FACTORS THAT PROMOTE ZERO FATALITIES, INJURIES AND DISEASE IN CONSTRUCTION

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For the past three decades, the idea that accidents, fatalities, injuries, and disease should be reduced to zero has been gaining traction in safety management research and practice. As most literature on zero targets focus on its application to industrial health and safety (H&S), there is a need to increase the knowledge of how it could be implemented in construction. This is more so that limited 'zero' findings have only focussed on its use in developed countries. To make a contribution from a developing country, a South African exploratory research survey was conducted among a convenience sample of 'better practice H&S' general contractors in 2015. The survey determined that people are the most important resource in an enterprise, and zero harm, incident, and accident that are anchored on 'respect for people' and 'continuous improvement', should be adopted as very important for a worksite in construction. The perceptions of the respondents in the study could be seen in the light of a theory, which indicates that people learn to behave in ways that lead to desired outcomes and they also learn not to behave in ways that leads to undesired outcomes. Furthermore, based upon Factor Analysis, six factors that promote fatalities, injuries, and disease were identified. In essence, if an outcome is set as 'zero', there is likelihood for members of an organisation to work towards it by incrementally decreasing accident and fatality rates in such a firm. If H&S statistics are to be believed, such a decrease is most needed in South Africa.

Keywords: fatalities, health and safety (H&S), injuries, zero

INTRODUCTION

The overall aim of industrial H&S research is to define a 'safe' work site as one where injuries and fatalities constitute 'zero' sum (Young, 2014). In construction, contractors have adopted such targets in order to keep their workers safe and abide with regulations in a compliance-based H&S` environment (Wilkins, 2011). However, from limited information on its attainment, such a target is elusive. Case studies show that zero targets are goals that are difficult to attain. For instance, a New Zealand hazardous plant industrial study assessed the effects of such a target and noted that even though a firm focused on a 'zero target' for decades, accomplishment has been unclear for various reasons that manifest through hazard misunderstandings and misinterpretations (Young, 2014). Although the firm has recorded an astonishing reduction in lost time injuries (LTIs) owing to the use of the target, minor incidents have deprived the firm of complete success.

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Smallwood, J J and Emuze, F (2016) Factors that Promote Zero Fatalities, Injuries and Disease in Construction. *In*: P W Chan and C J Neilson (Eds.) *Proceedings of the 32nd Annual ARCOM Conference,* 5-7 September 2016, Manchester, UK, Association of Researchers in Construction Management, Vol 1, 549-558.

Despite the expansion in the use of compliance-based H&S that supports programmes such as 'zero targets', construction H&S deviations are continually reported in South Africa (Construction Industry Development Board, 2009), where injuries and fatalities in the sector are excessively high when compared to other industrial sectors (Emuze and Smallwood, 2015). To amplify the need for a goal in the sector, the statistics from the main mutual compensation insurance provider in South Africa (Federated Employer's Mutual Assurance (FEM)) indict almost 50% of the industry with a record 2997 accidents in 2014 (Emuze and Smallwood, 2015). These accidents led to 54 fatalities and 377 permanent disabilities, which in turn, contributed 8129 lost days in 2014. Clearly, the goal of zero fatalities, injuries, and disease is not a reality at both industry and organisation levels, and as such, interventions that are beyond compliance-based safety are required in South Africa.

This paper is premised on the need to realise improved construction H&S, which is evident in an industry that could promote zero harm to its workers. The objective of this paper is to report on a study that explored the perceptions of contractors regarding the use of zero 'goals' / targets to improve H&S performance in South Africa. The study explored how important actions / beliefs / interventions / practices / states are in terms of achieving zero accidents, injuries, fatalities, and disease in construction, and their perceptions relative thereto and construction H&S in terms of concurrence with a range of statements.

As a way of introduction to the paper, the challenges of implementing zero targets are highlighted in the next section of the paper before a brief description of the primary data collection procedure is presented. The findings of the exploratory study are thereafter described and the discussion section compares the findings with the literature. The conclusion motivates for future case studies that would enhance knowledge regarding the use of zero targets in South African construction.

