JCBM (2017) 1(2). 54-63

University of Cape Town

Journal of Construction Business and Management

http://journals.uct.ac.za/index.php/jcbm

Establishing Underlying Structures of Safety Performance Measures Using Factor Analysis of Data on Construction Workers in Gauteng, South Africa

C S. Okoro[1], I. Musonda[2]

Department of Construction Management and Quantity Surveying, University of Johannesburg, South Africa[1, 2]

Received 16 November 2016; received in revised form 14 March 2017; accepted 20 May 2017

Abstract

The health and safety (H&S) of site employees in the construction industry has been overwhelmingly studied for decades. However, there is limited literature, which analyses underlying structures of safety performance measures especially as related to their unhealthy and unsafe eating behaviour. The paper presents findings from an exploratory factor analysis of H&S performance measures. A 10-item questionnaire which was developed after an extensive literature review was used to collect empirical data on safety performance (SP) of construction workers in the Gauteng Province of South Africa. Findings revealed that safety performance of site workers could be reasonably measured by two constructs. The two constructs were clearly defined as trailing and prevailing. The emerged trailing measures were named lagging indicators while the popular ones were designated as leading indicators. The results support extant literature which advocates the use of both leading and lagging safety performance indicators for effectively assessing construction workers' safety performance. The study provides evidence which could be beneficial in the psychometric evaluation of construction workers' safety performance and behaviours on construction sites.

Keywords: Construction workers, Factor analysis, Gauteng, Safety performance.

1. Introduction

The construction industry is laden with accidents and deaths on a poor level despite its positive role in the improvement in the quality of lives of any nation's citizenry through job provision and contribution to Gross Domestic Product (GDP) (Ofori 2012; Okoro et al. 2016). Despite significant reductions of incidents on construction sites in the past several decades, the injuries and fatality rates for construction workers are still higher than other industry sectors (Health and Safety Executive (HSE) 2014; Liu et al. 2015). In South Africa, there were 9858 accidents and 93 fatalities; in 2011, 8099 accidents and 50 fatalities were recorded, and 258 accidents and 56 fatalities in construction were reported in 2012, in the construction sector (Prinsloo 2013). These accidents and deaths, which are sometimes preventable, amount to significant costs to employers, insurance companies and the economy as a whole, with direct and indirect costs such as medical, hospital and rehabilitation expenses, workers' compensation payments, and higher insurance premiums or even loss of insurability, loss in wages, loss of morale, legal costs, training costs, loss of skill/efficiency, administrative time, and costs to repair damaged property (Janackovic et al. 2013; Thepaksorn and Pongpanich 2014). A recent evaluation of costs of construction accidents from 100 construction establishments found that the amount of R10, 087, 350 was expended on direct costs, while R22, 893, 850 was attributed to indirect costs related to accidents and injuries (Pillay 2014). Consequentially, it is paramount to improve the H&S system continually to reduce the costs and increase companies' competitiveness and efficiency (Janackovic et al. 2013; Okoro 2015).

Moreover, attention to construction workers' H&S is vital since they are at the centre of construction activities and as such are indispensable. Construction workers and their employers must make daily decisions about safety at work since it affects and competes with other performance aspects of the construction activities, which can be either

[1] Corresponding Author. Tel: +27738626360
Email address: chiomasokoro@gmail.com
[2] Email address: imusonda@uj.ac.za

related to the task itself (e.g., safety vs. on-time delivery or productivity), or to the worker performing the task (e.g., safety vs. personal discomfort or extra effort) (Huang et al. 2013). Poor safety at work could result from, among other things, workers' unhealthy eating behaviours (Melia and Becerril 2009; Lingard and Turner 2015). Additionally, the nature of construction work predisposes construction workers to hazards which pose a threat to their H&S. Such hazardous conditions may include electrocutions, and structure collapses, extreme heights, machinery failure, welding emissions, lead, unguarded machinery, being struck by heavy construction equipment, silica dust, asbestos, and so forth (ElSafty et al. 2012). Continuous attention to H&S and integrated management of H&S increase operational excellence, profitability and positive safety behaviours. Operational excellence, defined as doing the right thing, the right way, at all times, even when no one is watching, results in enforcement of appropriate systems to encourage safety behaviours, and thus generate long-lasting and authentic effects such as reduction in the occurrence of injuries and deaths, reduction in avoidable expenditure on on-site exigencies, increase in productivity, and in fact, morale and motivation among employees as well as implications of H&S are realised (Janackovic et al. 2013; Liu et al. 2015; Okoro et al. 2016).

