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THE RELATIONSHIP BETWEEN PARTICIPATIVE MANAGEMENT AND SAFETY CULTURE: A CASE OF THE SOUTH AFRICAN FORESTRY INDUSTRY

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Abstract: This research article investigates the influence of participative management on the safety culture among contract workers within South Africa's forestry industry. The study aims to address the necessity for a more engaged safety management approach within high-risk workplaces, with a specific focus on South Africa. This focus is essential due to concerning injury and fatality rates, notably in the mining and construction sectors. However, the forestry industry has demonstrated comparatively superior safety performance, as evident from the study outcomes. The research employs a mixed-method survey technique, combining self-administered surveys and structured interviews to gather data. The sample comprises both male and female forestry workers from the Mpumalanga Province in South Africa, who actively participate in operational activities, especially those related to Occupational Health and Safety (OHS) within the forestry sector. The data extracted from the surveys is subjected to analysis using Pearson's product-moment correlation coefficient. This statistical approach helps establish the relationship between various dimensions of participative management and safety culture. The results of the study unveil a substantial positive correlation connecting participative management and safety culture. This finding substantiates the theoretical premise that a more engaged managerial approach towards safety positively influences the safety culture of forestry workers.

Key words: Participative management; Safety management; Employee involvement; Safety culture

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Introduction

The incidence where crises, mishaps and accidents happen is a sufficient indication that organisations still need to improve their abilities to manage safety through a proactive and systematic approach (Kontogiannis et al., 2017). According to the Department of Mineral Resources (DMR), statistics from the mining industry showed that 73 fatalities were reported in 2016, 90 in 2017 and 81 in 2018; in addition, the total injuries for the mining industry decreased from 2 669 in 2017 to 2

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350 injuries in 2018 (DMR, 2020). Although there is a visible decline in the total industries, there is still a considerable number of fatalities each year. In their 2022 annual sustainability report, South African Pulp and Paper Industries (SAPPI) had no fatalities for the year 2021 as well as the South African Forestry Company Limited (SAFCOL) (SAFCOL, 2021; Sappi, 2021). Mondi South Africa indicated that they had one fatality for the year of 2020 (Mondi Group, 2020). The statistics for the forestry industry are impressive compared to other industries in South Africa, and it is worthwhile to investigate why this might be the case, as little research regarding safety and the management thereof is present for the forestry industry of South Africa. Evidence suggest that in the forestry industry, workforce involvement and employee engagement may decrease unsafe work behavior, fatal events and accidents and injuries (Korneeva et al., 2022). Workforce involvement has also been linked to organizational performance in other studies (Guthrie, 2001; Truss et al., 2013). O'Dea and Flin (2001) identified workforce involvement as an outstanding safety issue in offshore environments and that managers are not getting the workforce to participate in safety activities. Raines (2011) emphasises the fact that if changes are made that have an influence on safety without employees' input or participation, it may be difficult to improve safety performance in such an organisation over time. Brijlall (2015) indicated that, in South Africa, there is a lack of employee participation in two areas; firstly, employees are not involved at all levels of decision-making in terms of work processes and activities; and secondly, managers do not include, encourage, or support employee involvement in the decision-making process. Considering all the above, there is a definite need for a more participative approach to the management of safety in South African industries; however, there is no clarity on the current use of this approach and its effect on safety management in South Africa, particularly in the forestry industry. Therefore, the aim of this article is to determine the relationship between participative management and safety culture in the forestry industry of South Africa.

Literature Review

Early assumptions of the *participative management* theory were that employees prefer to have active participation in decision-making matters that directly impact their work (Hines, 1974). As the participative management theory developed, it was later viewed as a management system where employees are involved and participate in decision-making, solving problems, setting goals and change processes within the organisation (Sashkin, 1984). Arguably the best method to measure employee involvement in terms of participative management is by using Likert's management systems as proposed in his book "*The human organisation*" (Likert, 1967). Likert identified several variables to measure management systems in organisations. The independent variables that have the most relevance to Likert's theory from a safety management perspective include leadership, motivation, communication, decision-making, control and goal setting (Kim et al., 2019).