CHALLENGES OF ZERO TARGET VISIONS

While the use of goals has been advocated because of improved H&S performance (Zwetsloot et al., 2013), a range of challenges exist in various contexts where such goals are supposed to eliminate hazards and accidents. Socio-technical work setting and negative effects of such goals constitute reported challenges. In terms of a socio-technical environment, multiple incident and accident causations are a major hurdle in an industrial setting similar to the one in a construction project. The BP incident of 2010 in an industry that have superior H&S programmes serves as an example. An excerpt from the BP report (2010: 31) is indicative of incident causation complexity with the quote: "The team did not identify any single action or inaction that caused this incident. Rather, a complex and interlinked series of mechanical failures, human judgements, engineering design, operational implementation and team interfaces came together to allow the initiation and escalation of accident."

Thus, multiple causal factors contribute to accidents and this perception can be seen in most incident investigation reports similar to the BP report. The BP accident occurred in an industry where large organisations are committed to goals in the form of 'zero harm', and 'zero accident vision (ZAV)', to mention a few. Such goals are often seen in company reports, policies, H&S manuals, and even websites where construction firms in the United Kingdom (UK) (and elsewhere, including South Africa) also indicate their commitment to higher standards of H&S (Rawlinson and Farrell, 2010). Even in less sophisticated industries, accident causation has multiple pathways. A forklift incident in Hafey (2015) is a case in point. According to Hafey (2015: 67),

"the incident that was investigated involved a forklift that slid on a wet floor in the shipping area of the plant. The initial focus of the investigators was the forklift driver and the speed at which he was driving. It was implied that he should have slowed down because he knew the floor was wet. By asking why five times I tried to steer them away from the person and toward the real root cause. Why did the forklift slide? Why was the floor wet? Where did the water come from? ……Are there different tires that would be more suited to wet conditions? Further analysis of the incident as reported by Hafey (2015) moved the focus away from the 'who' to the 'what' and 'why' questions, which in turn beamed the light on how the hazard should have been addressed (Young, 2014). These incidents show that setting goals is not enough in a socio-technical environment where a causation model for hazard-related incidents emphasizes the influence of organisational culture and the gaps that may exist in controls when H&S policies, standards, procedures, and the accountability system are insufficient (Manuele, 2014).

Dekker et al. (2015) in a response to the advocates of zero goals noted that goals may not necessarily mean a commitment to 'no accident' at all levels of severity and in fact, goals may conceal severe accidents and imply that near-misses and minor accidents are inevitable and required for making learning happen from everyday work failures in a complex socio-technical system. Excessive measurement, erudite data computations, and high bureaucratic systems backed up by regulations from compliance-based safety regimes are some of the reported negative effects of setting goals (Dekker, 2014; Hale et al., 2013). Although the bureaucratic accountability within an organisation has brought gains that are shown through reduction in harm, Dekker (2014) reported that it is generating concerns that run counter to the original goals. Such effects include the inability to predict unexpected events, the so called 'number games', the creation of new H&S problems, and many more. For instance, a study from Finland, which showed a strong negative correlation between incident rate and fatalities, implies that the fewer incidents that are reported from a construction site, the higher its fatality rate (Saloniemi and Oksanen, 1998). In fact, Dekker et al. (2015) citing other authors say that ZAV is yet to become mainstream because little is known about the exact activities and mechanisms that support the reductions in harm that committed companies have reported. In the construction industry, Sherratt (2014) also examined the practical realities of 'zero target' of construction H&S in the UK. The findings in Sherratt (2014), which are based on the information collected from five large contractors operating 'zero target' H&S programmes, show that 'zero' was viewed as a philosophy and a target with different interpretations in practice.

This section shows that there are protagonist and antagonist in the safety management research community with respect to zero targets. The next section briefly highlights the data collection procedure used for further exploration of the issues.

DATA COLLECTION

The exploration of the issues was conducted to determine what can be learned from contractors in terms of using zero targets to eliminate fatalities and injuries in South Africa construction. The purpose of the exploratory literature and opinion survey is to develop pertinent propositions for additional inquiry (Yin, 2014). A convenience sample was used for the survey. The study was conducted not to generalise into a population, but to gain an understanding of the extent of the examined phenomena by measuring the perceptions of the workers within 'best practice H&S' general contractors (GCs) who had achieved a place in regional H&S competitions in South

