

The development of a worker engagement maturity model for the improvement of occupational health and safety in construction

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**THE DEVELOPMENT OF A WORKER ENGAGEMENT MATURITY MODEL FOR
THE IMPROVEMENT OF OCCUPATIONAL HEALTH AND SAFETY IN
CONSTRUCTION**

A REPORT

BY THE BEAM RESEARCH CENTRE

DEPARTMENT OF CONSTRUCTION PROCESSES & PRACTICE

SCHOOL OF ENGINEERING & BUILT ENVIRONMENT

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EXECUTIVE SUMMARY

Introduction

The HSE view of worker engagement is that it requires every worker on a construction site to contribute to the improvement of Occupation Safety and Health (OSH). However, there is currently no recognised model of worker engagement maturity for the improvement of construction OSH. The aim of this research was to address this issue through the development of a Worker Engagement Maturity Model. Any such maturity model should be able to evaluate; benchmark and detect any improvement in worker engagement practices. The research objectives were to develop, assess and validate the model using a combination of underpinning theory and real-world data from the lived experiences of front-line construction workers.

Background

The concept of worker engagement is based on psychological conditions of personal engagement and disengagement at work, where employees can use different degrees of their selves physically, cognitively, and emotionally. Workers that are highly engaged are involved and immersed in their jobs and enjoy the challenge, lose track of time, have stronger organisation commitment, expend more effort and are intrinsically motivated.

There are both legal and ethical requirements for management to engage with the construction workforce for the improvement of OSH. HSE Construction Division's 'worker involvement and engagement' initiatives encourage the industry to rise above the minimum legal requirement, moving towards '*best practice*'.

The role of trust and empowerment is vital to engagement. If workers perceive the organisation as trustworthy, it is likely they will reciprocate by becoming more engaged in their work. Empowerment can be seen as a set of four cognitions: 'meaning' (important to the individual), 'competence' (capable and resourced), 'self-determination' (autonomy over working methods) and 'impact' (on wider organisational decisions). Linked to this is 'psychological safety'; being able to raise concerns without fear of negative consequences. Engagement is considered as meaningful when it deals with critical and operational rather than solely welfare issues, to positive improvements rather than negative complaints.

Job resources such as social support from colleagues and supervisors, performance feedback, skill variety, autonomy, and learning opportunities have been positively and consistently associated with worker engagement. Drivers of worker engagement include managements' sincere interest in the wellbeing of workers, strong and transparent organisational leadership and organisational integrity. However, a culture of fear that discourages reporting of concerns, macho approaches to leadership, poor reactive or selfish line management, can all impede successful worker engagement.

The development of the worker engagement maturity model for the improvement of construction OSH for this research considers building **meaningful discussion, empowerment, trust, motivation, and commitment** to cultural change. This is embodied in the following definition of worker engagement for OSH, developed from the literature:

*“A process where every worker on a construction site is **motivated and empowered** to participate in improving health and safety through **meaningful discussions** in advance of decisions being taken, influencing others, and is **committed** to sharing their experiences and knowledge; and managers positively encourage workers to identify and resolve health and safety problems in a culture of **trust**, leading to every worker on site benefiting from safe and healthy working conditions.”*

Method

The five constructs developed from the literature review were compared to real-world data. Qualitative data was collected from eight construction sites across mainland Britain, covering the housebuilding, commercial and civil engineering sectors. A total of 28 ‘engaged’ workers were interviewed using semi structured interviews before saturation of themes was reached. The method used was phenomenological, which involved interview questions asking ‘what and how’ in order to convey an emerging theme where the operatives and working supervisors described their engagement experiences. This enabled the researchers to build themes that were constantly checked against the literature.

Interview data was transcribed and analysed by highlighting significant statements, sentences or quotes that provided an understanding of how the operatives and supervisors experienced the phenomenon. These statements were categorised and ranked in line with the five theoretical indicators. Validation of the framework and ranking (maturity levels) was done through the Steering Group. This was an iterative process using the Delphi method, where all significant statements were allocated to each of the five indicators in hierarchical lists. Each list went through at least three reviews before consensus was reached.

The maturity model’s five indicators were validated using data from 22 workers across 15 sites. Validation workers were classified as either highly (11) or averagely (11) engaged based on specific selection criteria. The results were analysed in relation to these two categories so the rankings in the model could be assessed for their ability to separate average from highly engaged workers.

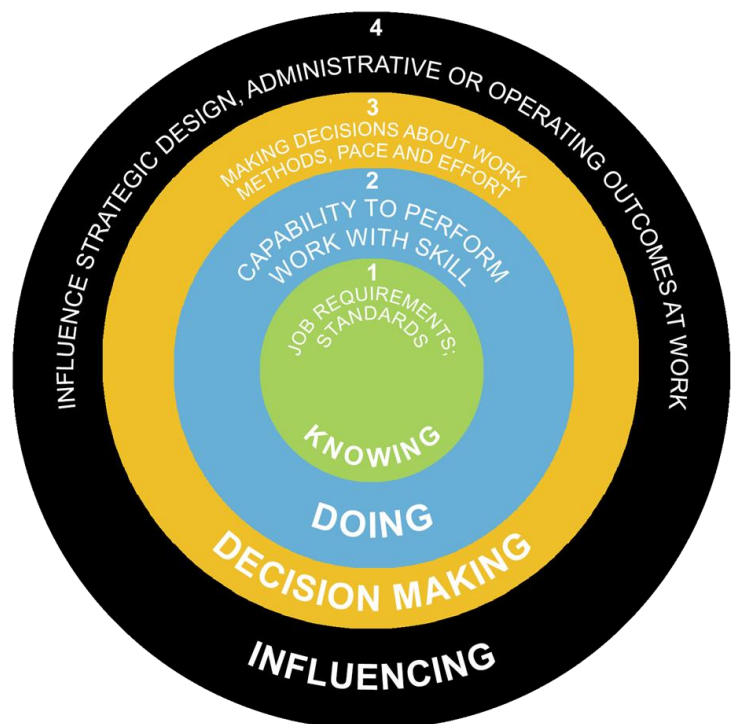
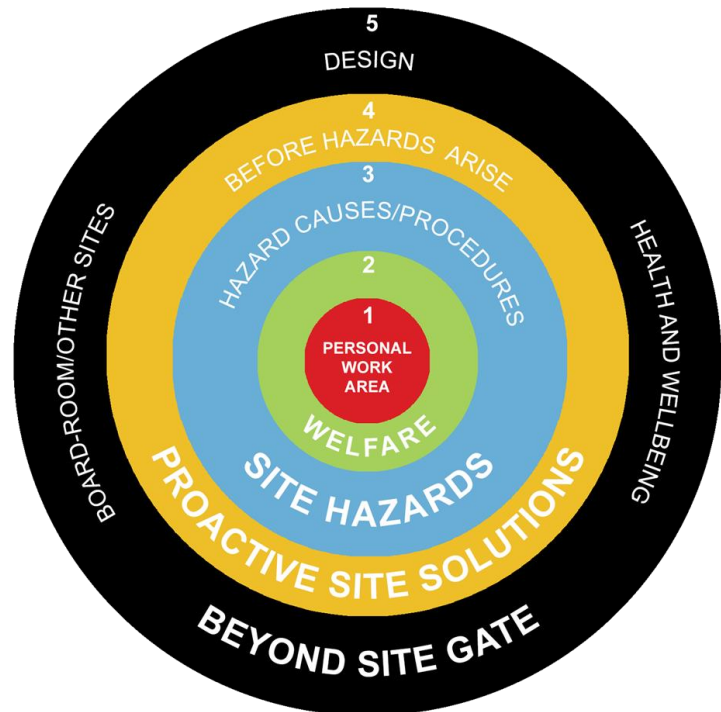
Findings

The five Worker Engagement Maturity Model indicators were developed, based on comparisons between the interview data and the theoretical constructs. This resulted in five sets of hierarchical criteria.

Meaningful discussion has been developed to incorporate the categories: personal work area; welfare; hazard spotting; proactive solutions; and beyond the site gate. Discussion on the workers' personal work area is defined as 'entry-level', which includes PPE issues and hazards involving the workers' tools and tasks. Welfare issues include e.g. toilet facilities, rest and eating areas. Hazard spotting relates to reactive reporting of unsafe acts and conditions. Proactive solutions relate to discussions to actively prevent hazards occurring. Beyond the site gate issues require more effort and are more challenging because they reach beyond the physical site, e.g. policy decisions that affect multiple sites, design aspects or even issues around mental health which go beyond the site.

Empowerment has been developed to incorporate the categories: knowing; doing; decision making; and influencing. Knowing and doing are the first and second steps to competence i.e. knowing standards and safe

systems of work, and then being capable of doing the work safely. This is followed by having authority to decide work pace and methods and finally influencing strategic issues, such as



policy or design i.e. 'beyond the site gate' (as opposed to merely discussing them under the 'meaningful discussion' indicator).

Trust has been developed to incorporate the categories: lack of trust; ability; benevolence; and company integrity. Lack of trust is the result of none of the other categories being present. Ability relates to trust in the ability of other workers to work safely. Benevolence relates to the extent management genuinely cares for worker OSH (as opposed to merely avoiding being sued or fined). Company integrity relates to how a company treats workers regarding OSH e.g. if reporting safety concerns is praised or punished.



Motivation has been developed to incorporate categories: amotivation; extrinsic; and intrinsic. Amotivation means lack of motivation, the worker is not motivated to engage and act in the interests of OSH. Extrinsic motivation is acceptable but relies on factors such as money, promotion or ego. Intrinsic motivation is the most desirable and relies on self-motivation and enjoyment to engage in OSH.



Commitment has been developed to incorporate categories: conditional; compliance; and citizenship (commitment equals behaviour – which distinguishes it from ‘motivation’). Conditional commitment is for self-gain and is variable depending on the conditions i.e. not dependable. Compliance commitment involves conformance to OSH rules (but no more) for mutual benefit, exemplified by reporting an unsafe condition. Citizenship commitment is above and beyond compliance behaviour, is predicated on loyalty and is exemplified by intervening to correct an unsafe condition.



Validation

The maturity model's five indicators were validated using data from 22 workers classified as either highly (11) or averagely (11) engaged based on specific selection criteria. The results were analysed in relation to these two categories so the rankings in the model could be assessed for their ability to separate average from highly engaged workers.

The **five** levels of meaningful discussion indicator were assigned weightings of **20%** each. A total of 16 workers scored 60% or lower and 6 scored above 60% and rated high for this indicator.

The **four** levels of the empowerment indicator were assigned weightings of **25%** each. A total of 11 workers scored 50% or lower and 11 scored above 50% and rated high for this indicator.

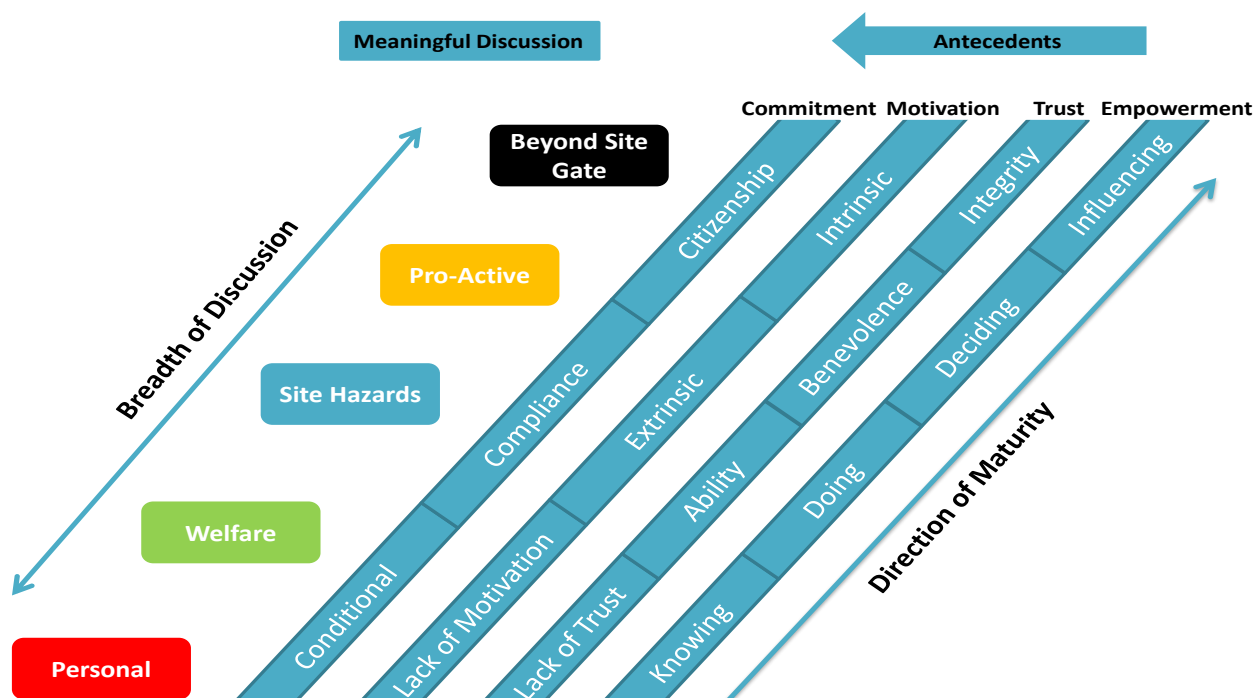
The **four** levels of the trust indicator were assigned weightings of **25%** each. A total of two workers scored 50% or lower and 20 scored above 50% and rated high for this indicator.