Empirical data shows the link between safety management and *participative leadership* (Martínez-Córcoles and Stephanou, 2017). Participative leadership entails inspiring followers beyond expectations and aligning with organisational vision, fostering trust and employee involvement (Eliophotou-Menon and Ioannou, 2016; Veliu et al., 2017). This aligns with building shared responsibility and enhancing safety in forestry, potentially fostering a positive safety culture (Ree and Wiig, 2020).

Motivation is a key role on safety management that needs to be performed by managers in order to promote employee performance, and it is a difficult task to perform by managers as employees can easily lose their drive to perform if not motivated correctly (Daft et al., 2020). In the scope of this article, to improve employee safety culture, effective motivation in terms of safety management needs to be approached from an inclusive and participative perspective, which will influence how employees should be motivated (Gao et al., 2019). The ideal scenario from a safety management perspective that will also facilitate employee involvement would be where employees are informed and updated with information that relates to matters of safety, receive regular training and opportunities to build their knowledge on safety, have the authority to make important decisions that influence their safe work procedures, and be rewarded for outstanding safety performance statistics (Bian et al., 2019).

Communication is the exchange of knowledge, thoughts and opinions between communicator and recipient (Van Loggerenberg, 2015b). From a managerial perspective, communication is defined as the downward, horizontal, or upward exchange of information and transmission of meaning through informal or formal channels that enable managers to achieve their goals (Motoi, 2017). Effective communication in health and safety plays an integral part in the relationships between employers and employees and guides the attitude and behaviours of all stakeholders in an organisation on all matters concerned with safety (Van Loggerenberg, 2015b). Based on the above, the ideal communications scenario from a participative safety management perspective would be a situation where an open and participative climate is present that encourages all levels of the organisation to have a shared sense of responsibility and trust between managers and their subordinates.

Participation in *decision-making* is an important aspect of a good safety culture. Managerial decision-making can be defined as a mindful selection from a set of alternatives to obtain a desired goal or result (Daft et al., 2020). It often involves routine decisions or non-routine decisions that depend on the degree of certainty, risk or uncertainty involved given the scenario confronted with at a particular point in time (Daniel and Daniel, 2018). This article focuses on the degree of control or authority exercised by a manager, and the extent of participation of subordinates in the decision-making process when it comes to improving safety culture. As within the framework of this article, the ideal decision-making process from a safety management perspective would be a scenario where employees are involved,

included and consulted in safety related matters before decisions are made by management, and where their inputs are valued and considered.

Daft and Marcic (2017) define organisational *control* as the process of regulating the activities of the organisation and aligning them with the established plans, targets, and standards of performance with the organisation. In the framework of this study the focus is on the level of employee participation and involvement in the approach adopted by management when applying control measures in safety management. As such, workers are empowered by management to assist in the development of safety control measures, contribute to the identification of safety issues and propose solutions, and management also ensures that these suggestions are shared with the rest of the workforce for further input (Story and Kight, 2019). Employees should also have a level of autonomy that allows them to apply self-discipline and self-control without being actively supervised on a continuous basis which is reinforced through safety training programmes (Jang et al., 2017).

Goal setting can be defined as the process of identifying what needs to be achieved and developing plans to do so (Wariso, 2017). Participative goal setting involves continuous involvement and participation of employees in each phase of the goal setting process (Daft et al., 2020). From a safety management perspective at an operational level, employees should work with management to develop and establish goals by following the SMART criteria as a guideline. This will lead employees to be more motivated to achieve their individual safety goals and give them a sense of independence and ownership in the process of achieving them, and arguably lead to better safety participation, standards and performance (Van Loggerenberg, 2015a).