Health and safety measurement and management have been given attention in the extant literature (Lin et al. 2009) and in the construction industry specifically (Hinze et al. 2013; Lingard et al. 2013). However, most literature focused on the work environment, managerial and organisational aspects of H&S. Few studies have been devoted to safety performance measures related to the lifestyle behaviours of the workers which have been suggested to be unhealthy (Melia and Becerril 2009). The current study focuses on safety performance measures, which could be related to workers' unhealthy eating behaviours and explores underlying structures of the measures identified from the extant literature. The objective of the present paper is to determine and analyse the underlying structures of safety performance measures relatable to workers' unhealthy eating behaviours, as used in the study. By highlighting the structure of these measures, researchers and construction employers will be aided in assessing and identifying pre- and post-indicators of safety behaviours and performance of construction workers.

2. Literature Review

2.1 Unhealthy eating behaviour

A healthy diet connotes consumption of food from all the different classes of food nutrients (Amare et al. 2012). Eating a variety of adequate and well-balanced nutrient-rich foods gives the body much-needed nutrients for optimal health and well-being (World Health Organisation (WHO) 2014). Unhealthy eating is a lifestyle risk-taking behaviour that impairs judgement and could result in accidents (Melia and Becerril, 2009). Poor nutrition is constantly linked to absenteeism, sickness, and a higher rate of accidents on work sites, and invariably, higher medical costs (Kolver, 2012). Iron and vitamin B deficiencies cause fatigue and tiredness, reduce work capacity and productivity, and lead to impaired cognitive and physical performance (WHO 2006). Skipping meals leads to hypoglycaemia (low blood sugar) and causes shortened attention span, reduced information processing speed and response time, leading to accidents and near-misses.

According to Inoue et al. (2014), health risks related to body mass index (BMI) (obesity/overweight), blood pressure, and glucose and lipid metabolism are a result of unhealthy eating. Obesity and overweight are major public health concerns that threaten occupational safety and health and they have a significant positive association with absenteeism, measured as work loss days or spells of absence in a workforce (Schulte et al. 2007). Furthermore, fatigue can lead to poorer performance on tasks which require attention, cognitive decision-making or high levels of skills, giving rise to increased risks especially in safety-critical tasks (HSE, 2009).

Owing to the physically and mentally demanding nature of their activities, and the inherently unsafe working environment and conditions (handling and operating dangerous plant and equipment), construction workers require proper nutrition to sustain physical strength and stamina, manual dexterity and coordination, mental concentration, alertness and cognition (CLC 2014). Unfortunately, construction workers have poor nutrition and unhealthy eating habits which give rise to the prevalence of illnesses such as diabetes and cardio-metabolic risks (Tiwary et al. 2012; Thepaksorn and Pongpanich 2014). Unhealthy workers, partly as a result of unhealthy eating, have weakened the immune system and unstable physical and mental condition, which makes them susceptible to diseases, depression and mental illness, and thus leading to reduced acuity, inability to make quick astute judgements and increased proneness to injuries and accidents.

2.2 Health and safety performance measurement

According to Lingard et al. (2013), H&S performance improvement cannot be achieved if it cannot be measured. One of the most practical guiding principles of the measurability of safety performance is given in the Australian/ New Zealand Standard, AS/NZS 4804: 2001 Occupational health and safety management systems—General guidelines on principles, systems and supporting techniques (AS/NZS 4804) which defines safety performance as "the measurable results of the occupational health and safety management system related to the organisation's control of health and safety risks, based on its OHS policy, objectives and targets" and measuring performance includes measurement of OHS management activities and results (Dingsdag et al. 2008).