Africa. The so called 'best practice H&S' GCs have consistently won H&S awards in the industry based on observed compliance during inspections, and reported low incident and accident rates. This intention is recognised in survey research that has moved away from conducting a broad overview to data collection techniques that fulfil specific needs (Andres, 2012). A sample consisting of twelve GCs was used for the survey based upon their commitment to H&S and hence willingness to facilitate the survey. The managing director or H&S coordinator in the respective firms circulated the questionnaire and returned same to the lead researcher / author. The questionnaire consisted of two close-ended five-point Likert scale type questions, and one open ended question. The combination of both closed ended and open ended questions in the instrument was done to ensure that the respondents are able to provide complete and accurate responses (Andres, 2012). At the end of the survey period, 92 responses were received, which were included in the analysis of the data. In terms of demographic information, the mean age of respondents is 39.8 years, the mean years worked for current employer is 5.5 years and in construction is 14.5 years, and 91.1% are male 8.9% are female. A total of 46 qualifications and 31 occupations were recorded. 64.8% of respondents were qualified with either a diploma or a degree. Contract manager (17.9%) and H&S Officer (10.9%) predominated among occupations.

RESEARCH FINDINGS

Given that ordinal levels of measurement are characterised by rank, variables used in the survey were ordinal in nature as tabulated in Table 1 (Salkind, 2015). The computation of the findings was done with descriptive statistics and factor analysis. Due to page limit constraints, only the data for the factor analysis is displayed in Table 1 while the descriptive data is herein explained in paragraph format. The review of related H&S management literature led to the compilation of the 38 variables explored in the study. The analysis of the importance of 38 variables in terms of achieving zero accidents, injuries, fatalities, and disease in construction was done in terms of percentage responses to a five point scale of 1 (least important) to 5 (very important), and means scores (MSs) between 1.00 and 5.00. It is notable that all the MSs are > 3.00, which indicates that the recorded perceptions are very important as opposed to least important. It is also notable that 27 / 38 (71.1%) MSs are $> 4.20 \leq 5.00$, which indicates that the importance is between more than important to very / very important.

Furthermore, the first five have MSs > 4.60 i.e. in the upper half of the range. People are our most important resource is ranked first, followed by zero harm, which should be the goal if people are the most important resource. A goal of 'zero harm' is also accompanied by a goal of 'zero accident' ranked fourth, and a goal of 'zero incident' ranked fifth. A mission of 'continuous improvement' is ranked third, which is imperative in terms of the journey towards 'zero'. Consciousness and mindfulness ranked sixth is critical as the former implies cognising in terms of actually observing the environment and mindfulness in terms of realising the implications of the status quo or actions or omissions. H&S management system, and respect for people are ranked seventh and eighth respectively. The former provides the framework for H&S in an organisation, and the latter is necessary if ‘people are our most important resource’. Design and construction hazard identification and risk assessments (HIRAs) are ranked ninth and tenth respectively and highlight the role of risk assessments in achieving 'zero'. Furthermore, in the case of the former it is the highest ranked designer action. A vision of a 'fatality, injury, and disease-free work place' is ranked eleventh, and influences the achievement of 'zero'. Furthermore, in the case of

the former it is the highest ranked designer action. Core competencies is ranked twelfth, which influence the achievement of 'zero'. Conformance to requirements, ranked thirteenth, relates to quality, and is a prerequisite for the achievement of 'zero'. However, quality management and Quality Management System are ranked twenty-fifth and twenty-eighth. Furthermore, the latter's MS is in the lower range. Adequate financial provision for H&S, ranked fourteenth, is client, contractor, and cost engineer related and is important in terms of resourcing H&S. Construction Management competencies (knowledge & skills) is ranked fifteenth, which indicates that managing construction H&S is an integral part of construction management. Client H&S requirements, and designing for construction H&S, are ranked sixteenth and seventeenth respectively.

The former is the highest ranked client action, and the latter is the second highest ranked designer action. Eighteenth ranked H&S specifications is the second highest ranked client and third highest ranked designer action. 'Design and construction' method statements is ranked twentieth, and is the fourth highest ranked designer action. A goal of 'Zero deviations' and the belief 'All accidents are preventable' are ranked nineteenth and twenty-first respectively, and influence the achievement of 'zero'. Client focus is ranked twenty-second and is the third highest ranked client action. Integration of design and construction, which is complementary to performance and both a project management and designer issue (fifth highest ranked designer action), is ranked twenty-third. Pre-contract planning, which is ranked twenty-fourth, primarily a contractor action. H&S training, and H&S education, which are ranked twenty-sixth and twenty-seventh, empower and enable workers, and supervisors and managers to conform to requirements. Their ranking is notable as they are perceived to be of major importance in terms of H&S performance. However, their MSs indicate that they are between more than important to very / very important.