Safety culture can be viewed as how exposed employees behave when they are not being supervised (Peightal and Singerhouse, 2020). The temporal state measure of safety culture is safety climate, which will give an indication of the current perceived state of safety at a particular time or place (Kalteh et al., 2021). Safety climate can therefore be seen as a temporal phenomenon which gives a "snapshot" of the perception of an organisation's safety culture at a specific point in time (Xu et al., 2022). The first person considered to actively measure safety climate was Zohar (1980). Other studies reviewed in the literature include but are not limited to the following: Bian et al. (2019); Brown and Holmes (1986); ; Coyle et al. (1995); Hale (2000). The factors used for each study differ from one study to another, which makes it difficult to choose one researcher's view on what a safety climate should entail above another. In the context of this study, it was decided to focus on a study done by Vinodkumar and Bhasi (2009) which also focused mostly on lower level workers. After a review of their study and the results, the following factors were of significant value for the purpose of this study: management commitment and actions towards safety, workers' knowledge and compliance to safety, workers' attitude towards safety, and workers' participation and commitment towards safety. A discussion of each of these factors follows.

Management commitment is a process of interaction between management and employees through the extension of management's concern of employee welfare to

achieve organisational safety goals (Gao et al., 2019). Management can show their commitment through the following actions towards safety: participation, support, visibility, demonstrating leadership, by having a positive attitude towards safety, the manner in which they control safety activities, through their values and beliefs regarding safety, and lastly their acknowledgement of the significance of safety programmes (Ismail et al., 2017).

Knowing how to complete jobs safely is part of *worker safety knowledge* (Kao et al., 2019). Participating in safe activities and upholding safety regulations constitute *safety compliance* (Haas et al., 2019). Workers need to be aware of how to complete tasks safely, utilize equipment correctly, reduce risks, identify hazards, and take safeguards (Basahel, 2021). According to Jaafar et al. (2018), training improves knowledge and behavior modification, which makes managers' roles crucial in providing sufficient information and training for safety awareness and accident prevention.

Safety attitudes can be described as the state of mind towards issues relating to safety which is reflected through the procedures and behaviour of employees (Van Loggerenberg, 2015a). Ultimately, a workers safety attitude will determine their behaviour towards safety, and workers with a positive safety attitude are more likely to pay attention to safety in the workplace and as such will be involved in less accidents (Gharibi et al., 2016). Workers with a good safety attitude feel that it is important to maintain safety at all times, pay more respect to their fellow workers, encourage others to work safely, and promote the commitment to implement safety rules and regulations (Li et al., 2020). Important factors to consider to improving the attitude of workers towards safety include employee involvement, communication, adequate managerial support, and allowing employees to have greater influence on how safety management systems and practices are implemented. (Mohammadi et al., 2018).

Safety participation can be described as the behaviour of employees to actively report safety issues, effectively communicate matters of safety, making suggestions on increasing safety performance, and engaging in self-directed learning towards safety. Safety participation also promotes independent safety behaviour by allowing workers to participate in decision-making (Zhang et al., 2020). Gaining commitment from employees means they understand the need and importance of a good safety culture (Esterhuyzen, 2015). By participating and being committed towards safety workers will follow the correct safety rules and procedures, put in extra effort to improve safety, and willingly carry out tasks that improve workplace safety (Vinodkumar and Bhasi, 2009). It can therefore be argued that a supportive and participative style of safety management can possibly lead to better commitment and participation of workers towards safety. Based on the literature discussion the following hypotheses are proposed for this study:

H1: Participative leadership statistically significantly predicts respondents' safety culture.

H2: Participative motivation statistically significantly predicts respondents' safety culture.
H3: Participative communication statistically significantly predicts respondents' safety culture.
H4: Participative decision-making has a statistically significant effect on respondents' safety culture.
H5: Participative control has a statistically significant effect on respondents' safety culture.
H6: Participative goal setting has a statistically significant effect on respondents' safety culture.