Traditionally, records of accidents, injury and ill-health statistics have been used to measure H&S performance (Musonda 2012). However, it has been argued that measuring H&S performance by the frequency of accidents and injuries is sometimes inappropriate, unreliable and deceptive because gross under-reporting could occur (Musonda 2012). Also, injury rates often do not reflect the potential severity of an event, merely the consequence; they reflect outcomes, not causes (Hinze et al. 2013). Others measures potentially lead to an injury or incident and could reveal the state of the safety performance of workers in an industry (Biggs et al. 2009). Such measures include, among other things:

Medical treatment beyond first aid

According to ElSafty et al. (2012), an Occupational Safety and Health Administration (OSHA) recordable injury is an occupational injury or illness that requires medical treatment more than simple first aid. First aid involves a particular level of treatment (such as cleaning and covering of wounds, use of non-prescription medication, etc; whereas medical care occurs when an injury or disease requires a higher degree of attention and management to ensure a full recovery, for instance, treatment of fractures, suturing of wounds and prescribing and providing drugs to manage symptoms (Biggs et al. 2009; International Council on Mining and Metals (ICMM) 2014).

Restricted work, days away from work

Other recordable criteria include limited work, days away from work, significant injuries or illnesses diagnosed by a physician and lost work day incidents (ElSafty et al. 2012). Days away from work, restricted duty and transferred duties are related to injuries which are severe enough that workers are away from work, placed on restricted duty or assigned a lighter job because of the injury. Supporting this view, the International Labour Organisation (ILO) 2013) stated that loss of working capacity or inability to perform normal or routine work functions on the next calendar day after an injury reflects poor worker safety performance (ILO 2003). Statistics on the days away from work or on restricted duty due to an injury are useful when analysing how much loss is incurred from injuries (ElSafty et al. 2012). Lost workday or lost time injuries are also helpful in interpreting solutions to lowering the number of injuries and fatalities per year (Dingsdag 2008; ElSafty et al. 2012). Absence from work due to an injury, for more than three consecutive working days, is considered severe and compensable (ILO 2003; Cameron and Duff 2007).

Correct use of personal protective equipment

According to Farooqui et al. (2008), the use of personal protective equipment (PPE) is one of the core practices required for safety on construction sites. It is a performance issue which belongs to self-protection category and can be used to indicate safety performance levels of firms (Farooqui et al. 2008; Biggs et al. 2009; Construction Industry Institute (CII) 2014). Workers face bodily harm when they do not wear PPE (or do not wear PPE correctly). For instance, falls from heights could occur with weak scaffolding and lack of safety belts; cement burns could be sustained without protective gloves and boots while cementing; injuries could be sustained on fingers, eyes, head, or feet due to the absence of PPE, and so on (Farooqui et al..2008).

Prior risk assessment

Another performance issue which is critical is the evaluation of risks involved in a given task before embarking on it. The identification of the tasks, hazards and the risks of a job before work allows for the implementation of protective measures to ensure that work is done safely (Campbell Institute 2014).

Near-misses and reporting of near-misses

Furthermore, near misses or close calls were shown to be indicators of safety performance ((Biggs et al. 2009; Hinze et al. 2013; CII 2014). Reporting of the near-misses and accidents is also crucial in reflecting workers' attitude and commitment to safety at the workplace. However, according to Masood et al. (2014), the workers may be uncertain about reporting accidents or near-misses because sometimes there is no mechanism for compensation for injuries, and they may blame their luck which made them victims of the accident.

The above-discussed indicators relate to construction workers, before or after an incident, and were therefore adopted as the indicators of worker safety performance, in the current study. This suggests that some indicators may be trailing, providing data about incidents after the fact (Hinze et al. 2013), whereas others may be prevailing, potentially leading to an injury or incident (Biggs et al. 2009). These are trailing, and comprehensive measures were incorporated in the current study because according to Atkins (2011), the use of a set of safety performance indicators provides a greater indication of safety performance than concentrating on one measure in isolation (or indeed a small number of random measures). They were also observed to be good safety performance indicators because they are quantifiable, permit statistical inferential procedures and are valid and representative of what was to be measured (workers' safety actions/behaviours or performance) (Roelen and Klompstra 2012). The interpretations were observed to relate to the system and its operational context (precedents and antecedents of unhealthy eating) (Herrera 2012). In other words, the measures were adopted because they were identified from existing literature and observed to be relatable to construction workers' safety performance at work and were approved by the researcher's supervisors.