The **three** levels of the motivation indicator were assigned weightings of **33.3%** each. A total of 10 workers scored 66.7% and 12 scored above this and rated high for this indicator.

The **three** levels of the commitment indicator were assigned weightings of **33.3%** each. A total of 11 workers scored 66.7% and 11 scored above this and rated high for this indicator.

All highly engaged workers were included in the highest scores for each of the five indicators. None of the 11 workers in the averagely engaged group scored above the 11

highly engaged groups. In two of the five indicators ('empowerment' and 'commitment') the 11 average and 11 highly engaged workers were perfectly identified. All highly engaged workers were included in the highest scores for 'trust' and 'motivation'. The 6 workers scoring above 60% for 'meaningful discussion' were all from the 11 highly engaged group, the remaining 5 scored second top. These results show that even though the phenomenon being assessed is subjective, a strong degree of objectivity has been achieved. The criteria are sensitive enough to distinguish between average and highly engaged workers.



Completed Worker Engagement Maturity Model

Conclusions and Recommendations

The five key worker engagement maturity indicators have been developed with a focus on evaluating the maturity levels of workers as an individual, within a specific project and organisational focus. The expectation was that these five indicators combined together can be used in determining the engagement levels and growth maturity of workers over a period of time.

Meaningful discussion – The level of understanding and the communication of design issues and issues beyond site gate e.g. related to health and wellbeing were rarely considered by site operatives. Although there seemed to be no significant barriers to communication between workers and management; issues that were relevant to design professionals, construction phase plan and contractors were not fully discussed. Meaningful discussions

are taking place but, the level of reach of such discussions needs to go wider and farther and more inclusive of the operatives and supervisors.

Empowerment – The criticism that often comes with decision making is the idea that management is seen as pushing responsibility onto workers, and with it comes liability if things go wrong. The ability to make decisions as an empowered worker includes having control over work pace, and the ability to contribute to the development of risk assessments and method statements in '*partnership*' with management. However, what this validation showed was that workers of the same work team who also share the same manager perceive their sense of empowerment quite differently. This provides managers with useful information on some of the qualities that could be reformed to achieve even greater levels of perceived empowerment on the part of the workers.

Trust – The study indicated that trust between workers and trust for the organisation shows the extent to which the workers are willing to ascribe good intentions to and have confidence in the words and actions of other workers and the company they work for. The results show that some workers perceive some elements of genuine benevolence from management. However, some of their comments did not display high levels of confidence with their managers or supervisors neither do they feel that the management often do what they say regarding OSH. This study identified that judgments of ability and company integrity could be formed relatively quickly in the course of a working relationship; however, benevolence judgments tend to take more time. For managers and supervisors to earn trust, it takes consistency of words and actions over a period of time.

Motivation – This study has shown that some workers are extrinsically motivated for various reasons such as families and money, career progression, delivering on projects etc. However, the more workers are externally regulated the lesser interest, value or effort they will display and the more the tendency of them blaming others such as their managers, supervisors or their colleagues for negative consequences. Workers also consider work related issues of threats; deadlines, directives, and competition pressure as factors that diminish intrinsic motivation because they see them as controlling their behaviours. Monetising motivation for objectives such as productivity needs to be either discontinued or balanced with OSH motivators.

Commitment – The results for the commitment indicator revealed that none of the workers involved in the research showed signs of conditional commitment but rather, the workers displayed compliant or citizenship forms of commitment. This study shows that workers that display compliance commitment will simply obey by doing what is required of them but no more than the legal requirement. Typically, such workers will undertake just enough to keep their role. The workers that displayed citizenship commitment were those that showed the will to go above and beyond compliance; those that proactively promoted safety messages and derived some level of enjoyment and satisfaction from contributing to improving the OSH standards within their organisation. For worker engagement to be truly perceived

within the workplace, and for commitment to thrive, the culture of the organisation plays a significant role. Organisations which assert certain core values but with managers or supervisors clearly undermining those values will result in extensive cynicism, lack of commitment and disengagement within the workforce.

This study has made a significant contribution to the relatively new concept of Worker Engagement for the improvement of OSH. The inclusion of a user guide gives the work an added advantage, in that it can be picked up and used by industry almost immediately. Indeed, a number of contractors who were involved in the study have already requested use of the materials for benchmarking their sites.

It is recommended that the industry guidance be promoted and adopted by the construction industry, by those wishing to benchmark and improve their Worker Engagement practices.

It is also recommended that other industries investigate potential use of the maturity model. The benchmarking aspect and recommended actions for improved engagement practices should ensure it appeals to several other industry sectors, particularly those with extensive industrialised workplaces and/or high risk environments.

The HSE Leadership and Worker Involvement Toolkit (LWIT) can greatly benefit from the findings of this study. A mapping exercise was conducted as part of this study which allows the LWIT guidance to be updated to align with the study's findings.

Continued use of the model for benchmarking purposes will allow refinement of the criteria and question sets. However, it is recommended that a digital tool be developed from the findings of this study which can aid quicker collection of data, but also allow a central database of benchmarking data to be developed to provide feedback, updates and improvements to Worker Engagement practices in the years to come.

Such a central database could be hosted by GCUs Built Environment Asset Management (BEAM) Research Centre, if ongoing funding can be secured.

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CHAPTER 2 INTRODUCTION

RATIONALE FOR MEASURING WORKER ENGAGEMENT FOR THE IMPROVEMENT OF CONSTRUCTION OSH

It is recognised that only by measuring the performance of an activity in a business can that activity be managed and its performance improved, see **(Salazar, 2006)**. However, there is currently no recognised model of worker engagement maturity for the improvement of construction OSH. Any such maturity model should be able to evaluate; benchmark and detect any improvement in worker engagement practices.

The aim of this research was to improve construction industry OSH through the development of a Worker Engagement Maturity Model. The main criterion for the model was 'meaningful discussion'. Meaningful discussion relates to the quality of subjects discussed by workers; i.e. whether it is superficial 'window dressing' or if it relates to real issues capable of significantly improving OSH performance. To achieve the project aim, the following objectives were set:

1. Map the maturity stages a worker goes through in improving OSH engagement;
2. Build a framework to measure progress in engagement;
3. Assess 'meaningful discussion' in relation to OSH engagement;
4. Validate the model and develop user-friendly tool(s); and,
5. Use tools based on the model to assess 'worker maturity' in OSH engagement.

Presently, the key dimensions that indicate the presence of worker engagement in OSH in a construction project organisation are those that show knowledge of, and involvement in risk management and control, proper resource provision, shared learning, effective communications and consistent decision making. Generally, the main methods of benchmarking have been shown to have three forms: *product*, *performance* or *process*. Product benchmarking concentrates on understanding how one product compares with another. Performance benchmarking compares one company performance with another and process benchmarking, which is applicable to the construction project organisation and Health & Safety management, enables work to be viewed as a series of holistic transformation events with identifiable inputs and outputs with its focus on project processes and achievement of outputs against planned milestones or gateways, see **(Cameron, et al., 2004)**.

The key dimensions that previous researchers (**Maloney & Cameron 2003; Lancaster et al. 2001; Shearn 2004**) deem to be measures of effective worker engagement in H&S are:

- Worker involvement in identifying and defining problems and issues,
- Worker participation in decisions, not exclusively via representatives,
- Participant knowledge and know-how (capability, competence and training)
- Participant opportunity and motivation to engage,
- Management commitment, consistency of approach and decision making,
- Management providing an open, blame free environment for constructive dialogue,
- Effective communications, and
- An ongoing process, not a one-off event.

All these can be grouped into three common categories - management structure, individual worker and communication. **Cameron et al. (2006); Lingard & Rowlinson (2005); Shearn (2004), and Lancaster et al. (2001)** have all identified that issues of worker engagement that need to be measured include how risks are controlled and monitored in a fast-paced work environment; the attitudes and behaviours of the main contractor, subcontractor managers and trade workers; the H&S resources available to protect workers and assets (human, financial and physical equipment); the way communications are managed, the consistency of communications and decision making and the way learning about H&S is disseminated around the organisation, and within the industry. These require an underlying management system that effectively provides the environment and support for effective worker engagement.

Worker engagement has been measured using the *Utrecht Work Engagement Scale* (**Schaufeli, et al., 2002**) and the original scale consists of three sub-scales for *vigour, dedication and absorption* (17 items altogether). However, it was important for this research to integrate the worker (operatives and supervisors) engagement maturity model with the already existing organisational maturity model of Leadership and Worker Involvement by the HSE which deals with the culture of the organisation. This further enhances the validity of the developed maturity model specifically for workers – operatives and supervisors. This includes the development of strategies and techniques, delivery outputs and measurement tools that allow for a clear understanding of the different approaches.

CHAPTER 3 LITERATURE REVIEW

INTRODUCTION

The construction industry is one of the UK's most important economic sectors employing 2.1 million workers or 6.2% of the UK population, **(Rhodes, 2015)**. The construction sector is a complex, changing and challenging environment that includes a range of suppliers, producers, building services manufacturers, contractors, sub-contractors, professionals, construction clients, design, build, operation and refurbishment services, construction materials and products. The UK construction workforce is made up of a multi-ethnic mix of races, socio-economic groups and cultures whose first language is not necessarily English.

Across the world, the construction industry has realised that managing people and their behaviours is core to successful, better work-related performance and higher output. Managers appreciate that employees are critical to their accomplishments. Thus, managing people and their behaviour is integral to the success of their organisations. Engaging employees at work is an important element in improving all the outcomes that leads to this success **(Bakker & Demerouti 2008; MacLeod & Clarke 2009)**.

Behavioural safety is considered to be the systematic application of psychological research on human behaviour to the problems of [health &] safety in the workplace **(BSMS, 2017)**. Although behavioural safety initiatives are designed to bring about continual ongoing improvement, it tends to be interpreted as management 'top-down' imposing behaviours on workers and what managers 'believe' is safe behaviour, which is often criticised by Trade Unions as blaming workers. Employees at the same time view behavioural safety initiatives as a convenient way for management to dodge their safety responsibilities and apportion blame to the workforce, **(Cooper, 2001)**. However, worker engagement refers to involvement, commitment, passion, enthusiasm, absorption, focused effort, zeal, dedication, and energy, **(Schaufeli, 2013)**. Worker engagement can be attributed to a 'bottom-up' approach in which the engagement has evolved within the construction practitioner community **(Cameron, et al., 2006)**. This involves workers being empowered and being able to identify management failures. This type of engagement signifies a blend of three existing concepts which are job satisfaction; commitment to the organisation; and extra-role behaviour **(Schaufeli, 2013)**, i.e. discretionary effort to go beyond the job description. Although worker engagement is positively related to work-related attitudes such as job satisfaction, job involvement, and organisational commitment; nevertheless, it seems to be a distinct concept that is more strongly related to job performance.