Research Methodology

The beliefs and assumptions followed for this study draws on the epistemological approach of positivism, more specifically, quantitative data was collected and measured to test the relationship between participative management and safety culture. The target population for this study included all workers from the forestry industry in South Africa. For the purpose of this study a non-probability, judgemental, and convenience sampling method was used. The sample that was drawn for this study encompassed of 280 workers from the Mpumalanga Province, male and female, who participate in operational activities (OHS in particular) in the forestry industry. 15 questionnaires had some form of Nonresponse Error and were not used for data analysis. The final response realisation rate for this study was therefore 88%. The sample mostly included male silviculture workers between the ages of 18 and 39 years old and have been working for their respective companies for a duration of 1 to 5 years. Data was collected between November and December in 2021, by arranging with the health and safety risk manager of a specific company to develop a schedule for the questionnaires to be administered. It was decided to administer the questionnaire through a combination of the self-administered survey method and structured interview method, thus incorporating the mixed mode survey method. The reasons for this were: firstly, the respondents work in remote areas and are difficult to reach, and secondly, to overcome the language barrier, an interviewer who could assist with translation, had to be incorporated to explain the questions of the questionnaire to respondents who are not fluent in English. The scale question was calculated using standard deviation and means scores. The Pearson's product moment correlation coefficient was used to look for relationships between the individual dimensions of participative management and safety culture.

Validity and Reliability

To assess the construct validity of the measurement scales, a measure of sample adequacy (MSA) was determined. To calculate the MSA, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were determined by conducting a principal component analysis (PCA). Based on the factor analysis conducted on the measuring instrument for participative management and safety culture, it can be concluded that the measuring instruments contain acceptable elements of validity. With regards to

participative management, all the constructs were suitable for factor analysis, where between 39,84% and 52,53% of the variance could be explained between the different constructs. The general cut-off point for a significant factor loading between 0 and 1 is considered to be 0,50 and higher (Mooi et al., 2017). In this instance all constructs had acceptable factor loadings. With regards to safety culture, all of the constructs were suitable for factor analysis, where between 56, 29% and 65,40% of the variance could be explained between the different constructs. All the constructs measuring safety culture also had significant factor loadings between 0 and 1 (Mooi et al., 2017). The Cronbach's alpha coefficient, it is also recommended to calculate the mean inter-item correlations for a variable with less than seven items, with a value between 0,20 and 0,40 indicating good internal reliability (Parveen et al., 2020). The Cronbach's alpha values for most of the scales used in this study are above 0,60 and the mean inter-item correlations are between 0,2 and 0,5, which correspondents well with an internal consistency that can be considered acceptable within the context of this study. Therefore, the internal consistency reliability of the scales used in this study are confirmed, except for the motivation variable. The four items of motivation were therefore used as individual items.

Research Results

On the grounds of the reliability and validity discussed in the previous section, descriptive statistics were consequently used to summarise the data and provide an adequate representation of the respondents' perceptions regarding the construct's participative management and safety culture of respondents. In this regard, two descriptive statistical techniques were used, namely the mean scores ($\bar{x}$) and standard deviation (SD).

The *participative management of safety* mean scores reflect the average of the scale descriptions of the five-point Likert-scale used in each item to measure the construct participative management. The scale ranged from "1 = strongly disagree" to "5 = strongly agree". Table 1 reports the descriptive statistics with the mean scores ($\bar{x}$) and standard deviations (SD) regarding the different aspects of participative management, followed by a discussion of the results and main findings.

Table 1. Descriptive statistics for participative management

Dimensions of participative management	$\bar{x}$	SD
Leadership	4,21	0,680
Motivation	4,34	0,592
Communication	4,18	0,700
Decision-making	4,07	0,810

Goal setting	4,35	0,560
Control	4,07	0,780

Table 1 reveals that in relation to the leadership dimension, the overall mean score was ($\bar{x}$ = 4,21; SD = 0,680). This is an indication that the respondents mostly view their managers as participative leaders in terms of safety. With regards to the motivation dimension of participative management, which was scored the second highest, the overall mean scores were ($\bar{x}$ = 4,34; SD= 0,592), which proposes that respondents mostly feel motivated regarding safety. In terms of communication, the overall mean score was, ($\bar{x}$ = 4,18; SD= 0,700), which indicates that respondents feels that the communicating safety-related matters was good. With regards to the decision-making dimension of participative management, the overall mean scores were ($\bar{x}$ = 4,07; SD= 0,810), which proposes that respondents mostly feel involved in the decision-making processes regarding safety. Dealing with the goal setting dimension, which was scored the highest, the mean score was $\bar{x}$ = 4,35 with a standard deviation of SD = 0,560. This implies that respondents mostly feel that they were involved in the goal setting process when it comes to establishing safety goals. Lastly pertaining to the control dimension, the mean score was ($\bar{x}$ = 4,07; SD = 0,780), signifying that in terms of managing their performance regarding safety, respondents mostly feel involved during this process.