The remaining 11 / 38 (28.9%) MSs are $> 3.40 \leq 4.20$, which indicates that the actions / beliefs / interventions / practices / states are between important to more than important / more than important. Constructability / Visualisation, which is ranked twenty-ninth, is the sixth highest ranked designer action. Environmental management system, and environmental management are ranked thirtieth and thirsty-first. The practice 'H&S is a value, not a priority', and the belief 'Accidents are failures of management' are ranked thirty-second and thirty-eighth respectively, and both influence the achievement of 'zero'. Appropriate conditions of contract, appropriate procurement system, and project duration, ranked thirty-third, thirty-sixth, and thirty-seventh respectively, are all procurement related and influence H&S performance. The thirty-fourth ranking achieved by pretender planning ranked is notable as it is critical stage in terms of contractor planning for H&S. Similarly, the thirty-fifth ranking of tertiary education (all built environment) that includes construction H&S, as it will empower the built environment disciplines involved with projects to contribute to construction H&S.

Five design, all three client, and one procurement related actions' / beliefs' / interventions' / practices' / states' MSs are $> 4.20 \leq 5.00$ (important to very / very important), and one designer and three procurement are $> 3.40 \leq 4.20$ (important to more than important / more than important). To understand the analysed data better, factor analysis was conducted so that many variables could be described with a few factors. Factor analysis is essentially a method for investigating whether a number of variables of interest are linearly related to a smaller number of unobservable factors

(Tryfos, 1998). In factor analysis, the parameters of these linear functions are called loadings and there are an infinite number of sets of loadings that yields the same theoretical variances and covariances. Principal component method (PCM) that is widely used for factor analysis was adopted in this study because the method seeks values of the loadings that bring the estimate of the total communality as close as possible to the complete observed variances (Tryfos, 1998). The factor analysis identified six factors as presented in Table 1. The actions / beliefs / interventions / practices / states that have significant loadings have been identified by means of an *.

Factor 1 (10 No.*) includes respect for people, people are our most important resource, pre-contract planning, adequate financial provision for H&S, construction management competencies (knowledge & skills), core competencies e.g. values, aptitude, and integrity, environmental management, environmental management system, conformance to requirements, and H&S management system. Factor 2 (5 No.*) includes a vision of a 'fatality, injury, and disease-free work place', a goal of 'zero deviations', a goal of 'zero incidents', a goal of 'zero accidents', and a goal of 'zero harm'. Factor 3 (9 No.) includes appropriate procurement system, appropriate conditions of contract, project duration, pre-tender planning, pre-contract planning, quality management system, environmental management, environmental management system, and tertiary education (all built environment) that includes construction H&S. Factor 4 (9 No.) includes client focus on H&S, client H&S requirements, H&S specifications, designing for construction H&S, design hazard identification and risk assessments, 'design and construction', method statements, integration of design and construction, constructability / visualisation, appropriate conditions of contract, and construction hazard identification and risk assessments. Factor 5 (6 No.) includes design hazard identification and risk assessments, 'design and construction' method statements, quality management system, H&S management system, H&S education - short learning programmes, and H&S training – workshops and seminars. Factor 6 (4 No.) includes people are our most important resource, integration of design and construction, constructability / visualisation, and consciousness and mindfulness.

The open ended question of the study produced 22 commentaries, which were subjected to qualitative content analysis in order to identify, enumerate and analyse specific messages embedded in the texts. Some of the respondents mentioned similar goals that are used by their firms. The mentioned slogans / goals include "home without harm, everyone, every day." Some insightful literal comments noted include:

> • • Zero fatalities, injuries and diseases are achievable, but only if you have the commitment from your organisation and your labour force and that should also include your subcontractors and their management.
>
> • • The 'basic' H&S 'guideline' that is currently seen as acceptable on South African sites is not strict enough to guarantee zero fatalities, injuries, and disease even if planned correctly. This is because H&S will always be planned up to what is acceptable as per the companies' H&S file. Anything more will be seen as slowing down production and a waste of company money. Unfortunately H&S will always come at a cost, whether its money or statistics.
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> • • A culture needs to be established in an organisation to live out their values. It should be the starting point in any business. It must be felt and leadership needs to walk the talk and talk the walk. It is about discipline and order in the workplace.