The concept of worker engagement can be traced to the work of **Kahn (1990)**, based on psychological conditions of personal engagement and disengagement at work by stating that employees can use different degrees of their selves *physically*, *cognitively*, and *emotionally*, while performing their roles, which, in turn, has inference for their work and

experiences. Research continues to highlight the advantages of developing a highly engaged workforce, and therefore, many organisations are turning to enhancing levels of engagement within their influence (**Wollard & Shuck, 2011**). Workers that are highly engaged are involved and immersed in their jobs that they enjoy the challenge (**Staples, et al., 1999**), lose track of time while working (**Gonzalez-Roma, et al., 2006**), have stronger organisation commitment (**Hakanen, et al., 2006**), expend more effort on the job and are intrinsically motivated.

The importance of worker engagement research within the construction industry lies in the perception of its significance in predicting positive performance at work and improvement of construction Occupational Safety and Health (OSH) (**Cameron, et al., 2006**). Most construction workers will support formal organisational goals if they understand how these goals benefit the business, themselves, their fellow workers, its customers, and society as a whole. Therefore, organisations can have a very productive and engaged workforce when the workers are treated humanely and when they grasp these benefits. Workers who are actively involved in the organisation form a key element in the achievement of organisational objectives. Therefore, worker engagement can represent a source of sustainable competitive advantage (**Macey & Schneider, 2008**), and it can make the real difference for an organisation's survival (**Song Hoon, et al., 2012**).

Within the construction industry, some firms still adopt the traditional top-down, tightly controlled management framework that traditionally worked well, but suppressed informal communications. Because of the interdependent nature of both employers and employees in the continuous sharing of ideas and information, adopting this type of tightly controlled management style can be considered as a death knell in today's knowledge age. This is because most of the ideas and innovations are generated by these meaningful collaborative relationships nurtured within emergent systems.

The construction industry needs to place major importance on identifying and improving the organisational engagement where the management (formal) and the workers (informal) overlap, see (**Cameron et al. 2006; ECOTEC 2005**). Under the right conditions, the workers will begin to overlap more increasingly with the management elements of an organization's systems, processes, applied technologies and management structure. This overlapping spot is not reached through any sort of formal negotiation, rather, it is emergent. Consequently, it is within this 'emergent' area of engagement between the management and the workforce that most of the productive work and innovation takes place in most organisations, see (**MacLeod & Clarke, 2009**).

There is also an important element of reciprocity in trust (**Scholefield, 2000**). For workers to be engaged and to reinforce their commitment within an organisation, the concept of reciprocity which underpins employer/employee contract has to be addressed. When an employer invests in worker's wellbeing, the workers feel valued and reciprocate directly

with renewed employer loyalty and by working harder and more efficiently. The investment cost to the employer for helping the worker is repaid in multiples through greater performance levels. This can lead to higher levels of engagement, greater focus on achieving organisational goals and increased motivation at work which can significantly improve mental and physical wellbeing. According to **Ehin (2013)**, this means that for an organisation to succeed, its systems and practices need to have flexible capacity not only to support its organisational/business goals but also the physiological and mental needs of its members. From a management viewpoint, it has been recognised that every worker in an organisation persistently tries to maintain dynamic equilibrium within the social contexts they happen to be immersed in.

There are both legal and ethical requirements for management to collaborate with the construction workforce for the improvement of OSH. This study therefore considers approaches to the development of a worker engagement maturity model for the construction industry that will secure improved OSH performance. Worker engagement is considered as an important aspect of maintaining that corporate knowledge base and of sharing it within an industry. The development of a worker engagement maturity model for the improvement of construction OSH is desirable because the construction industry is a fast-paced changing project organisation where management personnel and subcontractors are peripatetic throughout the various stages of a construction project. For effective worker engagement in health and safety to become the norm, the effectiveness of corporate OSH engagement programmes should be assessed using a valid and reliable tool.

Any worker engagement maturity model for the improvement of construction OSH should be repeatable on different construction sites and projects. Without the ability to measure workers' growth and effectiveness, opportunities to improve construction OSH performance and the potential benefits on construction sites will be lost. A key reference point for the development of a worker engagement maturity model is the HSE Construction Division 'worker involvement/engagement' initiatives; see **(HSE, 2016)**. This is seen as an explicit objective to encourage the construction industry to rise above the minimum legal requirement, moving towards '*best practice*'. The HSE view of worker engagement is that it requires every worker on a construction site to contribute to the improvement of health and safety. This represents a more holistic view of workforce involvement on site.

The work of **Egan (1998)** on 'Rethinking Construction' identifies construction sites as exceptionally busy places where the working environment changes regularly. Also, the construction industry tends to be under resourced, under planned and its workforce undervalued when compared to other industries **(Egan, 1998)**. The potential impacts of these can lead to a crisis management approach to production risk which can severely impact OSH. Therefore, planning which takes into consideration a vast number of activities from pre-construction phase, through design, to planning specific site activities before work

commences can significantly prevent up to 90 per cent of accidents, see **(Cameron, et al., 2004)**.

Construction workers generally work on sites for short durations, changing both physical location as they move and institutional settings as they transfer to a new organisation (even if with the same agency) with a new workforce. Although some long-term work groups that have established specific co-working practices and understanding can be found, for many construction jobs the structure of the workforce varies throughout the course of a project. Because of the dynamic nature of activities that work teams are engaged in, it is therefore unusual for a construction worker to have a permanent contractual agreement and, to be involved in a stable working team.

However, organisations that lack the engagement of their workforce coupled with elements of 'bureaucracy' and 'expert' opinions frequently don't tend to focus on the risks and hazards associated; with the work being performed through policies, procedures and instructions. It is believed that workers who are directly involved in the workplace should be engaged and given the opportunity to share their own views and opinions in matters related to improvement of the workplace and performance **(Hummerdal, 2015)**. This is a view supported by the work of **Baucus et al. (2008)** where they show that worker's creativity resident in them are mostly suppressed as a result of lack of support from the management and bureaucracy.

Shearn (2004) listed three arguments for including the workforce in decision-making and planning for OHS. These include possible improvements in psycho-social and organisational development; possible productivity and efficiency gains; and, ethical and legal imperatives **(Shearn, 2004)**. The review carried out by **Burnham (2009)** highlighted that the historical view (management perception) regarding worker accidents indicates that workers are influenced by their own careless nature and that their lack of attention is further complicated by their physical or mental deficiencies. However, a large body of evidence suggests that such behaviour is inevitable if management commitment and safety culture is weak, **(Cooper 2002, 2001; Zohar 2000, 1980, 2002)**. This act of worker carelessness and lack of attention relates to human factors and this is an expected occurrence, i.e. '*to err is human*'. From the 'improved social learning' perspective, participation is seen as a problem of efficiency **(Shearn, 2004)** and participation has the potential to increase productivity and efficiency and this can be realised through innovative behaviour **(Shearn, 2004)**. **Spector (1986)** also identified that employee participation can be related to higher motivation and performance, fewer intentions to quit, and lower employee turnover. **Shearn (2004)** also argued that ethical and legal imperatives are 'a given' in that workers should be included in decision making at work. It is acknowledged that a common strategy that aligns worker and management's interests can reduce conflict within employment relationships and is a feature of any democratic society. The Health & Safety Executive Board's collective declaration on worker involvement states that a consulted and involved workforce,

contributing to improved health and safety, is a cornerstone of a civilised society (**HSC, 2004**).

Organisations are made up of workers whose capacity goes above and beyond the roles and responsibilities that are assigned to them. Every organisation comprises a bundle of (more or less constrained) an intelligent, knowledgeable, collaborative, passionate, creative, innovative workforce with the capability of improving, detecting, and assessing ambiguous environments; optimising cutting edge technology that hasn't yet been fully understood; carrying out work under competitive pressures to do more with less; caring about colleagues; speaking up; and lending a helping hand. Organisations should be able to utilise these available resources to realise their intellectual, emotional and creative potential, see (**Hummerdal, 2015**). In this sense, the question that needs to be asked is not how people can be the solution; but rather, how come that the potential of people are so often ignored, rejected and even despised regarding OSH?

RELATED WORKER ENGAGEMENT LEGISLATIVE REQUIREMENTS

Safety Representatives and Safety Committees Regulations 1977 (as amended)

The Safety Representatives and Safety Committees Regulations 1977 covers safety representatives that are appointed in accordance with section 2(4) of the Health and Safety at Work etc. Act 1974. It includes agreed cases where recognised trade unions may appoint a safety representative from among employees and agreed function of safety representatives; see (**HSE, 2014**). Section 2(6) of the Act necessitates employers to consult with safety representatives with a view to the making and maintenance of arrangements that will enable the employers and their employees to co-operate effectively in promoting and developing measures to ensure the health and safety at work of the employees, and in examining the effectiveness of such measures.

The Health and Safety (Consultation with Employees) Regulations 1996 (as amended)

Employee consultation in health and safety is a legal requirement under the Health and Safety (Consultation with Employees) Regulations 1996. In addition, where there are employees that are not represented by safety representatives under the 1977 Regulations, the employer is mandated to consult with those employees in good time on matters relating to their health and safety at work. In particular, with regard to introducing any measure at the workplace which may significantly affect the health and safety of those employees; the employers should make arrangements for appointing or, as the case may be, nominating persons in accordance with regulations 6(1) and 7(1)(b) of the Management of Health and Safety at Work Regulations 1992. The employer is required to provide to those employees any health and safety information under the relevant statutory provisions; the planning and organisation of any health and safety training the employer is required to provide to those

employees; and the health and safety consequences for those employees for the introduction (including the planning thereof) of new technologies into the workplace; see **HSE (2014); Trades Union Congress (2015)**. These Regulations are only applicable to any employee not represented by representatives under the Safety Representatives and Safety Committees Regulations 1977 if their union is not recognised; if recognised trade unions have not appointed representatives or they are not about to; or if employees do not belong to a trade union.

Under the Safety Representatives and Safety Committees Regulations 1977, recognised trade unions have the powers to appoint the health and safety representatives (called 'safety representatives' in the Regulations). The 'safety representatives' have a much wider range of powers than the 'representatives of employee safety' under the Health and Safety (Consultation with Employees) Regulations 1996 (as amended). The union appointed safety representatives can call for the setting up of a health and safety committee, they are entitled to be consulted about the appointment of competent persons under Regulations 7(1) of the Management of Health and Safety at Work Regulations and the appointment of competent persons to implement emergency procedures under Regulations 8(1).

The Management of Health and Safety at Work Regulations 1999

These regulations require employers to provide employees with information on the arrangements made to address 'serious and imminent danger' and danger areas. Employees should be provided with information on the nature of the hazard and the measures taken to protect the employees from it. Employers must also provide employees with information on: health and safety risks identified in the risk assessment process; the preventive and protective measures established; emergency procedures; and health and safety risks that have been notified to the employer. Where more than one employer is involved, co-operation and co-ordination is required and in relation to construction sites, these in effect extend management responsibilities to senior management and even, on occasions, the client.

The Construction (Design and Management) Regulations 2015

Regulation 14 of CDM 2015 places duties on the Principal Contractor to consult and engage with workers. The Principal Contractor must make and maintain arrangements to enable the Principal Contractor and workers engaged in construction work to cooperate effectively in developing, promoting and checking the effectiveness of measures to ensure the health, safety and welfare of the workers. The Principal Contractor should also consult workers or their representatives in good time on matters connected with the project which may affect their health, safety or welfare, in so far as they or their representatives have not been similarly consulted by their employer.

CDM 2015 requires the Principal Contractor to allow workers or their representatives to inspect and take copies of any information which the Principal Contractor has, or which these Regulations require to be provided to the Principal Contractor, which relate to the health, safety or welfare of workers at the site. Excluded of these regulations are any information that relates to the disclosure of which would be against the interests of national security; which the Principal Contractor could not disclose without contravening a prohibition imposed by or under an enactment; relating specifically to an individual, unless that individual has consented to it being disclosed; the disclosure of which would, for reasons other than its effect on health, safety or welfare at work, cause substantial injury to the Principal Contractor's undertaking or, where the information was supplied to the Principal Contractor by another person, to the undertaking of that other person; and lastly, obtained by the principal contractor for the purpose of bringing, prosecuting or defending any legal proceedings.