The mean score and standard deviations for the *safety culture* of respondents are based on a five-point Likert-scale where the scale ranged from "1 = strongly disagree" to "5 = strongly agree". Table 2 reports the descriptive statistics with the mean scores ($\bar{x}$) and standard deviations (SD) regarding the construct safety culture, followed by a discussion of the results and main findings.

Table 2. Descriptive statistics for safety culture

Dimensions of safety culture	$\bar{x}$	SD
Management commitment and actions towards safety	4,17	0,790
Workers' knowledge and compliance to safety	4,56	0,490
Workers' attitude towards safety	4,53	0,530
Workers' participation and commitment towards safety	4,36	0,680

Table 2 reveals that although the Management commitment and actions towards safety dimension was least agreed upon ($\bar{x}$ = 4,17; SD = 0,790), it still reflects those respondents felt mostly positive towards the commitment and actions from their management team towards safety. Pertaining to the dimension Workers' knowledge and compliance to safety the overall mean score was ($\bar{x}$ = 4,56; SD = 0,490). This was the highest score and, gave an indication that respondents felt largely positive

towards their knowledge and compliance with safety in the workplace. Workers' attitude towards safety ($\bar{x}$ = 4,53; SD= 0,530), proposes that respondents largely have a positive attitude towards safety. Lastly with regards to the Workers' participation and commitment towards the safety dimension, the mean score was ($\bar{x}$ = 4,36; SD = 0,680), signifying that respondents mostly feel positive towards their commitment and participation in the safety management process.

Correlation between Factors

To examine the research hypotheses, the correlations between the dimensions of participative management and safety culture were tested to determine the influence of participative management on safety culture. For behavioural sciences, Cohen (1988:79-80) gives the following guidelines for the correlation and their effect sizes, r = 0,10 (small effect), r = 0,30 (medium effect) and r = 0,50 (large effect). The correlation between the dimensions of participative management and safety culture are indicated in Table 3 below:

Table 3. Correlation matrix between the dimensions of participative management and safety culture

Pearson's *r*	Management commitment and actions towards safety		Workers' knowledge and compliance to safety	Workers' attitude towards safety	Workers' participation and commitment towards safety
Leadership	Correlation	0,385**	0,227**	0,325**	0,462**
	Sig. (2-tailed)	0,000	0.000	0,000	0,000
	N	265	265	265	265
Motivation item (Good safety behaviour is rewarded)	Correlation	0,373**	0,106	0,188**	0,049
	Sig. (2-tailed)	0,000	0,085	0,002	0,424
	N	265	265	265	265
Motivation item (Safety goals are established as a group)	Correlation	0,343**	0,296**	0,402**	0,182**
	Sig. (2-tailed)	0,000	0,000	0,000	0,003
	N	265	265	265	265
Motivation item (I have a positive attitude towards safety goals)	Correlation	0,272**	0,191**	0,294**	0,146*
	Sig. (2-tailed)	0,000	0,002	0,000	0.017
	N	265	265	265	265
Motivation item (I take responsibility for	Correlation	0,196**	0,205**	0,340**	0,587**
	Sig. (2-tailed)	0,001	0,001	0,000	0,000

the safety goals established)	N	265	265	265	265
Communication	Correlation	0,459**	0,416**	0,507**	0,497**
	Sig. (2-tailed)	0,000	0.000	0,000	0,000
	N	265	265	265	265
Decision-making	Correlation	0,531**	0,418**	0,421**	0,413**
	Sig. (2-tailed)	0,000	0.000	0,000	0,000
	N	265	265	265	265
Goal setting	Correlation	0,420**	0,488**	0,498**	0,469**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000
	N	265	265	265	265
Control	Correlation	0,625**	0,375**	0,409**	0,420**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000
	N	265	265	265	265

**Correlation is significant on a 1% level (2-tailed),
*Correlation is significant on a 5% level (2-tailed),
when r = 0,10 (small effect), r = 0,30 (medium effect) and r = 0,50 (large effect).