3. Research Methodology

To achieve the objective of the study, a review of literature related to safety performance of workers in general and construction workers, in particular, was conducted. Various sources including academic and professional journals, books, government reports, newspapers, magazines, theses and dissertations were consulted. A quantitative research design was used in conducting the study due to the statistical nature of the study and the objective which the study set out to establish (the statistical structures of safety performance measures).

3.1 Questionnaire design

A 5-point frequency response Likert-type scale questionnaire was thereafter developed to elicit information on workers' safety performance on construction sites. The identified items related specifically to those measures which could be associated with unhealthy eating, since this was the purpose of the main study. Closed-ended questions were used because they were thought to be easier to respond to in a shorter time than open-ended ones and they allow for straightforward analysis of data (Hyman and Sierra, 2016).The questionnaire, which consisted of 10 items, was pilot-tested and reviewed thereafter. It was necessary to revise some of the questions to simplify the questions for ease of understanding. The final questionnaire had response categories were assigned 1, 2, 3, 4 and 5, for "on every project", "more than two times", "two times", "once before" and "never", respectively. Therefore, higher scores were meant to represent higher safety performance.

3.2 Data collection

The questionnaire was self-administered to construction workers on building and civil engineering construction sites in Midrand, Samrand, Johannesburg and Centurion. Purposive sampling techniques were used in the study. The participants were selected through heterogeneity and convenience sampling. Heterogeneity sampling, also known as maximum variation sampling, was used to include as many construction settings as possible, in different locations in the Gauteng province of South Africa. This technique was used because the concern was to include diverse views and not about representing the views proportionately (Trochim 2006). However, attention was paid to including workers from different organisations (both building and civil construction companies) to obtain a representative population, which was necessary to improve generalisation (Trochim 2006; Naoum 2007). The respondents were purposively and conveniently sampled. They were purposively selected to include workers who were actively engaged in the physical construction activities as opposed to the site managers and supervisors. This homogeneous group was chosen as they were the most susceptible to poor safety performance on construction sites. Also, workers who were accessible and willing to take part in the study were included (Etikan et al. 2016). A cover letter accompanied the questionnaire to explain the purpose of the study and obtain informed consent. The respondents participated voluntarily and anonymously. Out of a total of 220 questionnaires, 183 were completed, giving a response rate of 83%. The returned questionnaires were used for the empirical analysis.

3.3 Data analysis

Empirical data were analysed using Statistical Package for Social Sciences (SPSS) version 22. The Cronbach's alpha and mean inter-item correlations were used to assess the internal consistency reliability of the scale. Factor analysis using principal axis factoring and oblimin rotation was then conducted to examine underlying structures of the theorised variables. Before the factor analysis, preliminary considerations for the factorability of data were assessed. The sample size requirement of 150+ was met (Pallant 2013). Factorability of data was assessed using the Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity tests. Missing data were excluded using listwise deletion. Outliers were identified and removed before analysis. The Kaiser's criterion (retaining eigenvalues above 1), scree test (retaining factors above the "breaking point") were used to determine the emerging components or empirical constructs from the principal components analysis.

3.4 Validity and reliability

Various measures were taken to ensure that the variables developed from extant literature (termed theoretical constructs in the current study) and those realised after the factorial analysis (termed empirical constructs) were valid and reliable. Through an extensive and thorough literature review and synthesis, expert reviews and validation as well as pilot-testing, construct validity of the theoretical variables was achieved (Olson 2010). The Cronbach's alpha internal consistency reliability test was used to statistically assess the internal consistency of the ten theoretical variables as well as the two empirical constructs including lagging indicators (comprising absence from work for more than three days due to an injury, medical treatment beyond first aid, restricted work, near-misses, injury and sickness at work, and reporting of accidents) and leading indicators (consisting of risk assessment prior to performing a task, accepting any kind of work regardless of risks involved, and failure to wear PPE).