Table 1: Pattern matrix for the importance of actions / beliefs / interventions / practices / states in terms of achieving zero accidents, injuries, fatalities, and disease in construction

Action / Belief / Intervention / Practice / State	Loading / Factor 1	2	3	4	5	6
The belief 'All accidents are preventable'	.007	.289	.127	.083	-.148	.192
The belief 'Accidents are failures of management'	.115	-.127	-.056	.057	-.109	.191
Respect for people	.378*	.170	-.005	-.114	.018	.200
People are our most important resource	.443*	.281	.152	.051	.041	.423*
A vision of a 'Fatality, injury, and disease-free work place'	.045	.433*	-.024	.043	.022	.082
A goal of 'Zero deviations'	-.100	.452*	-.119	-.056	-.138	.179
A goal of 'Zero incidents'	.014	.737*	-.067	-.032	.033	-.190
A goal of 'Zero accidents'	-.002	.857*	-.063	-.112	-.006	-.150
A goal of 'Zero harm'	.000	.834*	.015	-.221	.014	-.077
A mission of 'continuous improvement'	.200	.265	-.199	-.037	-.097	.253
The practice 'H&S is a value, not a priority'	.033	-.087	-.232	-.030	-.055	.165
Client focus on H&S	-.001	.142	-.098	-.701*	.045	-.003
Client H&S requirements	.107	.062	.041	-.823*	.065	-.111
H&S specifications	.139	.063	-.067	-.737*	-.007	-.106
Designing for construction H&S	.054	.032	-.063	-.557*	-.028	.149
Design hazard identification and risk assessments	.008	-.008	.128	-.641*	-.416*	.073
'Design and construction' method statements	.061	.058	-.248	-.264	-.436*	.226
Integration of design and construction	-.067	.087	-.310	-.438*	-.029	.424*
Constructability / Visualisation	-.036	.061	-.216	-.596*	-.015	.397*
Appropriate procurement system	-.117	.175	-.765*	-.185	.061	.028
Appropriate conditions of contract	.146	.003	-.515*	-.491*	.181	.057
Project duration	.018	-.066	-.549*	-.148	.145	.069
Construction hazard identification and risk assessments	.055	-.053	.013	-.458*	-.271	-.019
Pre-tender planning	.246	.071	-.656*	-.058	.134	.231
Pre-contract planning	.505*	.052	-.500*	.096	.052	.090
Adequate financial provision for H&S	.620*	-.095	-.035	-.121	-.070	.100
Construction Management competencies (knowledge & skills)	.764*	-.155	.097	-.155	-.008	.019
Core competencies e.g. values, aptitude, and integrity	.493*	.125	-.267	.075	-.022	.162
Quality management	-.029	.146	-.717	.021	-.307	-.036
Quality Management System	.047	.127	-.733*	.035	-.363*	-.162
Environmental management	.495*	.000	-.514*	-.101	-.091	-.172
Environmental management system	.561*	.068	-.478*	.018	-.127	-.211
Conformance to requirements	.755*	.160	.109	-.155	-.169	-.122
H&S management system	.395*	.093	-.060	-.267	-.446*	-.133
Consciousness and mindfulness	.119	.007	.046	-.230	-.148	.501*
Tertiary education (all built environment) that includes construction H&S	-.016	.043	-.595*	-.049	-.231	-.075
H&S education – Short Learning Programmes	-.006	.110	-.066	-.068	-.644*	.033
H&S training – Workshops and Seminars	.196	-.052	-.122	-.049	-.688*	.083

DISCUSSION

Sherratt (2014) noted that though illogicality and contradiction regarding the comprehension of what constitutes 'zero' exist; the concept of 'zero' should be a necessity for H&S management so as to improve construction practice. The suggestion of Sherratt (2014) resonates with the status quo of construction H&S in South Africa in terms of fatalities and injuries. In general, the perceptions of the respondents of this study point to the significance of the practices, and beliefs that were examined in the exploratory study. The respondents perceived that people should be the most important resource in an enterprise, and zero harm, incident, and accident that are anchored on 'respect for people' and 'continuous improvement', should be viewed as very important for a worksite in construction. Some of the

survey respondents also opine that zero fatalities should be pursued in the industry despite the 2014 statistics showing that 54 fatalities occurred in South African construction (Emuze and Smallwood, 2015).

