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Employee Safety Perception Surveys: Key Steps in the Development and Analysis of Results

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Introduction

The purpose of an employee safety perception survey is to measure the perceptions that employees, at all levels of the organization, have concerning key factors of an organization's safety management system. These surveys often provide additional vital information that should help management to make improvements to the organization's safety process. At a minimum, the results can suggest to management "the emperor has no clothes."

The fundamental management process is to allocate available resources to a productive end. From a practical perspective, management needs to identify how best to allocate resources to ensure the lowest possible frequency and severity of injuries to employees. Research suggests that it is the safety management system that has the most significant impact on injury rates (Carder, 2003; O'Toole, 2002). Efforts within organizations that include key elements from OSHA's Voluntary Protection Program (VPP) have demonstrated lower injury rates and often times higher productivity.

Zohar (1980, 2005) used employee questionnaires to identify the relative importance of specific safety factors in several industrial settings in Israel. Bailey (1997) used the Minnesota Safety Perception survey to identify factors that positively contributed to injury reduction in the railroad industry as well as in several other industries. In his follow-up study, the results showed that, at facilities with low injury rates, the employees' perceptions of critical safety factors were highly positive. In contrast, at facilities with relatively high injury rates, the employees' perceptions of those same critical safety factors were low.

Reasons to Use Employee Perception Surveys

Perceptions, like attitudes, have been recognized as an important factor in safety. Studies have suggested that when measured, perceptions can predict the likelihood of certain behaviors (Ivers, 2009). The importance of this factor is especially critical where employees have little or no direct supervision. The employee is making important choices about safety rules, practices and procedures. If perceptions about safety are low, there is a greater chance that the employee may take a shortcut or engage in some other at-risk behavior that leads to an injury.

Others have suggested that employees' safety-related perceptions are predictive of the organizations' safety results (Carder, 2003; O'Toole, 2007; Seo, 2005). Where the employees' perceptions of the organizations safety climate are low, the organization's incidence of injury tends to be higher than those organizations where employees' safety perceptions are high.

Currently, most organizations utilize some form of "trailing indicator," such as injury incident rates, as a measure of the success or failure of their safety processes and programs. The use of safety perception surveys is considered by some as a leading or predictive indicator of the success or failure of an organizations safety process and programs (Carder, 2003). Others look to the safety perception survey as a tool to help the organization keep its safety and health efforts in a continuous improvement mode (O'Toole, 2002).

Advantages and Disadvantages of "Off-the-Shelf" Employee Perception Surveys

Once an organization decides to go forward with the use of an employee safety perception survey, it is faced with several challenges. The first challenge is to decide whether to use an "off-the-shelf" instrument or develop the survey locally. Each approach has strengths and weaknesses inherent with the choice.

Off-the-shelf surveys should have been through a formal development process that would provide the end-user several important pieces of information. The first issue is the method used to ensure that the survey instrument is valid; that is, that the survey actually measures what it is intended to measure. If the survey is not validated, then the results are not very useful and will likely result in wasted resources addressing gaps identified by the survey.

The second issue is of the size of the sample to be used. In smaller plants, the entire workforce may be appropriate; in larger plants, a sampling procedure must be developed to ensure adequate representation of all important groups that are surveyed. Importantly, enough responses must be received in order to have sufficient statistical power to see if any differences (either over time or as a result of an intervention) are actually detectable.

The third issue is that of reliability or the assurance of repeatable results with the same instrument. If the survey will not produce stable results, which will also result in resources being spent on actions, the survey will likely not yield the desired results. With a properly developed and tested survey instrument, the end-user will have a high degree of confidence in the information provided by the results of the survey. Use of a pretest, to gauge whether or not the questions are clear and the intended meaning of the survey and its questions, is a useful step to reduce the likelihood of discovering validity problems later on.

One major drawback of this assurance is the cost of the survey. The process of developing and testing a survey instrument to ensure that it is both valid and reliable is time-consuming. To use an off-the-shelf survey, the end users pay for the value of knowing that they are using a valid and reliable instrument. However, this advantage must be weighed against the disadvantage of not being able to customize the survey instrument to one's particular interests.

Advantages and Disadvantages of "Home-Grown" Employee Perception Surveys

The second choice in this decisionmaking process is to develop a "home-grown" employee perception survey. There are several challenges facing the organization that chooses this path, the first of which is to identify the constructs or factors the survey is to measure. Although the survey is intended to measure employees' perception of safety, this broad construct is better measured, identifying several more specific constructs such as: employees' perception of

management's commitment to the safety process; employees' perceptions of their fellow employees' commitment to the safety process; the employees' perceptions of the effectiveness of safety-related training; employees' perceptions of their involvement in the organization's safety processes, etc.