The resulting values, presented in Table 1, indicated good internal consistency of the constructs. Before factor analysis, the scale was considered to be reliable and representative of what is to be measured, with a good alpha index of 0.83 (Roelen and Klompstra 2012; Pallant 2013). After analysis, the internal consistency reliability of the constructs tested using both the Cronbach's alpha and mean inter-item indices, was equally good. Cronbach's alpha values of above 0.7 indicate acceptable internal consistency reliability and mean inter-item coefficients ranging from 0.2 to 0.4 indicate good internal consistency (Pallant 2013).

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Table 1: Population and Sample Size of the Study

	Cronbach's alpha	Mean inter-item correlations	Number of items
Lagging measures	0.885	0.530	7
Leading measures	0.763	0.521	3

4. Findings and Discussion

4.1 Demography

Table 2 shows the response rates from the sites which were sampled. The table reveals that the highest number of respondents was obtained from the hospital building site, whereas the lowest number was received from the residential property under renovation.

Table 2: Response Rates from Selected Sites

	Description of setting	Number distributed	Number received	Percentage received
Building	New hospital site (7 two-storey hospital buildings)	75	67	37
	Office property sites (new additions at basement stage)	60	47	26
	Trading centre (new construction)	40	24	13
	Students' residence (new construction)	16	16	9
	Residential property (renovation)	10	10	5
Road	One extension and two maintenance projects	19	19	10
	Total	**220**	**183**	**100**

Table 3 shows the demographic details of the subjects. The highest percentage of respondents was between 25 – 34 years of age. The highest educational qualification was high school certificate. Unskilled workers made up 21% of the respondents; bricklayers made up 16% while electricians made up 21% of the respondents. 10% of the respondents were made up of carpenters and plumbers, respectively, and 15% consisted of other workers including pavers, painters, tiler, bob-cart operator, glass-fitter, manhole specialist and cleaners. Besides, the respondents were also asked to indicate the nature of organisation for which they worked. 48% of the workers reported that they worked for a building construction company. 24% reported that they worked for a general contractor while 18% revealed that they worked for a company that engaged in civil works only.

Table 3: Demographic Characteristics of the Study Sample

Demographic characteristics	Response category	Frequency	Percentage frequency
Age (in years)	24 and below	47	26
	25–34	86	47
	35–44	38	21
	44 and above	12	6
Education	Primary school	58	32
	High school	72	39
	Training College	42	23
	Others	5	3
Specific job on site	Bricklayers	29	16
	Electricians	26	14
	Carpenters	18	10
	Steel-fixers	17	9
	Plumbers	19	10
	Unskilled workers	38	21
	Others (pavers, bobcat operator, glass-fitter, manhole specialist, tiler, painters and cleaners)	27	15
Organization	Building construction	88	48
	Civil engineering	32	18
	General contractor	44	24

4.2 Findings from factor analysis

Before performing the factor analysis, suitability of the data for factor analysis was tested. The KMO value was 0.832, exceeding the recommended value of 0.6 and Bartlett's test of Sphericity reached statistical significance at p = .000 (< .05), supporting the factorability of the data. The correlation matrix which showed the presence of many coefficients of 0.3 and above also supported the suitability of data for factor analysis.

Factor analysis was thereafter conducted to determine the percentage variance accounted for by each of the ten items. The percentage variability explained by each of the variables is presented in Table 4 and Figure 1. Results in Table 4 further revealed that only two components had eigenvalues above 1 (4.511 and 1.885). The results of the scree test (Figure 2) also supported that only the first two components accounted for approximately 64% of the variance. This means that the two factors together explain most of the variability in the ten original variables and therefore are clearly a good and simpler substitute for all ten variables.

The two components were thereafter rotated to reveal their item-loadings (Table 5). Seven of the factors strongly loaded on the first component, while the remaining three loaded on the second. The two components were then adopted as the empirical constructs.

