety failures and errors in studies done with nurses (Ausserhofer et al., 2013; Dierynck et al., 2017; Vogus and Sutcliffe, 2007). Other studies also show mindful organizing leads to better responses to adversity in firefighters (Bigley and Roberts, 2001) and higher reliability in air traffic controllers (Weick et al., 1999).

Research on mindful organizing is still in its infancy and the majority of the studies done to try to understand it have been qualitative in nature. More research needs to be done for mindful organizing to be empirically and theoretically considered a distinct construct from other team and safety-related variables (Sutcliffe et al., 2016). At the heart of gathering empirical evidence to further the case of studying and fostering mindful organizing in modern organizations is the validation of measures for its assessment. There are a few articles validating mindful organizing measures, but many of these articles do not show sufficient evidence of sound psychometric properties of their scales (Sutcliffe et al., 2016). Furthermore, validated scales to measure mindful organizing are offered in English (Vogus and Sutcliffe, 2007), French, German and Italian (Ausserhofer et al., 2013), but no Spanish validated version of the scale exists. This not only means all Spanish speaking organizations in the 20 countries where it is an official language do not have a validated mindful organizing scale to use for empirical research, but it also leaves the question as to whether mindful organizing is manifested in the same way in a Spanish cultural context as it is in other contexts where it has been studied (such as the United States). In addition, although the theoretical paradigm of mindful organizing is based on qualitative research in traditional HROs, of the validation studies that do exist, most research is not conducted in traditional HROs (e.g. Ausserhofer et al., 2013; Vogus and Sutcliffe, 2007). Validating a measure of mindful organizing in a traditional HRO setting will be valuable as it is within these high-reliability contexts that the construct was discovered. Therefore, within traditional HROs, there is likely to be a truer, more accurate embodiment of this collective capability than in non-traditional HRO contexts.

The main purpose of the present study is to translate Vogus and Sutcliffe's (2007) "Safety Organizing Scale" (later referred to as the "Mindful Organizing Scale") to Spanish and to validate this new version of the scale. We attempt to provide evidence of the validity and reliability of the Spanish version of the scale by testing its unidimensional factor structure and checking the internal consistency. In addition, we attempt to justify the aggregation of individual scores to group scores by testing whether there was group consensus among team member's mindful organizing scores. We also examine the relationships between team's mindful organizing scores and their safety culture, team safety climate and team learning scores to gain further evidence of convergent validity. Additionally, we gather evidence of discriminant validity by checking the distinctiveness of individual-level mindful organizing with other team level constructs considered important for safety (safety culture, team safety climate and team learning scales). Finally, we test for evidence of criterion-related validity for the Spanish version of the mindful organizing scale, by testing the incremental validity of the scale in the association with workplace safety variables (safety compliance and safety participation).

1.1. Mindful organizing

In line with the positive psychology movement, a body of safety

researchers have begun to shift the focus of their research away from accidents and mistakes to rather analysing the billions of cases where safe performance is consistently achieved (Dekker, 2015; Hollnagel, 2014; Rochlin et al., 1987; Weick and Roberts, 1993). Hollnagel (2014) argues that trying to uncover safety lessons through only analysing accidents and mistakes is not always useful as these situations represent an absence of safety. He argues that the high-risk environments where safe performance is desired are usually complex with many different variables and unexpected events at play. This results in acceptable and unacceptable outcomes often stemming from the same practice or behaviour. Hollnagel (2014) believes more models, ideas and frameworks are needed to understand the many cases where safety is present, and nothing goes wrong despite high-risks as these are the cases where we can extrapolate lessons about how to achieve consistently safe performance. A useful source of insight into consistently safe performance is HROs as these organizations manage to operate almost error-free when there is constant potential for catastrophe (Rochlin et al., 1987).

As HRO research was initially starting to accelerate, Weick and Roberts (1993) wanted to uncover which team characteristics and capabilities existed in HROs that enabled these organizations to respond so effectively to unexpected events and maintain unwavering performance when the risks for error were so high. These authors conducted extensive field research in an aircraft carrier. Here, they discovered that the teams in this setting organized themselves in such a way that they were able to engage in a pattern of highly attentive interrelations of actions among each other which allowed them to better understand the adversity they faced and respond more effectively to unexpected events. They called this capability collective mindfulness (later called mindful organizing) following Langer (1989)'s conceptualisation of individual mindfulness which emphasizes that the new perspective or action that arises from a mindful state (or act of noticing) is just as important as achieving that mindful state. The collective form of mindfulness seen in HROs involves noticing weak signals, then critically analysing and reframing these signals leading to an expanded understanding of what is noticed. This greater understanding of what is noticed is closely linked to a wider repertoire of action capabilities which is a defining feature of what makes HROs effective.

Later, Weick et al. (1999) analyzed various case studies of HROs with the aim of creating a clear specification of the behaviours and processes that constituted this team level capability to anticipate and recover from, unexpected events. They found that there were five interrelated processes that underlie mindful organizing, namely preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience and deference to expertise (Weick et al., 1999). It is through the first three processes that rich discriminatory detail about current operations is created (a capability to anticipate unexpected and potentially risky events) and through the last two processes that unexpected events are contained through a collective ability to pool resources in a flexible manner (a capability for resilience) (Vogus, 2011). These five processes are seen in the actions and interactions of team members on the front line. It is a fragile process that is constantly enacted and re-enacted by those on the front line.

Preoccupation with failure means teams are constantly paying attention to, and worrying about, any small error that has occurred or may occur (Weick et al., 1999). They treat these potential or actual errors as possible indicators of bigger problems (LaPorte and Consolini, 1991). This manifests in teams consistently searching for any anomalies that occur during operations as well as routinely checking weak, mixed or routine signals as evidence of potential failures (Weick and Sutcliffe, 2015). This preoccupation with failure also means that teams are suspicious during quiet periods where there are no unexpected events as this may indicate that they have missed something (Weick and Sutcliffe, 2015). Preoccupation with failure also means that teams treat near misses as failures and lessons to be learned rather than a success (Weick and Sutcliffe, 2015).

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