Once the constructs have been identified, the organization has the challenge of developing questions that measure those constructs in a meaningful way. The wording of questions has to be able to elicit a meaningful response without suggesting or guiding the participant to a "correct" answer, while still allowing for a range of responses to ensure enough variability among responses to be able to detect any significant effects. Lastly, the organization needs to possess personnel with some statistical knowledge in order to ensure the survey is measuring the intended constructs in a way likely to generate meaningful and useful results. A common problem among first-time survey developers is that they develop a set of questions, but don't simultaneously keep in mind the analysis strategy that will be required to make use of the data, or of how the results of the analysis will assist key decisionmakers in deciding what changes (if any) are needed to the safety programs or processes. Failure to keep such issues in mind can lead to a significant amount of wasted time and effort on an instrument with little redeeming value.

One of the advantages of the locally or internally developed survey is that there is less of an up-front financial cost and the ability to customize the level and tone of the questions to match the target audience. As with the off- the-shelf survey, there are issues of validity and reliability that need to be reviewed to ensure that the results provide the company meaningful information and not waste valuable resources. In addition, developing quality survey instruments is often an iterative process, which may require a far longer time horizon than most safety professionals are willing to devote to it.

Use of Survey Results

In either case, once the survey has been administered, the organization needs to decide how it will use the results to improve the current safety processes and programs. One of the keys to the use of any perception survey of this nature is not to focus too hard on the degree of positive perceptions, but rather to keep the focus on how the employees developed the perception of concern.

Based on the authors' past experience, there is a tendency for management teams to become preoccupied with why all employees or a specific sub-group may have a particularly low perception of a given measured factor.

Perceptions are very similar to attitudes and are difficult to change when attacked head on. It is for this reason that attention within the analysis of the data should direct efforts toward identification of how employees may have a less-than-positive perception of a given factor. From there, it may be possible to create a remedy to improve the perception of the low-scoring factor.

Poor Supervisory Practices

A second concern is a fear that the survey will point out poor practices of supervisors or managers. Although issues of management style or approach may drive a particular set of perceptions, such knowledge provides more senior managers the opportunity to provide resources in the form of training, education and mentoring to alter the behaviors or practices of concern.

Confidentiality Issues

As with all survey research, the issues of confidentiality are important and must be addressed. Since some of the requested information may also imply either bad practices or illegal behavior on the part of employees, special care must be taken to ensure that participants' responses will not result in termination or sanctions, lest they provide less-than-accurate responses due to fear of those repercussions. Great care must be taken in ensuring the respondents' confidentiality, and this often begins with a well-crafted memo or cover letter outlining the value of employees' input in order to improve safety procedures or processes, the need for honest responses (as opposed to those which sound like the "right" answers), and a strong assurance of the confidentiality of all responses.

Employee Feedback

A key aspect of the use of such surveys is providing feedback to employees. If employees do not receive a general summary of the results, or of to what end the results of the survey will be put, they may be less inclined to take the time to fill out such surveys in the future, and also be suspicious of the purpose of the survey. Good feedback provides employees with a general, non-technical explanation of the findings, a summary of any changes to be implemented as a result of the findings, and a chance to express any concerns or questions about the survey process or the results. Providing employees a chance to have their views heard (and reflected back to them) should help to improve employee buy-in to the safety perception survey process.

Management amd Employee Support of Safety Process

The safety profession and regulators have more recently recognized there are several factors that increase the success of an organization's safety process. One of those is management's visible support of the process (Bailey, 1997). By using a tool such as an employee safety perception survey and reacting to the results in a visible and positive manner, sends a powerful message to the workforce.

In addition, it has been suggested (Carder, 2003) that the more employees are meaningfully engaged in the safety and health process, the more successful that process is, especially in relation to the number and severity of injuries. Using an employee safety perception survey, the organization is tapping its best resource for hazard identification. In addition, when the organization addresses these issues in a positive manner, it is attending to issues of immediate importance and relevance to the employees at risk.

Re-evaluation of the Process

A final aspect of the survey cycle is to re-evaluate the entire process after it has been completed. What was learned, and what is still unknown? What improvements can be made to the process to make it more effective or efficient? Keeping careful notes of the results of this re-evaluation can be useful, especially if there is a significant time lag between the end of one survey cycle and the start of the next one.

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