Improving worker involvement – Improving health and safety (CD)

The Health and Safety Commission (HSC) published a Consultative Document (CD) in 2006 entitled "Improving worker involvement – Improving health and safety"¹ (HSE, 2006). The purpose of this document was to re-emphasise the need for worker involvement and elicit views from industry on how to encourage more and better engagement.

Although the Companies Act 1985 does not impose any obligation to consult employees, it however requires employers with an average number of 250 employees or more to include their consultations in the directors' annual report. It is therefore reasonable to imply that for organisations with more than 250 employees, a degree of worker engagement is necessary for compliance with The Companies Act 1985. The form that this engagement takes and the extent to which it is given credence is open to interpretation.

THE ROLE OF TRUST AND PSYCHOLOGICAL EMPOWERMENT IN WORKER ENGAGEMENT

Research shows that worker engagement has many positive job outcomes such as job satisfaction and performance (Gruman & Saks 2011; Schaufeli & Salanova 2007), active coping style (Storm & Rothmann, 2003) and creativity (Bakker & Xanthopoulou, 2013). Given these significant contributions to organisational success, it is crucial for researchers and practitioners to comprehend the factors that lead to worker engagement. Engagement has been associated with a wide range of positive job outcomes, however, studies have not focused on the contributing roles of psychological empowerment on worker engagement, even when trust on the organisation and empowerment have been found to be vital in many positive job attitudes (Shockley-Zalabak et al. 1999; Fedor & Werther 1996; Scholefield 2000). So, understanding the role of *trust* and *empowerment* is vital to generating positive job attitudes such as engagement. It is suggested that workers will reciprocate positive job attitudes and behaviours when their relationship with employer is

¹ <http://www.hse.gov.uk/consult/condocs/cd207.pdf>

established on social-exchange principles. Therefore, if workers perceive the organisation as trustworthy, it is likely they will reciprocate trust by becoming more engaged in their work.

Although **Conger & Kanungo (1988)** defined empowerment as the motivational concept of self-efficacy, it was **Thomas & Velthouse (1990)** who argued that empowerment is complex and that its principle cannot be captured by a single concept. They offered a broader definition of empowerment as increased intrinsic task motivation manifested in a set of four cognitions reflecting an individual's orientation to his or her work role - *meaning, competence, self-determination and impact*.

Meaning is associated with the value or importance of the task goal or purpose, judged in relation to the individual's own ideas or standards reflecting a fit between the requirements of a work role and a person's beliefs, values and behaviours (**Thomas & Velthouse, 1990**). *Competence* is an individual's belief in his or her capability to successfully perform activity with skills (**Spreitzer, 1995**) while *Self-determination* reflects authority over the initiation and continuation of work behaviours and processes, which involves making decisions about work methods, pace and efforts (**Thomas & Velthouse 1990; Spreitzer 1995**). *Impact* refers to the degree to which an individual can positively influence organisational outcomes.

Further to the direct effect of empowerment on worker engagement, it is expected that psychological empowerment could as well moderate the relationship between trust and engagement in such a way that workers who are psychologically empowered will be more engaged irrespective of the level of organisational trust. For example, trust has been found to explain why some workers effectively complete their jobs and also go above and beyond the call of duty in their work with no notable reward. This effect is very close to the concept of 'workers going the extra-mile' which is representative of engaged workers (**Schaufeli & Bakker, 2010**).

Kahn (1990) also elaborated on three psychological conditions (*meaningfulness, safety and availability*) that affect an employee's engagement or disengagement. '*Meaningfulness*' is the feeling that a worker is receiving something in return for his giving on the job, such as tasks, roles and interactions. **Kahn** referred to '*safety*' as a worker being able to show and work without fearing negative consequences to one's status at work and this is influenced by interpersonal relationships, groups and intergroup dynamics. '*Availability*' refers to one's possession of the physical, emotional and psychological resources needed on the job. The future of the construction industry depends on the behaviours of the workers and management need to create an atmosphere of trust that empowers their employees psychologically for them to bring out their best in favour of the organisations. Worker engagement is an extremely delicate phenomenon, both challenging to develop and tough to sustain (**Kahn, 2010**).

Worker engagement fosters the wellbeing of employees and this necessitates investing some time, money and effort in social activities intended to encourage a sense of belonging, a team culture and a sense that there is a psychological contract between employer and employee, not just a transactional one. Workers that are psychologically empowered through engagement have higher degrees of performance, motivation, job satisfaction and commitment, while reducing job-related stress. Worker engagement should be seen as an ongoing, ceaseless challenge for everyone in the organisation, helping people get the best out of themselves, making them grow, and creating a working environment which is flexible and encourages great work and innovation.

DRIVERS OF WORKER ENGAGEMENT

Bakker & Demerouti (2007) and **Schaufeli & Salanova (2007)** have shown that job resources such as social support from colleagues and supervisors, performance feedback, skill variety, autonomy, and learning opportunities have been positively and consistently associated with worker engagement. Job resources refer to those physical, social, or organisational aspects of the job that may reduce job demands and the associated physiological and psychological costs; be functional in achieving work goals; and stimulate personal growth, learning, and development (**Bakker & Demerouti 2007; Schaufeli & Bakker 2004**). Job resources are assumed to play either an intrinsic motivational role because they foster workers' growth, learning and development, or an extrinsic motivational role because they are instrumental in achieving work goals. Supportive colleagues and performance feedback increases the likelihood of being successful in achieving work goals.

Research suggests that engagement is positively related to good health, and this infers that engaged workers are better able to perform well; see (**Hakanen et al. 2006; Schaufeli & Bakker 2004**). Therefore, engaged workers who communicate their optimism, positive attitudes and pro-active behaviours to their colleagues are more likely to create a positive team climate, independent of the demands and resources they are exposed to. This suggests that engaged workers influence their colleagues, and consequently, they perform better as a team. Thus, worker engagement can be classified as: '**expressive engagement**' which enables workers to express themselves by sharing experiences with others and '**collaborative engagement**' which enables workers to work together to achieve common goals through interactive and social processes. However, an obstacle to achieving worker engagement is that employer-employee relationships are under tremendous pressure and employers are expected to implement the three principles of openness (*transparency, participation, and collaboration*) in a relatively short period of time over the project timeline. Failure of management to have an open initiative towards transparent, participatory and collaborative engagement with workers can have serious consequences such as monetary loss, damaged reputations, and reduced worker trust on management.

Empowering leadership in which leaders empower workers to make decisions and pursue objectives on their own was found to facilitate worker performance and satisfaction, and to suppress dysfunctional worker resistance (**Vecchio, et al., 2010**). Although there are some questions regarding the utility of empowerment in public service settings, it however suggests that it merely reflects the ability of leaders to effectively engage followers. **Pitts (2005)** and **Vecchio et al. (2010)** found clear evidence of empowerment's positive effects in hierarchical leadership dyadic relationships. In an organisation with high-quality engagement relationships, leaders exchange strategic advice, social support, feedback, decision-making freedom, and opportunities for stimulating and high-visibility assignments with workers. The workers in return respond with high levels of involvement, including commitment to the leader and cooperation in the group's tasks, which enhances the effectiveness of the leader, see (**Sparrowe & Liden, 2005**).

The traditional hierarchical, leader-centric leadership theories differ significantly from collaborative engagement. **Crosby & Bryson (2010)** describe the essential nature of integrative leadership in addressing cross-organisational challenges, and prescribe trust, joint commitment, vision, and stakeholder support as hallmarks of successful collaborative leadership and engagement. Transformational leadership and servant leadership using empowerment, meaningful work, emotional intelligence, and mindfulness can be used as tools to enhance worker engagement, productivity, and commitment, as well as to effectively communicate goals, vision, and culture. The construction industry can experience and benefit from marked improvement in the worker's morale through commitment to leadership based upon a core set of values and a constructive leadership philosophy of inclusion and networking. According to **Berwick (2003)**, engagement involves a workforce that is imaginative, inspired, capable and joyous, invited to use their minds and their wills to cooperate in reinventing the system itself. **Berwick's (2003)** effective leadership, using the tri-partite principles of values-based authentic leadership, relationship-based transformational leadership, and shared or distributed leadership creates opportunities for enhanced worker morale, which in turn facilitates improved worker effectiveness and performance.

Therefore, the drivers of worker engagement are managements' sincere interest in the wellbeing of workers; and extent to which workers believe that they have improved their skills and capabilities over the course of time. These are related to a strong and transparent organisational leadership; engaging managers; an effective and empowered employee voice and organisational integrity, (**MacLeod & Clarke, 2009**).

FACTORS THAT IMPEDE WORKER ENGAGEMENT

Organisational and health and safety cultures fall short of encouraging workers to engage due to *fear* of not being able to handle the perceived complexity of OSH and regulatory issues; and in some cases due to 'macho' approaches to carrying out work. Research has

identified time and cost as issues, particularly in smaller, more resource constrained organisations where involvement with trade associations or industry support bodies is not taken up. The work of **Lingard & Rowlinson (2005)** found this to be true for construction organisations. Age and experience also seem to be factors as older workers are generally unwilling to change the way they have worked for many years. Studies carried out by **Maloney & Cameron 2003; Cameron et al. 2006; and Hare et al. 2006** consistently identify access to information to be a barrier, along with ability, or capability to engage. Issues of poor leadership and lack of awareness of the concept of worker engagement inevitably leads to poor management practice, with line managers failing to engage their staff, **(MacLeod & Clarke, 2009)**.

In any organisation where there is no requirement for engagement, poor line management can quickly kill off enthusiasm and poor management skills in dealing with people is often associated with many of the factors of disengagement. Therefore, joint and consequential failure of leadership and management are contributory causes of poor worker engagement, **(MacLeod & Clarke, 2009)**. Within the UK construction industry, role overload, production demands, formal procedures, and workforce characteristics are considered as some of the factors hindering supervisors' engagement with the workforce in OSH. Also, having a workplace culture that discourages reporting of concerns for fear of victimisation e.g. workers being sent off site for raising concerns, hinders worker engagement.

Ensuring that workers are performing to their full potential is how organisations will secure their competitive advantage. This is because investment in workers is imperative for delivering the business strategy, and shareholders are beginning to look for evidence for this. However, the issue seems to lie in management's unwillingness to truly relinquish command and control styles of leadership in favour of a relationship based on mutuality. Some organisations tap into what they want from workers as a result of worker engagement (high performance) but they don't tap into what's in it for the worker who go the extra mile.

Other widespread managerial and organisational cultural factors hindering worker engagement are reactive decision-making by management which fails to identify and address problems in real-time (proactive); inconsistencies in management styles based on the attitudes of individual managers which can lead to perceptions of unfairness; lack of flexibility in communications and knowledge sharing procedures founded on rigid communication networks or established cultural norms; lack of senior management visibility and inadequate downward communication; poor work-life balance due to long work hours culture, see **(MacLeod & Clarke, 2009)**.

BENEFITS OF WORKER ENGAGEMENT

For workers to be involved there needs to be some degree of input from workers in the decisions that affect them and a degree of control from such workers over decisions

affecting them (**Cameron, et al., 2006**). The benefits of worker engagement in OSH management are not only improvements in OSH performance and reduced frequency and severity of accidents and incidents, but also an improvement in business efficiency and productivity as well as improved trust, motivation, commitment, morale and corporate image. Engagement can also promote and strengthen social learning. Inclusion of the workforce enables fuller discussion of issues, which has the effect of ensuring that more options and assumptions are questioned and tested. Management can then take into account the knowledge and experience of workers and this contributes to increased efficiency; increased openness; meaningful discussion; and more effective risk controls being developed. Several studies have shown that worker engagement predicts various indices of performance such as the quality of service perceived by customers, better performance of the organisational units, customer loyalty, profit, lower sickness absence levels, high voluntary employee turnover and productivity (**Bakker & Demerouti 2007; Salanova et al. 2005; MacLeod & Clarke 2009**).

Therefore, some of the key benefits of worker engagement include:

- Improved worker commitment (**Cameron et al. 2006; Lancaster et al. 2001**);
- Improved health and safety performance due to the responsive nature of management and workers to health and safety issues (**Cameron et al. 2006; Lancaster et al. 2001**);
- Improved business performance (**Cameron et al. 2006; Lancaster et al. 2001; MacLeod & Clarke 2009**).