From Table 3 above, the following conclusions can be drawn:
H1: Participative leadership and safety culture: The dimension leadership had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive medium correlation (0,462) with the dimension "Workers' participation and commitment towards safety" had the strongest relationship, which suggests that higher levels of involvement from leadership leads to increased participation and commitment from workers towards safety.
H2: Participative motivation and safety culture: In terms of the correlation between motivation and safety culture, the items measuring motivation were correlated individually with the dimensions of safety culture, as they did not meet the criteria for reliability. The item "Good safety behaviour is rewarded" showed a significant positive medium correlation (0,373) between "Management's commitment and actions towards safety" (p-value < 0,05), as well as a significant positive small correlation (0,188) with the "Workers' attitude towards safety" dimension (p-value < 0,05). This may indicate that being rewarded for good safety behaviour gives employees the sense that their management is committed towards safety, and also slightly improves their attitude toward safety (Saad et al., 2019). The item "Safety goals are established as a group" had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive medium correlation (0,402) with the dimension "Workers' attitude towards safety" had the strongest relationship, which implies that when workers establish safety goals as a

group it intends to improve their attitude towards safety. The item "I have a positive attitude towards safety goals" had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive small correlation (0,294) with the dimension "Workers' attitude towards safety" had the strongest relationship, which suggests that workers with a positive attitude towards safety goals tend to have a better attitude towards safety. The item "I take responsibility for the safety goals established" had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive large correlation (0,587) with the dimension "Workers' participation and commitment towards safety" has the strongest relationship, which suggests that when workers take responsibility for their safety goals, they are likely to be more involved and committed towards safety.

H3: Participative communication and safety culture: The dimension Communication had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive large correlation (0,507) with the dimension "Workers' attitude towards safety" had the strongest relationship, which proposes that higher levels of involvement in the communication of safety-related matters with workers typically improves the attitude of workers towards safety.

H4: Participative decision-making and safety culture: The dimension Decision-making had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive large correlation (0,531) with the dimension "Management commitment and actions towards safety" had the strongest relationship, which infers that involving workers in the decision-making process regarding safety tends to make workers feel more empowered and view their management as more committed and involved in their actions towards safety.

H5: Participative goal setting and safety culture: The dimension Goal setting had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive medium correlation (0,498) with the dimension "Workers' attitude towards safety" had the strongest relationship, which implies that involving workers in the establishment of safety goals generally improves their attitude towards safety.

H6: *Participative control and safety culture:* The dimension Control had a significant positive correlation with all the dimensions of safety culture (p-value < 0,05). A significant positive large correlation (0,625) with the dimension "Management commitment and actions towards safety" had the strongest relationship, which indicates that involving workers regarding their performance reviews in terms of safety, tends to make workers view their management as more committed and involved in their actions towards safety.

Discussion

To promote a positive safety culture within an organisation through a participative safety management approach, management in the forestry industry of South Africa

can firstly focus on showing a visible and active participation in safety issues, and they must have an open communication policy to reduce or eliminate any safety barriers. Management can further show their involvement by visiting the working premises and promote a safe working environment. Furthermore, workers must be involved and participate in the establishment of safety goals, thus allowing them to take responsibility for these goals. Management can also involve and promote the participation of workers in the communication process by focusing on upward and downward communication. Moreover, management must specifically focus on gaining feedback from employees in terms of their opinions regarding the reporting of near misses, identifying hazards, suggestions for the improvement of safety in the workplace, and any safety concerns that employees might have. Management should also provide workers with feedback regarding safety issues, such as communicating changes in safety procedures, providing workers with enough safety information, and by creating an open communication policy where workers can feel free to discuss safety-related issues with their management without being scared to do so. This will avoid any ambiguity and misunderstanding managers or workers might have regarding safety. In addition, management must encourage workers to give their inputs on decisions that are related to workplace safety polices, training, processes, and related issues. Management should also incorporate the inputs from workers on safety related issues. Managers, supervisors as well as workers must all have an opportunity to give inputs in the determination of safety goals and management should serve as facilitators to ensure that safety goals are specific, measurable, attainable, relevant and time bound. Management must also involve employees in the establishment of standards to measure safety performance. This will allow employees to understand how their safety performance is going to be measured. Furthermore, workers and managers must take up the responsibly together for the achievement of excellent safety performances and not blame each other for bad safety performances. Additionally, management must make sure that workers participate in the safety performance review processes as well, so that both parties can understand how safety performance can be improved in the future. Lastly, management must also make sure that they continuously support workers and assist them to keep their safety performance on track.