Table 4: Percentage Variance Explained by the Safety Performance Measures

	Factor	Total	% of Variance	Cumulative %
1	been away from work for more than three days due to an injury	4.511	45.106	45.106
2	been treated medically for injuries (more than simple first aid) on site	1.885	18.851	63.958
3	been asked to do limited work after an injury	.815	8.148	72.106
4	been involved in incidents or near-misses	.710	7.097	79.202
5	been injured at work	.594	5.938	85.141
6	been sick at work	.451	4.506	89.647
7	failed to report an accident or incident	.330	3.297	92.944
8	failed to consider the possible risks in a particular task	.296	2.959	95.903
9	accepted any work, not minding the danger/risk involved	.235	2.353	98.256
10	failed to wear personal protective equipment (PPE)	.174	1.744	100.000

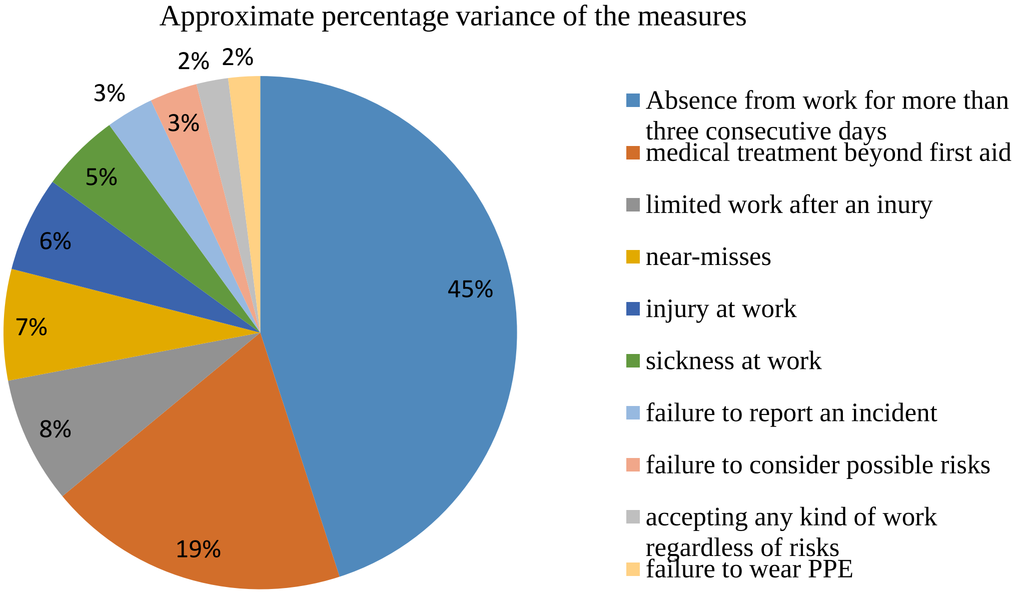

Figure 1: Percentage Variance of the Safety Performance Measures

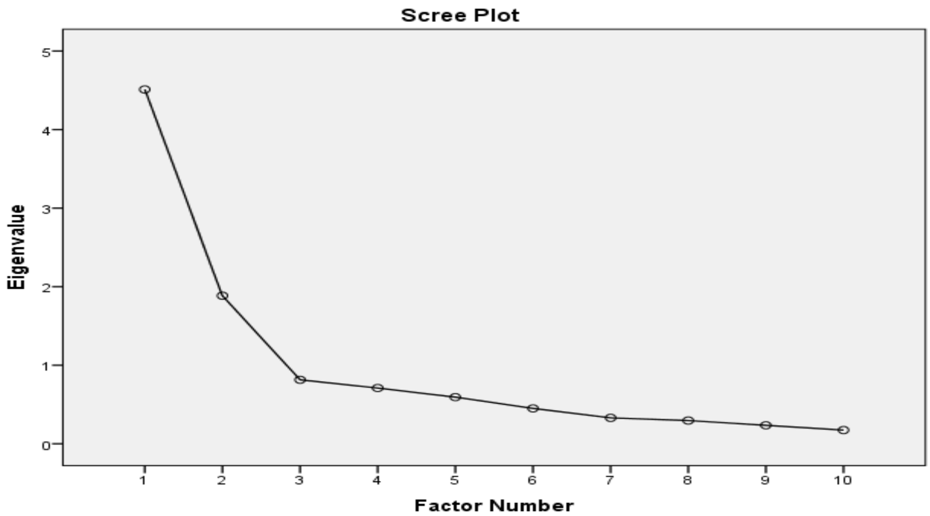

Figure 2: Scree Plot Showing Constructs above the Breaking Point

Table 5: Loading Matrix of the Safety Performance Measures

	Measures	Component 1	Component 2
1	been away from work for more than three days due to an injury	**.946**	-.119
2	been treated medically for injuries (more than simple first aid) on site	**.872**	-.009
3	been asked to do limited work after an injury	**.813**	-.177
4	been involved in incidents or near-misses	**.670**	.011
5	been injured at work	**.651**	.289
6	been sick at work	**.613**	.049
7	failed to report an accident or incident	**.465**	.258
8	failed to consider the possible risks in a particular task	-.073	**.850**
9	accepted any work, not minding the danger/risk involved	-.036	**.704**
10	failed to wear personal protective equipment (PPE)	.124	**.564**

Figures in bold represent the factor loadings

The interpretation of the two components showed that positive measures clumped together and negative measures did the same, consistent with positive and negative schedule scales used in extant literature (Pallant 2013). Hence, the first component with negative items was named lagging indicators, while the second component with positive items was named leading indicators (ICMM 2014). Therefore, a two-factor model emerged from the factorial analysis, as evinced in Figure 3.