The perceptions of these South African contractors reverberate with two industry examples from the UK. In the first example, Mottram (2005: 14) reported that an H&S programme helped a leading civil engineering firm ".to achieve almost unprecedented zero accident rate, and place the company in the top 1 percent of the UK construction industry for safety." A key lesson learnt on the road to the zero target achievement in the example is that training was instrumental in overcoming challenges and it also made individuals to think about safety at an earlier stage of work, and then make plans to minimize risk involved in tasks. In the second industry example from the UK, Pollitt (2006) reported that a building contractor achieved its target of zero accident through training and awareness initiatives involving its employees. In these two examples, the firms both made H&S a priority in their business plans and also raised its awareness throughout their enterprise.

In other words, the pursuit of zero goals or targets, which may appear to be difficult, could promote sustained efforts for a steady reduction in lost time injuries / lost days of productive work (Young, 2014) and the two examples from the UK that are almost a decade old give credence to the call to encourage zero goals / targets (Zwetsloot et al., 2013). The pursuit of zero goals could be supported by linking the performance of specific behaviours to the achievement of specific H&S outcomes since managers in the industry can motivate their colleagues to perform in ways that help the firm to achieve its goals (Teo et al., 2005).

This idea is based on 'Operant Conditioning Theory', which indicates that people learn to behave in ways that lead to desired outcomes and they also learn not to behave in ways that leads to undesired outcomes (O' Donohue and Ferguson, 2001). The role of training in modifying behaviour of workers is important in this context because a study has shown that increased durations of training are related to lower accident rates. As mentioned by Hare and Cameron (2011), if duration is accepted as a measure of extent of training, then it is possible to hypothesise that increased levels of training could lead to increased H&S performance. Apart from the work of Hare and Cameron (2011) that evaluated the factors contributing to superior safety performance, the two UK examples used in this section of the paper strongly mentioned the role of training in addressing H&S problems on the road to the attainment of zero accident rate by the construction companies.

To sum up this discussion, it is pertinent to understand the issues that surround the adoption or non-adoption of zero targets in construction through multiple views so that appropriate H&S management programmes can be engendered in the industry. Although subject to debates from multiple perspectives, a possible way forward is 'zero target'. Despite its vulnerability to multiple interpretations and understandings among project actors in the construction industry (Sherratt, 2014), the industry needs to set a standard that takes it to where accidents, fatalities, and injuries are not seen as business as usual. The two illustrated examples of a major reduction in fatalities through H&S programmes support this argument. Another recent example aligns with this idea. Wright (2012) reports that zero fatalities was recorded in the London Olympic project in which the Olympic Delivery Authority adopted a 'zero tolerance' approach to unhealthy and unsafe construction practices. This major project involves 12000 people, who worked for 80 million person hours in five years without a single

fatality despite the enormous mobility / logistic requirements of the project. The reality of the approach is the zero fatality H&S record; in spite of the non-attainment of 'zero harm' / 'zero accident' target (Sherratt, 2014). Furthermore, the Factor Analysis amplifies the need for a 'cocktail' of six factors consisting of a range of actions / beliefs / interventions / practices / states in terms of achieving zero targets.

CONCLUSIONS

The surveyed contractors in South Africa acknowledge the importance of zero targets for the improvement of H&S performance. However, similar to the perceptions of a segment of the H&S management research community, some of the contractors are convinced that such goals are not attainable in practice because of certain conditions that have to be addressed. Such conditions are similar to the reasons why the realisation of ZAV is not widely reported in the industry. The findings indicate that achieving 'zero' requires a multi-stakeholder effort. Beyond multi-stakeholder effort, the use of 'zero target' to lower accident rates requires the implementation of training programmes specific to the challenges that would be encountered. The training programmes should be implemented so that they impact the culture in the work place in favour of lower accident rates.

The eradication of harm to people constitutes a critical aspect that provides the foundation to drive the 'zero' endeavour. As illustrated in the examples of firms that achieved ZAV in the UK and the factor analysis, it is important to set a goal that people could aspire to in a firm. Such a goal could be used to modify behaviour in favour of early hazard minimisation and improved H&S performance. The reported study is however not exhaustive and so, additional work is required to deepen research knowledge regarding 'zero targets' in South Africa. Case studies that document the implementation of 'zero targets' should be conducted to determine the reliability of these targets in order to advance the related agenda in South Africa. The case studies should endeavour to evaluate the implementation challenges and identify practices to be promoted, if there are success stories similar to the reported UK examples in South Africa.

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