These key benefits of worker engagement are mutually dependent (**Cameron, et al., 2006**). Worker engagement can also inspire union membership (**Walters, et al., 2005**) however; Trade Union presence does not guarantee reduced accidents (**Cameron, et al., 2006**). Worker engagement also allows more integrated management of a mix of projects at different phases of development (**Rasmussen, et al., 2006**).

EVOLUTION OF WORKER ENGAGEMENT

Over the years, the literature on worker engagement has evolved from '*participation*' (**Lancaster, et al., 2001**), through '*involvement*' (**ECOTEC, 2005**), to '*engagement*' (**Cameron, et al., 2006**). This evolution reveals the increased interest in communication, knowledge sharing, and shared decision-making regarding occupational safety and health practices within the construction industry. Therefore, worker engagement is perceived as a concept that necessitates the participation of workers at all levels in an organisation with risk control and management responsibilities. It comprises attitudes to risk, behaviour, knowledge and capability to engage. It requires the commitment of management towards providing resources and effective communications, coupled with an open and 'no blame' environment

in which problems are resolved through consultation and the use of shared knowledge and learning.

Within the construction industry, worker engagement has been studied with respect to workers spotting hazards and reporting injuries. Various studies (**Gherardi et al. 1998; Bell & Phelps 2001; Shearn 2004**) confirmed that this has led to a reduction in accidents but reflect that management taking the initiative and providing experienced resources, or encouraging feedback from workers about a range of matters, have been the key contributors to those statistics (**Cameron et al. 2006; Hare et al. 2006**). The increased trust, openness and commitment that these approaches engender can change the degree of engagement and the desire to be involved.

The depth of engagement according to (**Cameron, et al., 2006**) is found to depend upon a range of factors including: the nature and scope of issues covered, the scope and objectives in developing solutions to H&S issues, i.e. proactive/prevention or reactive/recovery, the ability of workers to understand accident causation, empowerment to seek appropriate resource and knowledge about the issue and how to resolve it. Therefore, engagement is considered as meaningful when it deals with critical and operational rather than solely welfare issues, to positive improvements rather than negative complaints. It requires empowerment and autonomy and the knowledge and capability that underpin them (**Maloney & Cameron, 2003**). Engagement is when employees are committed to the organisation's goals and values, motivated to contribute to organisational success, and are able at the same time to enhance their own sense of wellbeing. The goal of worker engagement is to generate an emotional commitment to improving work and safety processes within the construction industry. The term engagement is however different from consultation, involvement and participation as it involves the emotional commitment of those who are engaged. Greater autonomy requires greater levels of worker competence and the quality of decisions, at all levels, can be seen as an indicator of the quality of engagement.

The Health and Safety Executive (HSE) considers consultation as management giving information to employees as well as listening to and taking account of what they say before making health and safety decisions. Participation or involvement relates specifically to the level of worker involvement in decision making from zero to full. Therefore, participation or involvement can be defined as the measure of worker influence. It does not infer power equalisation with those that appear more qualified or the management. However, worker engagement is where all workers, not just employees, have the opportunity to influence both management and other workers' decisions. In general terms, this has shown that workplaces where management engage with workers are safer than those where they don't.

Consultation involves employers not only giving information to employees but also listening to and taking account of what employees say before they make any health and safety decisions. **Shearn (2004)** however, did not distinguish between consultation and participation but **Maloney & Cameron (2003)** see participation and involvement as the same thing, but separate from consultation, in that the key issue is who makes the decisions. They stated that it comes down to a manager's use of authority in making and implementing decisions versus the freedom to make decisions exercised by subordinates. The Safety Representatives and Safety Committees Regulations 1977 require consultation with union safety representatives in good time on matters relating to their health and safety at work (**HSE, 2014**).

HSG263 (2015) identified worker engagement as a consultation process where management give information to the workforce (inclusive of supply chain and sub-contractors) or employees and they in turn acquire feedback from them before making decisions. The development of a worker engagement maturity model for the improvement of construction OSH for this research considers the implementation of soft skills which deals with building **meaningful discussion, trust, empowerment, motivation, commitment** and cultural change which are essential for improving construction OSH performance. This is because workplace accidents and ill health are invariably linked to the complex social and organisational cumulative factors which simple investigations cannot uncover the failings neither do they prevent it; see (**Lukic, et al., 2013**).

Since worker engagement is linked to performance improvement and workplace productivity, it is vital to understand the link between poorer health and wellbeing (mental and physical) and lower motivation and engagement at work. Productivity is dependent on workers performance and their contributions are essential to the success of the construction industry. As a result, worker productivity and decreasing workplace injuries and illnesses can be influenced by engaging them in their physical work environment; mental wellbeing at work; by the management showing fairness, participation and trust; line manager's role, leadership styles and training; and also job design. The integration of effective workplace interventions of health protection and promotion, a psychologically healthy workplace and a profitable and sustainable business can be achieved.

The definition developed for the purpose of this research builds on the existing, but includes factors identified in the wider literature search, which includes meaningful discussion, empowerment, trust, motivation and commitment. The current definition therefore considers worker engagement as:

"A process where every worker on a construction site is motivated and empowered to participate in improving health and safety through meaningful discussions in advance of decisions being taken, influencing others, and is committed to sharing their experiences and

knowledge; and managers positively encourage workers to identify and resolve health and safety problems in a culture of trust, leading to every worker on site benefiting from safe and healthy working conditions."

ENGAGEMENT PARADIGM

Research on engagement is relatively recent, and there is still debate whether engagement should be practically differentiated from other related existing concepts. It is known that worker engagement, above and beyond the contractual requirements set out by management, is always required to produce results. Worker engagement initiatives do little to change the control structures or the physical lay-out of organisations, but instead, it plays a key role in how workers are encouraged to think about and visualise reality. Engagement then does not change organisations in a physical sense, rather it works to locate, inform and legitimise managerial activity. In this way, the concept of worker engagement serves not to reduce managerial control, but to facilitate and extend this control through the manipulation of norms and values. By reforming attitudes, managers and workers can help to reform organisations.

Kahn (1990) began with the basis that employees can use different degrees of their selves *physically, cognitively, and emotionally*; selves-in-roles adjusted by the individuals while performing their roles, which, in turn, has inference for their work and experiences. **Kahn** also elaborated further on three psychological conditions (*meaningfulness, safety and availability*) that affect an employee's engagement or disengagement. Other than the three mentioned dimensions, **Kahn's** studies led to the identification of engagement as a multidimensional construct with three dimensions, namely: *vigour, dedication and absorption* (**Kahn 1990; Schaufeli et al. 2002; Wollard & Shuck 2011; Shuck & Wollard 2010**).

A worker who feels great vigour while working is highly motivated by the content of the job (**Mauno, et al., 2007**). **Shuck & Reio (2013)** agree that vigour signifies high levels of energy and mental resilience while working and the willingness to invest effort in one's work, and persistence in the face of difficulties is considered to be the most overt form of worker engagement. Dedication is characterised by a strong psychological involvement in one's meaningful work and by a sense of significance, enthusiasm, inspiration, pride, and challenge (**Schaufeli, et al., 2002**). The notion of dedication appears to be closely linked to the organisation and shares similarities with the concept of commitment (**Mauno, et al., 2007**). This notion of dedication is synonymous to emotional engagement and denotes the emotional connection one feels toward his or her place of work (**Shuck & Reio, 2013**). Absorption signifies the general level of happiness and the degree to which a worker becomes engrossed in a task and loses track of time (**Song Hoon, et al., 2012**). Absorption is considered as the cognitive dimension of engagement (**Shuck & Reio, 2013**).

However, these three dimensions of worker engagement show some differences. Dedication is more organisational focused; vigour is more job-related; and absorption is more tasks related. While dedication and vigour imply a degree of identification with one's own organisation and job, vigour and absorption involve directing energy and effort towards the job and the task. **Maloney & Cameron (2003)** identified engagement as a behaviour about which people make a conscious choice. A worker can decide to be engaged or choose not to be engaged. As such, the critical issues are: the factors that influence a worker's decision as to whether or not to become engaged; and how those factors influence that decision. This issue can be examined in the context of the following relationship proposed by **Maloney & Cameron**:

Engagement = f (Opportunity, Capability, Motivation)

Engagement is a behaviour characterised by taking part in a process that includes activities such as evaluating a situation, analysing alternatives, selecting a preferred alternative and providing feedback. To be engaged, a worker must have that opportunity and only management can create the opportunity for worker engagement. Therefore, management's creation of opportunity is a function of management's belief in the role of management and who should make decisions; the capability of workers to make a serious contribution to the matter at hand; and the desire of workers to be engaged. For management to create engagement opportunities, it must believe that it should not unilaterally make decisions; but that the workers to be potentially engaged have the qualifications in terms of education, training, skill, knowledge and experience to be effective and make a serious contribution to the decision making process; and that the workers who could potentially be engaged have the desire to be engaged. It is crucial that workers perceive that there is that opportunity for engagement.

Capability refers to a worker's possession of the knowledge, skills, and abilities pertinent to a specific task. Capability is developed through observation, formal and informal training, education, and experience. It can be assessed by reviewing certificates obtained through the completion of training courses or programs, such as the Construction Skills Certification Scheme and formal assessments. Managerial perceptions of capability are based upon external assessments listed and their observation and interaction. Worker perceptions are based upon their assessment of the issue and their knowledge, skills, and abilities.

Motivation is considered in relation to behaviour because it addresses the desire or willingness to engage in that behaviour. The question of motivated to do what, must always be considered because motivation is intangible and the best evidence of motivation is effort. The expenditure of *mental* and *physical effort* is the evidence of motivation and the greater the effort expended, the greater the motivation. Motivation is a function of the workers' belief in what they will obtain in expending the effort and as a result of the effort. Workers that are highly motivated feel in control or feel more powerful, competent and

high in self-efficacy and such workers are intrinsically motivated to perform their jobs, (**Hudson, 2007**). However, **Hudson (2007)** also stated that these feelings may be biased based on unrealistic optimism or illusion of control. A workforce that is typically engaged would be expected to have workers that are intrinsically motivated due to their awareness which include the requirements for feelings of control, personal and collective efficacy.

Maloney & Cameron (2003) therefore concluded that these three factors need to be present before workers will decide to become involved - *opportunity, capability* and *motivation*. Opportunity can be seen as the mechanism for instigating communication between workers and managers, such as daily briefings. However, **Maloney & Cameron** believe meaningful discussions will only take place if workers possess capability, i.e. training, experience and knowledge, and motivation. Intangible benefits thought to motivate workers in this respect may include increased knowledge, respect from their peers and even possible enhanced employment opportunities. Also, **Maloney & Cameron** believe that the perceived benefits of engagement must outweigh any loss in earnings as a result of getting involved i.e. lost production time.

WORKPLACE SPIRITUALITY AND WORKER ENGAGEMENT

Human spirituality in terms of worker engagement refers to the part of the human being seeking fulfilment through self-expression at work. It is believed that for the human spirit to be fulfilled and succeed at work, individuals must be able to wholly engage themselves emotionally, physically and cognitively in their work, (**May, et al., 2004**); also see (**Kahn, 1990**). It is also suggested that engagement is both humanistic and practically important, (**May, et al., 2004**). For example, the expression of emotion at work should facilitate engagement in work and make the connection with others at work more meaningful, (**Kahn, 1990**). Engagement also involves the physical energies employed by individuals towards accomplishing their roles (i.e. bringing self into a role) and the experience of total cognitive absorption.

Given the diversity of the construction workforce, research has identified perceived benefits to an organisation for encouraging issues of workplace spirituality as this has been linked to improved individual intuition and creativity (**Freshman, 1999**); increased honesty and trust within the organisation, i.e. better organisational performance through accelerated decision making, better communication between managers and workforce, greater innovation (**Wagner-Marsh & Conely 1999; Burack 1999**); increased commitment to organisational goals (**Delbecq 1999; Leigh 1997**); and improved sense of personal fulfilment of workers mental growth, development and increase in problem solving capabilities (**Burack, 1999**). Although workplace spirituality will not be fully reviewed in this context, however, the definition or views of workplace spirituality predominantly speaks about some power originating from the inside, and this involves a feeling of being connected with one's work and with others (**Ashmos & Duchon, 2000**), which is in fact the essence of engagement.