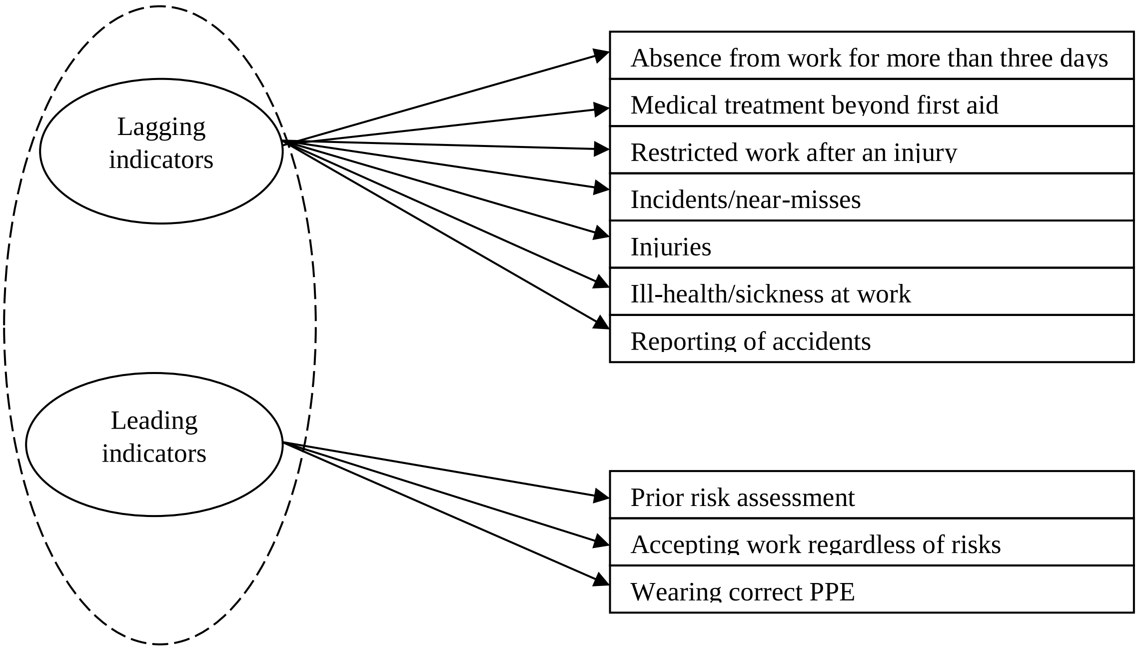

Figure 3: Two-Factor Model of Safety Performance measures

In relation to construction safety performance, general performance measures are leading indicators which provide information that prompt actions to achieve desired outcomes and avoid unwanted outcomes whereas trailing performance measures are lagging indicators that provide safety results, for instance, the extent of worker injuries (Hinze et al. 2013). Differentiating and using both indicators provide a more reliable and accurate measurement of safety performance (Lingard et al. 2013). Leading metrics such as level of risk assessment that a worker might be willing to perform when the opportunity presents itself may be modified by the worker's mental state and if this is poor, probably as a result of unhealthy eating or skipped meals, can lead to the trailing outcomes (such as accidents, near-misses, etcetera). Also, obesity, which could result from poor nutrition, may modify the risk for near-misses and vibration-induced injury (Schulte et al. 2007) and these may go unnoticed for a long time or be mistaken to be as a result of other occupational health and ergonomic issues. Therefore, early identification and management of risky eating behaviours and its consequences should be of great concern.

Leading indicators can be useful in predicting future levels of safety performance, thereby providing information which could guide implementation of interventions to improve and impact positively on the safety process, before any negative (trailing) incidences occur (Hinze et al. 2013). More intensive training programmes and sessions to improve H&S could include nutrition interventions to drive positive change (healthy eating), thereby contributing to a reduction in accidents and injuries due to fatigue, lack of dexterity and acuity (consequence), with the outcome of being able to continue working, and thus improving quality of life and contributing to GDP.

The study provides support to extant literature which advocates the use of both leading and lagging indicators to measure safety performance in the construction industry. Traditional measures of safety, which are after-the-fact measures that assess safety after injuries occur, have a shortcoming in the sense that it bases measurement on failure of the system (Dingsdag et al. 2008; Farooqui et al. 2012). Pre-emptive actions need to be taken before accidents occur. Leading indicators can help to predict safety levels to engender the necessary pro-active measures before the occurrence of accidents. Therefore, leading indicators should ideally be included in assessing worker safety performance levels. This is even more important for assessing construction worker safety performance to reduce the risks associated with working in an inherently unsafe