Conclusion

The aim of this study was to establish if there is a relationship between participative management and safety culture in the forestry industry of South Africa. In this regard this study made a positive contribution in the field of safety management by providing valuable insights towards the level of involvement of workers in terms of safety management and the safety culture of workers in the forestry industry. The literature towards participative management and safety culture was further extended by establishing that the involvement of workers in the forestry industry in the safety management practices of the organisation has a positive effect on the creation of their safety culture. The study's scope is limited to the forestry industry, suggesting

the potential for future research to explore worker involvement in safety management across diverse industries and their corresponding safety cultures. To delve deeper into the empirical findings from this study, a subsequent qualitative study could be conducted. However, it's noteworthy that the reliability of the motivation construct employed for assessing worker involvement was found lacking, prompting the recommendation for future investigations to enhance the reliability of the construct by refining the measurement item. This study concludes with the following observation from the literature: "Employee involvement is key for the construction and effective implementation of a safety culture, with the main function being the maintenance of the safety level and improvement of prevailing safety standards" (Zhang et al., 2020). Keeping this in mind, management in the forestry industry of South Africa should not underestimate the importance and power of employee involvement, not only on creating an effective safety culture, but also maintaining and continuously improving their safety standards.

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RELACJA POMIĘDZY ZARZĄDZANIEM PARTYCYPACYJNYM A KULTURĄ BEZPIECZEŃSTWA: PRZYPADEK POŁUDNIOWOAFRYKAŃSKIEGO PRZEMYSŁU LEŚNEGO

Streszczenie: Niniejszy artykuł badawczy analizuje wpływ zarządzania partycypacyjnego na kulturę bezpieczeństwa wśród pracowników kontraktowych w przemyśle leśnym Republiki Południowej Afryki. Badanie ma na celu uwzględnienie konieczności zaangażowanego podejścia do zarządzania bezpieczeństwem w miejscach pracy o wysokim ryzyku, ze szczególnym uwzględnieniem Południowej Afryki. Skoncentrowanie się na tym obszarze jest istotne ze względu na niepokojące wskaźniki obrażeń i śmiertelności, zwłaszcza w sektorach górnictwa i budownictwa. Warto zauważyć, iż przemysł leśny jak wynika z badań wykazał stosunkowo wyższe wskaźniki w zakresie bezpieczeństwa, co potwierdzają wyniki badania. W celu zebrania danych wykorzystano technikę mieszanych badań ankietowych, łącząc samoopisowe ankiety i strukturalne wywiady. Próba obejmuje zarówno mężczyzn, jak i kobiety pracujące w przemyśle leśnym w prowincji Mpumalanga w Południowej Afryce, którzy aktywnie uczestniczą w działaniach operacyjnych, szczególnie tych związanych z bezpieczeństwem i higieną pracy (BHP) w sektorze leśnym. Dane zebrane z ankiet są poddawane analizie za pomocą współczynnika korelacji Pearsona. To podejście statystyczne pomaga ustalić relację między różnymi wymiarami zarządzania partycypacyjnego a kulturą bezpieczeństwa. Wyniki badania ujawniają istotną pozytywną korelację łączącą zarządzanie partycypacyjne i kulturę bezpieczeństwa. Odkrycie to potwierdza teoretyczne założenie, że bardziej zaangażowane podejście menedżerów do kwestii bezpieczeństwa pozytywnie wpływa na kulturę bezpieczeństwa pracowników leśnych.

Słowa kluczowe: zarządzanie partycypacyjne; zarządzanie bezpieczeństwem; zaangażowanie pracowników; kultura bezpieczeństwa