The spiritual paradigm recognises that people work not only with their hands, but also with their hearts and spirits (**Ashmos & Duchon, 2000**). It is when workers work with a committed spirit that they can find a kind of meaning, purpose and fulfilment and the workplace can become a place where people can express their whole or entire selves. Within the workplace, spirituality can be meaningfully interpreted at both the individual and the organisational levels (**Kolodinsky, et al., 2008**). At the individual level, spirituality can be seen as an affective and cognitive experience: a worker feels and believes in a spiritual connection to work and the workplace. At the organisational level, spirituality can be seen as a reflection of spiritual values that forms part of the organisation's culture and thus used to inform behaviour, decision-making, and resource allocation (**Kolodinsky, et al., 2008**). Spirituality is viewed as something that originates from the inside of the individual i.e. '*our inner consciousness*' (**Guillory, 2000**). **Grabber (2001)** identified spirituality as an inner search for meaning or fulfilment that may be undertaken by anyone regardless of religion or one's religious affiliations. A workplace without spirituality according to **Thompson (2000)** can eventually result in high worker absenteeism, high employee turnover, high stress associated with work deadlines and depression.

Organisations such as Hewlett-Packard, Ford Motor Company, Tom's of Maine (**Burack, 1999**), AT&T, DuPont, and Apple Computer (**Cavanagh, 1999**), had programs that brought spirituality to the workplace. AT&T sent their middle managers to three-day development programs that helped the managers to better understand themselves and better listen to their subordinates (**Cavanagh, 1999**). The central features in many spiritual quests are the pursuit of self-knowledge and ability to listen rather than control. Hewlett-Packard built spirituality in the workplace through a company philosophy that emphasises the values of trust and mutual respect, which in turn are believed to contribute to cooperation and sharing a sense of purpose (**Burack, 1999**). Trust is crucial in providing a sound base for commitment (**Kruger & Hanson, 1999**).

Naylor et al. (1996) however identified that workers that are involved in jobs that are repetitive and boring can often find no meaning in their daily jobs and this can lead to existential sickness; the lack of meaning or purpose of work can also lead to separation or alienation from oneself, and this can greatly reduce the productivity of such worker and result in worker frustration.

CO-WORKER AND WORKER-SUPERVISORY ENGAGEMENT

The focus on worker-to-worker and worker-to-supervisory relationships instead of the broader organisational relationships is important because worker to worker experiences create a significant developmental setting for workers and a catalyst for worker engagement. According to **Rubin et al. (2006)**, experiences gained from peers affect social, emotional and cognitive functioning. Interpersonal relations among workers that is supportive and trusting of each other foster psychological safety (**Kahn, 1990**) and such

interpersonal trust is based on either cognitive or affective trusts. *Cognitive-based trust* concerns the reliability and dependability of others while *affective trust* is based on emotional relationships between individuals leading to concern for the welfare of each other. **Edmondson (1996)** found that the quality of relations in work units impact on workers' shared beliefs in terms of whether mistakes would be held against them (psychological safety). Co-workers who support each other at work have mutual respect for one another; value each other's contributions; engender trust and heightened perceptions of psychological safety and engagement. Within these settings, a worker acquires a range of behaviours, skills, attitudes, and experiences that influences their adaptation within the workplace. These set of values, attitudes, beliefs and behaviours commonly shared by a group of people all fall under the all-reaching umbrella of culture.

Worker-to-worker interaction within a workplace is a dyadic behaviour, i.e. worker's actions are interdependent such that each worker's behaviour is both a response to, and stimulus for, the other worker's behaviour. There is a belief that that the level of closeness of co-workers is determined by the frequency and strength of influence, the diversity of influence across different behaviours, and the length of time the relationship has endured (**Rubin, et al., 2008**). In a close relationship, e.g. workers that have been working together over a period of time, influence is frequent, diverse, strong and enduring. Long term direct workers working together have some degree of reciprocal influence over one another e.g. cohesiveness, some degree of unity and inclusiveness, hierarchy, homogeneity, and norms. The significance of worker-to-worker relationships is that their dyadic relationships do not depend or vary in membership size, for example, a loss of a single member can disrupt the dyad's existence. Also, worker-to-worker relationships are voluntary and not obligatory or prescribed, it is based on the provisions of friendship, acceptance and popularity. However, group relationships and interactions tend to be segregated along the sex or racial lines; see (**Killen, et al., 2002**).

When workers interact, it fosters a sense of belonging leading to a stronger sense of social identity which emerges as meaningful. Workers feel 'safe' when they perceive that they are not going to be ill-treated for expressing their true selves at work. In such a safe environment, workers tend to understand the boundaries that surround acceptable behaviours as compared to unsafe conditions where situations are ambiguous, unpredictable and intimidating. **Geller et al. (1996)** on the concept of '*actively caring*' refers to workers caring about their co-workers to the extent that they actively promote safe behaviour, monitor the environment for hazards, and intervene whenever necessary to ensure safety. This concept of active caring among co-workers is associated with groups' cohesiveness, supervisor support, co-worker knowledge of team members and group orientation. If the dominant attitude held by each co-worker is to care about each other, then there should be a reduction in workplace hazards with each worker actively identifying, removing or warning others of potential hazards.

Supervisory to worker behaviour and relationship that is based on support and trust are most likely to produce feelings of safety at work (**May, et al., 2004**). This is because the relationship with an immediate manager can dramatically impact on a worker's perception of the safety of a workplace. It is important to nurture the worker-supervisor/manager relationship given that lack of engagement is central to the problem of worker's lacking commitment and creativity to their work or motivation (**May, et al., 2004**). When workers are treated with dignity, respect and value for their contributions and not simply as occupants of a role, this can lead to a sense of meaningfulness from their interactions, (**May, et al., 2004**). This type of engagement reduces detachment from one's work and restores meaning and worker's motivation to work. Providing meaningful work to individuals that brings about personal fulfilment, personal growth and motivation can be perceived as benefits of worker empowerment and engagement.

Supervisors who foster a supportive work environment typically display concern for the needs and feelings of their workers, provide positive feedback and encourage the workers to raise concerns, develop new skills and solve work related problems. The availability of such support to workers enhances their self-determination and interest in their work by initiating and regulating their own actions. These set of workers are likely to engage more fully, initiate novel ideas of executing a task, discuss mistakes and learn from these behaviour in such supportive work environments. Supervisory supportiveness of the workers' self-determination and corresponding perception has been linked with the enhancement of trust, (**Britt, 1999**). According to **Whitener et al. (1998)**, five categories of behaviour have been linked with workers' perceptions of managerial trustworthiness: *'consistency of behaviour across time and context; behavioural integrity i.e. consistency between words and deeds; sharing and delegation of control i.e. participation in decision making; communication (accuracy, explanations and openness); and demonstration of concern i.e. protecting workers' interest and abstaining from exploitation'*.

Supervisory and worker engagement can also be a useful way of recognising and resolving issues of stress and psychosocial risks in the workplace. When workers and managers are fully engaged, it can lead to the creation of an environment of trust where workers feel much more comfortable to raise their concerns thus improving worker morale. Engaging the workforce can help in preventing stress by identifying the root causes and eliminating them through openness, trust, blame-free culture and rehabilitation of workers that are suffering from work related stress. The end result will be lower absence of workers, improved performance and service delivery, healthier workforce, lower accident rates and better worker relationships.

FOREIGN WORKERS AND WORKER ENGAGEMENT

It is estimated that the UK construction industry is made up of approximately 8% of foreign workers (**Hare, et al., 2013**) employed on short term contracts and data by the **Centre for**

Corporate Accountability (2009) estimates that 17% of the total UK construction workforce fatalities are associated with foreign workers. The use of images or pictographs to improve safety communication has been generally adopted over the years by different organisations like healthcare (**Delp & Jones 1996; Leiner et al. 2004**); construction (**Tam et al. 2003; Arphorn et al. 2003**) and also, engaging foreign construction workers in OSH issues (**Hare et al. 2013; Cameron et al. 2011**).

Research by **McKay et al. (2006)** on worker engagement in construction found that language and communication difficulties associated with non-English-speaking workers in the industry is a problem and with obvious implications for the management of OSH. Their study recommended that detailed study of methods of communicating with non-English speaking foreign workers be conducted to ascertain how these language barriers can be overcome. **Bust et al. (2008)** however identified that the strategies adopted by companies to overcome these communication and engagement barriers e.g. organising workers that speak the same language into small crews with an English speaking leader to act as an interpreter; buddying with same nationalities that speaks English; onsite translators and using pictorial methods of communication have their own limitations. Although some researchers have identified that hazard communication is best carried out using a combination of text and well-designed pictorial symbols (**Kalsher et al. 1996; Wilkinson et al. 1997; Cameron et al. 2011**), the successful use of pictographs in efficiently communicating construction OSH to foreign workers has been inconclusive.

The UK construction industry is still dealing with the challenges of engaging foreign workers and tackling issues of OSH amongst workers. Also, there is no established evidence that supports the impact and effectiveness of communicating these OSH initiatives and if foreign workers are actually engaged or understand the training they have been involved. **Hare et al. (2013)** suggested that the use of visual images or pictograms should not be substituted for existing OSH communication, but as a supplement to leverage safety. This is because the inability to immediately communicate with foreign workers via the spoken word on construction sites represents one of the major barriers to successfully engaging with these workers on issues of OSH (**Bust, et al., 2008**).

Hare et al. (2013) further suggested that developing effective methods of communication is an essential starting point for foreign workers, and that using '*safety critical*' words and phrases supported by pictographs would be a highly advantageous tool which the construction industry should consider. Merely providing training will not guarantee improved safety behaviour but evaluating the understanding of the foreign workers is an important requirement (**Hare, et al., 2013**), as this is a significant factor in most theoretical models of communication. **Tutt et al. (2013)** also identified that using the bottom-up approach designed to investigate lateral communication practices (between workers themselves) is vital rather than just vertical communication (from managers to workers), which is often the conventional and adopted model by the industry.

LEADERSHIP & COMMUNICATION

The two most important leadership styles relevant to worker engagement are the participative leadership style & instrumental leadership style. The participative leadership style is considered as a non-directive form of role-clarifying behaviour which is gauged by the extent to which leaders allow subordinates to influence decisions by requesting input and contribution (**Ogbonna & Harris, 2000**). This type of leadership style affects individuals through feed-forward learning (**Bucic, et al., 2010**). It favours innovation and creativity and, furthermore, represents one of the most effective practices for ensuring employee development. The instrumental leadership style is similar to directive or transactional leadership that measures the extent to which leaders specify expectations, establish procedures, and allocate tasks (**Ogbonna & Harris, 2000**). The instrumental leadership style implies feedback learning manifested through the refinement of an individual's cognitive dimension and the reinforcement of organisational routines, process and structure (**Bucic, et al., 2010**).

On some construction sites, there are deficiencies in the level of mutual understanding between different project stakeholders as well as close coordination and communication. This is because there are significant barriers to communication between clients, design professionals and contractors, on one hand; and with sub-contractors and workers, on the other. Site inductions are clearly considered as a critical point for the communication of health and safety information between management and the workforce. However, the opportunities for two-way communication that relates to the mechanisms that are required to impart information to workers and elicit their views in a systematic, but not necessarily formal manner is not always available. The ability of informal communication developing into a safe and healthy culture as well as gaining workers views cannot be overstated.

Ideally, consultation requires two-way communication and the form of participation or involvement can be measured in terms of its impact on decisions. Worker engagement goes a step further by requiring all workers on site to be engaged with the main contractor with the impact on decisions extending beyond management decisions, to those of the workers. Research specifically looking at communication and participation in construction found that the most commonly adopted approaches to worker involvement were: *identifying and resolving health and safety problems (hazard spotting); risk assessment; accident investigation; equipment design and selecting PPE and equipment*. These are more effective if involvement is on a voluntary basis as this ensures ownership (**Lancaster, et al., 2001**). In addition, the most common forms of communication are health and safety training; induction training; tool-box talks; health and safety meetings; notice boards; and newsletters. These forms of communication are considered more effective if they are two-way, lateral and involve all stakeholders including sub-contractors.