environment. Also, the attitude and behaviour of construction workers with respect to safety is influenced by their trepidations of risk, safety, rules, procedures and management (Masood et al. 2014). Although leading indicators may be cumbersome to collect and measure, may not directly reflect actual success in preventing injury and disease, and may be subject to random variation (Dingsdag et al. 2008), they are increasingly becoming adopted (Lingard et al. 2013; Hinze et al. 2013). Equal consideration should be given to leading measures.

A combination of both classifications to support behavioural changes can lead to sustainable worker safety levels in the long run. The use and adoption of both should be encouraged to drive H&S continuous improvement (Construction Owners Association of Alberta (COAA) 2011).

5. Conclusion

The study sought to explore the underlying structure of safety performance measures. Safety performance was found to be measured by two components. The components had positive and negative safety performance measures, respectively. They were therefore named leading and lagging measures, accordingly. Lagging and leading measures should, therefore, be used to evaluate and effectively manage safety performance of construction workers.

The study provides evidence which could be useful in psychometric evaluation of construction workers' safety performance and behaviours on construction sites. By highlighting safety performance/behaviours of the workers, construction stakeholders could be enabled to make informed decisions regarding improving H&S performance of the workers, and thus improve the productivity, profits and competitiveness in their establishments.

6. Study limitations and further research

The limitations of the current study warrant mention. Firstly, the study was conducted in only one province in South Africa and may not be generalised to workers in the entire country or other countries. Secondly, although the safety performance measures incorporated in the study were observed to relate to the nutrition context, and approved by experts, they are not exhaustive. However, other studies seeking to evaluate the safety performance of workers could adapt and incorporate these measures. Thirdly, the method of data collection was quantitative. More in-depth information could have been elicited with a follow-up qualitative technique such as interviews. Future studies could, therefore, attempt the study using a different approach to extract more information or determine if different results would be obtained.

7. Acknowledgement

This research was supported by the University of Johannesburg through its Global Excellence and Stature Scholarships. The current paper is part of a recently completed Master's study at the University.

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