Leadership consists of setting up some mechanism in the first instance to facilitate worker engagement as well as their support; encouraging training and personal development and

allowing time on site for the process. For effective worker engagement, communication must be 'two-way' or 'top-down and bottom-up' between management and workers. The key issue becomes the impact on decisions of both management and workers, i.e. the ability for workers to influence management and management to influence workers. Therefore, successful methods of engagement should result in better-informed and improved management and worker decisions. Although, in reality, many other factors will influence the final outputs but measuring these can give indicative results. Targeting successful communication and the influence on decision making are two important areas to focus on to gain useful insight on the subject of the effectiveness of any individual approach to worker engagement.

However, to sustain these positive outcomes, leadership will be required if and when workers begin to respond to requests to be engaged. This type of leadership that is required to sustain worker engagement will need to demonstrate that workers views are being taken seriously and have influenced decisions made by management. With regard to managers, there is an added need to complement health and safety training with communication skills training, especially 'soft skills' required for informal communication, **(Cameron, et al., 2006)**. Therefore, assessing specific workers abilities and attitudes regarding communication is crucial before implementing a potentially expensive, but superficial initiative **(Jensen, 2002)**.

The encouragement of regular dialogue (meaningful discussions) helps the worker to understand the organisation and its issues. Workers feel they have a valid contribution to make, feel valued and more committed when their ideas and suggestions are utilised. This produces a virtuous cycle of greater engagement over time, where joint problem solving and increased awareness of issues prevail. Openness and trust can flourish in this type of environment and communication becomes increasingly effective and cooperative. **Lingard & Rowlinson (2005)** identified that a more open communication model is appropriate for managing OSH communications in construction projects and for this to occur, the industry's culture of communication based on contractual relationships must be overcome, and communication channels opened up between project participants with a role or interest in OSH. These may include clients, designers, suppliers, subcontractors, workers and their trade union representatives.

TRAINING, LEARNING & FEEDBACK

Training has also been identified as a key factor in facilitating worker engagement, by bringing about increased competence and capability to contribute to improvement of OSH **(Maloney & Cameron 2003; Cameron et al. 2006; Hare et al. 2006)**. This involves how learning is shared within the project organisation or the construction industry; how expertise is retained or passed on and how much workers know about/are engaged in how this is done. This includes how the organisation is configured to learn from both failures and successes; the scope of learning/ training provision; open minded or closed minded learning

– OSH as career or leadership parameter and introverted versus extroverted learning – local, company or industry wide.

There is a widely shared assumption that feedback positively impacts performance. Several researchers that have reviewed feedback intervention have recognised that they have highly variable effects on performance, such that in some conditions performance improves, while in other conditions feedback intervention have no apparent effects on performance, and yet in others, it hinders performance, (**Hurlock & Montague 1982; Driskell et al. 1992; Gibbs & Simpson 2004; Sadler 2010**). Interaction can lead to improvement in knowledge distribution and acquisition throughout any organisation or project team. However, feedback from workers can be used to check management performance, increase productivity, efficiency and motivation levels as well as lower workforce turnover. A major principle of worker engagement is to provide the workers with clear expectations and feedback to have an engaged workforce (**Garber, 2007**). There is no general specification regarding feedback on good performance, but what workers resent is the idea that poor performance is not properly addressed and managed or differentiated from good performance. What is advocated is differentiating performance, i.e. good, and especially exceptional, performance should be recognised and that feedback needs to be commensurate with the contribution.

TRADE UNIONS & SAFETY REPRESENTATIVES

There is a dearth of research on worker engagement specific to the construction industry. However, the TUC recognises that engagement could be of significant benefit to workers when properly done; see (**MacLeod & Clarke, 2009**) and if workers were to engage constructively and put in discretionary effort. Therefore, workers would need to be given the opportunity to put their views to their employers and be assured that their views would be at least heard, if not acted upon. Although individual engagement between managers and workers are important to build the necessary trust between workers and employers, workers should be allowed and encouraged to express their views through independent collective representation e.g. safety representatives that are appointed by trade unions to represent their members (and occasionally the entire workforce) on occupational health and safety issues. According to the Union of Construction, Allied Trades and Technicians (UCATT) now merged with Unite the UNION; there is evidence that workplaces with Safety Representatives and joint union - management safety committees have far less injury rates than workplaces without safety representatives.

UNITE recognises that the presence of a trade union voice in the workplace can help boost important aspects of engagement. It is accepted that in the best interests of both the business and its workers, a close working relationship based on meaningful consultation and mutual trust be nurtured and continuously developed between the trade unions and management. Research has also shown that workplaces with health and safety committees

where some members are selected by unions have significantly lower rates of work-related injury than those found in workplaces with no co-operative health and safety management².

There seems to be some support for the view that worker engagement in OSH is more effective within workplaces where trade unions provide support for workers. Broadly, positive findings of research about the positive impact of safety committees in enhancing the effectiveness of worker participation schemes can, however, be skewed by the relatively narrow body of research; see **(Walters, et al., 2005)**. The sites with trade union influence are generally big sites and these big sites tend to be safer because they have a more holistic OSH plan than smaller sites. Could this be due to trade union influence on these big sites or is it just coincidental, see **(Cameron, et al., 2006)**?

Interestingly, the research regarding safety representatives from Ireland where the role is very informal found that the presence of safety representatives had the strongest relationship with safety compliance. This was attributed to their informal lines of communication; hazard reporting; and their strong informal disciplinary role. The perspective of safety representative according to **(Duff et al. 1993; Robertson et al. 1999)** has a definite negative view of direct worker engagement which is seen by many as integral to behavioural safety as well as wider safety culture issues **(Reason 1998; Blismas & Lingard 2006)**. It is only through direct worker engagement that a 'just culture' can be developed to engender the trust and openness that is conducive to such good practices as workers reporting near misses, identifying hazards, and making recommendations. Research has also shown that the benefits of worker involvement in OSH are perfectly feasible in non-unionised workplaces. However, in most cases, it is likely to follow the employer's agenda and be confined to the implementation end of the spectrum rather than anything approaching joint planning and collaborative decision-making.

Union safety representatives within the workplace are much more likely to be empowered to set agendas and be challenging. Soft skills such as communication, trust, honesty, pragmatism, analytical and evaluation skills have also been identified as key qualities of a safety representative. Soft skills alone are however insufficient in isolation, and effective health and safety representatives also require 'hard' skills, i.e. the technical competence to fulfil their roles and undertake investigation. A further category of 'firm' skills, which incorporates organisational/planning skills, the ability to be systematic and to recognise other people's perspectives are identified as key to being a good safety representative.

² <https://www.ucatt.org.uk/safety-representatives>

CHAPTER SUMMARY

The concept of worker engagement is based on Kahn's psychological conditions of personal engagement and disengagement at work, where employees can use different degrees of their selves physically, cognitively, and emotionally. Workers that are highly engaged are involved and immersed in their jobs and enjoy the challenge, lose track of time, have stronger organisation commitment, expend more effort and are intrinsically motivated.

There are both legal and ethical requirements for management to engage with the construction workforce for the improvement of OSH. HSE Construction Division's 'worker involvement and engagement' initiatives encourage the industry to rise above the minimum legal requirement, moving towards '*best practice*'. The HSE view of worker engagement is that it requires every worker on site to contribute to the improvement of OSH. This represents a holistic view of workforce engagement on site.

The role of trust and empowerment is vital to engagement. If workers perceive the organisation as trustworthy, it is likely they will reciprocate by becoming more engaged in their work. Empowerment can be seen as a set of four cognitions: 'meaning' (important to the individual), 'competence' (capable and resourced), 'self-determination' (autonomy over working methods) and 'impact' (on wider organisational decisions). Linked to this is 'psychological safety'; being able to raise concerns without fear of negative consequences. Engagement is considered as meaningful when it deals with critical and operational rather than solely welfare issues, to positive improvements rather than negative complaints.

Job resources such as social support from colleagues and supervisors, performance feedback, skill variety, autonomy, and learning opportunities have been positively and consistently associated with worker engagement. Drivers of worker engagement include managements' sincere interest in the wellbeing of workers, strong and transparent organisational leadership and organisational integrity. However, a culture of fear that discourages reporting of concerns, macho approaches to leadership, poor reactive or selfish line management, can all impede successful worker engagement.

The development of a worker engagement maturity model for the improvement of construction OSH for this research considers building **meaningful discussion**, **empowerment**, **trust**, **motivation**, and **commitment** to cultural change. This is embodied in the following definition of worker engagement for OSH, developed from the literature:

"A process where every worker on a construction site is motivated and empowered to participate in improving health and safety through meaningful discussions in advance of decisions being taken, influencing others, and is committed to sharing their experiences and knowledge; and managers positively encourage workers to identify and resolve health and safety problems in a culture of trust, leading to every worker on site benefiting from safe and healthy working conditions."

CHAPTER 4 DESIGNING THE WORKER ENGAGEMENT METHODOLOGY

INTRODUCTION

Qualitative studies use an emerging qualitative approach by collecting data in a natural setting, sensitive to the people and places under study, and data analysis that is both inductive and deductive which establishes patterns or themes, **(Creswell, 2013)**. The type of qualitative research most suitable for the development of the worker engagement maturity model involved using inductive and deductive logic. The inductive process involved working back and forth between the themes emerging from interviews and information from literature until a comprehensive set of themes was established. This involved the researchers collaborating and interacting with frontline workers such as operatives, supervisors and industry experts involved in the research to shape the themes emerging from the process. The use of deductive rationale enabled the researchers to build themes that were constantly being checked against the literature.

The specific type of qualitative design useful for the worker engagement research was the phenomenological research design normally associated with philosophy and psychology whereby the researcher describes the lived experiences of the individuals about a phenomenon as described by the participants, **(Creswell 2009; 2014; Marshall & Rossman 2016; Creswell & Poth 2017)**. Phenomenological study is an approach that describes the lived experiences of a concept or phenomenon for single individual or several individuals, **(Creswell, 2013)**. This type of description concludes in the core of the experiences for multiple individuals that have all experienced the phenomenon. Phenomenological research design is based on strong philosophical underpinnings and it involves conducting interviews, see **(Giorgi, 2012)** as it describes the common meaning for several individuals of their lived experiences of a concept or a phenomenon such as worker engagement. The focus was on participants (construction frontline workers i.e. operatives and supervisors) describing what they all have in common in their experiences of being engaged in relation to OSH at work.

This research process kept focus on learning the meaning that frontline workers brought into the issue of worker engagement and not the meaning that the researcher intend to or bring into it. Because this was an emergent research design, it was not firmly prescriptive and changes and amendments were incorporated in the course of collecting data e.g. adapting the questions, pattern of data collection, the number of frontline workers and number of construction sites visited during the course of the study. This was important as the key concept behind adopting the qualitative study approach was to learn about the development of a worker engagement model from the workers themselves by obtaining relevant information using best practices. The use of quantitative study was considered not exclusively suitable and did not fit the problem for this type of research involving interactions among groups of workers and individual differences of workers. This is because the complexity of interactions between individual operatives and supervisors cannot be

levelled to a statistical mean that overlooks their uniqueness for the study. Therefore the qualitative approach was considered a better fit for this research.

SAMPLING

Construction sites for the sample were representative of the geographical spread of construction work across mainland Britain, resulting in eight sites being chosen. Getting access to the different construction sites and frontline workers was facilitated by members of a research Steering Group. Every site where interview data was collected from had a gatekeeper to ease the interview process. A purposeful sampling strategy for construction sites and workers was utilised, selecting from a pool of site options made available via the research Steering Group. These sites included house building to large scale civil engineering projects and workers from a pool of site options available across the UK. These are sites where both operatives and supervisors are considered to be actively engaged in their health and safety activities and where their opinions or recommendations are deemed to be given due consideration and implementation.

Phenomenological researches typically range from three to ten participants (**Creswell, 2014**). However, this research conducted twenty-eight (28) in-depth semi-structured, face-to-face, non-leading and open-ended interviews with operatives and supervisors until the themes being investigated reached saturation, (**Charmaz, 2014**). This was when the information that was being recorded during the course of the interviews no longer sparked or revealed new insights, (**Creswell, 2014**). The interviews lasted from 20 to 60 minutes, with each individual interview an average of 40 minutes. However, **Guest et al. (2006)** based on an experiment conducted with a data set determined that 12 interviews were ideal in achieving saturation, which was not the case in this study. The interview process involved audio recording (Sony MP3 IC Recorder) of the frontline workers and note taking on sites which was transcribed verbatim by five (5) Administrative Support staff of the School of Engineering and Built Environment at GCU. All the transcribed notes from the support staff and the audio recorded interviews were further reviewed and validated by the researchers to establish it was a true account of the interviews conducted.

DATA COLLECTION

SPECIFIC DATA COLLECTION AND RATIONALE

Conducting a qualitative research involves determining the specific research methods that includes the type of data collection, analysis and interpretation needed for that specific research. Implementing a phenomenological inquiry involves a range of possibilities of data collection predetermined by either the type of interview or the use of nonnumeric data analysis, (**Creswell 2009; 2014; Marshall & Rossman 2016; Creswell & Poth 2017**). The researchers initially began by reviewing and gathering detailed information on worker engagement from literature and then formed these into themes to a generalised model. These themes were further developed into specific patterns or generalisations that emerged inductively from interviews and analysis focused on the personal experiences of the

frontline workers. These enabled the researchers to attempt building the essence of experience from operatives and working supervisors and their suggestions of varied end points based on the central phenomenon of worker engagement.

It is pertinent to clarify that employers were not deliberately asked for 'disengaged' workers as this can lead to prejudice and discrimination within the workplace. Rather, the research chose to work with the terms 'highly' and 'averagely' engaged workers within the following context: a highly engaged worker is someone who has won health and safety awards; (or) actively contributes to health and safety discussions, committees or initiatives; (or) a health and safety champion; (or) show enthusiasm for health and safety matters when you speak to them. An averagely engaged worker is as any other worker that fulfils their work role or duties but needing support to develop in their OSH initiatives; health and safety discussions; supporting them to be pro-active about OSH behaviours; and enhancing their capability to influence their colleagues. The researchers implemented explicit open-ended, non-directive questions during the interview. This allowed for emergence of new themes, patterns and interpretations from the operatives and supervisors involved in the interview process and the text and audio recordings transcribed and interpreted to determine emerging patterns or themes from the data collection. This research recorded operatives and supervisors meanings by focusing on the phenomenon of worker engagement; studied the context of the operatives and supervisors; and validated the accuracy of the research findings by involving members of the steering group whilst making interpretations of the interviews.

The researchers made visual presentations of the deductive 'working' model developed from the extant theories and the categories of information acquired from interviewing the operatives and supervisors. The idea of implementing deductive reasoning was to work from the more general to the more specific concept of worker engagement; "top-down" approach; see **(Trochim, 2005)**. This was necessary because the focus of data collection was on operatives and supervisors who have experienced worker engagement as a phenomenon and to develop a composite description of the essence of the experience for all operatives and supervisors. The frontline workers and construction sites involved in the research had no physical disruptions from the interviews carried out. The timing of the interviews per participant was mutually agreed (averagely 40 minutes) and the researcher clearly reminded the operatives and supervisors regarding the instructions, and purposes of the interview were clarified once more.

SEMI-STRUCTURED INTERVIEWS

The phenomenological study is distinct from conducting a survey or questionnaire. The researchers asked the frontline workers to describe their worker engagement experiences without directing or suggesting their description in any way. However, the researchers did encourage the workers to give a full description of their experience, including their thoughts, feelings, along with a description of the situation in which the engagement experience happened. Wherever the researchers thought more clarity was needed, the

workers were required to describe that with follow up questions without the researcher suggesting or leading the worker.

The interview assessment was used to identify and develop a framework for the worker engagement maturity model for construction workers. Primarily, eligibility for participation in the research was voluntary but emphasis was laid on involving engaged operatives and working supervisors, i.e. those that attend H&S committee meetings or part of H&S briefing before the start of a shift; or those that informally liaise with managers discussing H&S issues and whose opinions or recommendations are taken on board. These were individuals who have all experienced the phenomenon in question, thus allowing the researcher to forge a common understanding in the end. These operatives and supervisors were chosen from a pool of organisations that voluntarily agreed to partake and involve their workforce in the research. The interviews assessed the operatives and working supervisors' description of their engagement which were filtered into constituent themes on the basis of their relevance to a wide range of workers. The researchers were interested in mapping the emerging issues and how they aligned with the themes of *meaningful discussion, empowerment, trust, motivation and commitment* of engaged workers (identified in the earlier literature review). However, these key themes were not included in the interview questions to avoid leading the participants as this would have introduced some elements of bias. The expectation was that the opening question should trigger subsequent questions that will require clarifications or tangible examples from the participants. This would likely elicit their descriptions of engagement and the growth levels. Participants were assured of absolute confidentiality and the data for this study safely stored in an encrypted device.

The central phenomenon that this research explored was the issue of improving construction industry OSH through the development of Worker Engagement Maturity Model. The development of the interview questions required the researchers asking an icebreaker question at the beginning to set the scene followed by sub-questions. The interview questions took the form of 'what and how' format in order to convey an open and emerging theme where the operatives and working supervisors describe their engagement experiences.

PROCEDURES FOR RECORDING INFORMATION DURING INTERVIEW PROTOCOL

DATA ANALYSIS PROCEDURES

The analysis of phenomenological research data is based on the principle of using an emergent strategy which allows the method of analysis to follow the nature of the data from the interview. The focus of the researcher was to have a deeper understanding of the meaning of the description from each individual frontline worker by getting at the essential meaning of their experience without going beyond the evident meaning.

The analysis of phenomenological research data can be structured in several ways: thematically, analytically, exemplificatively, exergetically, existentially, and inventing an approach; (**van Manen, 1990**). The data analysis was carried out by carefully analysing the

interview transcriptions and highlighting significant statements, sentences or quotes that provided an understanding of how the operatives and supervisors experienced the phenomenon – called *horizontalization*; (Moustakas, 1994). The researchers further developed *clusters of meaning* from these significant statements into themes; their alignment with extant literature and categorised them using Nvivo10 for Windows useful for evaluating, interpreting and explaining social phenomena (QSR International, 2014). Nvivo10 is useful for analysing unstructured or semi-structured data sets like interviews, surveys, field notes, and journal articles which made it suitable for this study.

Initial categorisations of statements extracted from the interviews with frontline workers were based on the framework developed for assessing the maturity levels of workers. The rankings of the statements from operatives and supervisors extracted from the interviews went through an iterative process with expert focus groups using Delphi technique.

The Delphi technique is a widely used method for data gathering from teams of experts designed as a group communication process with the aim of achieving convergence of opinions e.g. as used during the ranking of statements from the operatives and supervisors; see (Hsu & Sandford 2007; Hasson et al. 2000). The Delphi technique has been implemented in various fields of study for example planning, policy determination, exploring or exposing underlying assumptions and needs assessment. This therefore made it a useful tool for this study in the development of the engagement framework and maturity model because of its best fit for building consensus through multiple iterative processes from expert panels (Steering Group). Members of the Steering Group were issued explicit instructions regarding the ranking exercise (ranking/placing statements higher or lower to each other depending on which category they belonged to) and a 48 hours turnaround for each phase of the ranking exercise was circulated via email. A total number of six out of ten active Steering Group members responded over the three iterative stages of the ranking phase until a consensus was established for each engagement category (later titled as 'indicators'), i.e. **meaningful discussions, empowerment, trust, motivation and commitment**. It is essential to state that the Delphi technique characteristically has its flaws of low response rate which was considered during the design and implementation stages of the research.

The data analysis embraced diversity by discussing favourable and unfavourable results regarding the participants or researchers inclinations. This is achieved by disclosing the full range of findings, even those that were contradictory to the proposed themes. There was no need to disclose identities of participants (data protection), and pseudonyms were be used. The significant statements and themes were used to write a '*textural description*' of what sort of engagement the operatives and supervisors experienced. These statements were also used to write a description of the context or setting that influenced how the operatives and supervisors experienced the phenomenon called '*imaginative variation*' or '*structural description*'. Based on the structural and textural descriptions, the researchers

embarked on writing a composite description presenting the 'essence' of the phenomenon called the essential, invariant structure (or essence) towards improving construction industry OSH through the development of a Worker Engagement Maturity Model.

This research used the approach of combining emerging and predetermined themes during the data analysis (**Creswell, 2014**) rather than using only predetermined themes based on the theory of worker engagement under examination. Whatever themes emerged was taken as the major findings and these displayed multiple perspectives from the individuals interviewed and supported by evidences from literature which shaped into the general descriptions.

ETHICAL CONSIDERATIONS

This research required collecting data from operatives and supervisors considered to have experienced some form of worker engagement within their work places. Therefore ethical issues such as protecting the operatives and supervisors; developing trust with them; promoting the integrity of the research; guarding against issues of misconduct and impropriety that might reflect on organisations; and coping with new and challenging problems were duly considered; see (**Creswell, 2014**). Ethical issues such as personal disclosure, authenticity, credibility, role of the researcher and personal privacy were also addressed, (**Israel & Hay, 2006**).

The research team sought ethical approval from Glasgow Caledonian University Ethics Committee for the non-invasive research involving human participants which was approved; see (**Sieber, 1992**). Interview instructions regarding voluntary participation towards gaining access to research participants were cascaded via industry associates. This was fundamental in order to have a pool of construction sites to choose from without any vested interest. The purpose of the study was disclosed in the adjoining interview instructions and all possible disruptions on the workforce were classed as negligible. The privacy and anonymity of the participants were held in confidence.

Ethical issues were considered to be very important during the planning and designing phases of the research as much as they were during the data collection stage and it was imperative that they were addressed from the inception of the study, (**Creswell, 2013**). It was important to consider the role of the researcher as an insider (**to gain trust of the workers**) and an outsider (**to avoid bias**) to the operatives and supervisors; establishing supportive and respectful relationships without any stereotypical assumptions that operatives and supervisors do not embrace; acknowledging the voices of those operatives and supervisors in the study without placing participants at risk, see (**Creswell 2013; 2009**). The purpose of the study was disclosed to the operatives and supervisors again before the start of the interview and in this case, it clearly clarified that participation was voluntary and that they won't be put through any undue risk. Issues of gender, cultural, religious belief and other differences were respected.

DEVELOPING MEANINGFUL DISCUSSION RANKING WITH STEERING GROUP VIA WORKSHOP

The development of the meaningful discussion framework involved using inductive and deductive logic. The inductive process involved working back and forth between the themes emerging from interviews conducted (see Appendix 1 – Table 6) and the information from literature until a comprehensive set of themes were established (Creswell 2013). This involved collaborating and interacting with industry experts (Steering Group) via presentations and workshops in order to shape the emerging themes of meaningful discussion from the interviews.

The validation of the framework and categorisations was done through workshops with members of the Steering Group iteratively. The visual representation of ‘meaningful discussion’ framework was developed deductively (testing theory) with members of the Steering Group from the categories of information acquired from interviewing the operatives and working supervisors to reach a conclusion based on mutual consensus, see Table 1. This was considered ideal working from the more general to the more specific context of meaningful discussion based on data from the interviews.

Table 1: Areas of issues discussed by the workers with their levels, criticality and meaning

Level	Criticality	Meaning
1	Personal work area; housekeeping; and work environment	Hazards that directly affect/related to the worker
2	Welfare	Issues related to site welfare
3	Hazard spotting; site hazards; and hazard causes/procedures	Hazards that are associated to other workers
4	Proactive site solutions	Proactive discussions or proactive actions taken to resolve issues
5	Beyond the site gate: boardroom/other sites; designs; and mental health	Issues that are beyond the site gate needing some management intervention

DEVELOPING ITERATIVE RANKING FOR EMPOWERMENT, TRUST, MOTIVATION AND COMMITMENT

The process described above was repeated to fully develop a total of five ‘indicators’ of Worker Engagement Maturity, along with detailed descriptions of each level. These five indicators (constructs in research terms), were: Meaningful Discussion; Empowerment; Trust; Motivation; and Commitment.

Whilst the ranking for meaningful discussion was carried via a workshop with the Steering Group (as described above) the empowerment, trust, motivation and commitment indicators were achieved by email (Delphi) communication with the Steering Group. Each framework for individual construct with instructions was circulated to the Steering Group over three (3) phases of iterations. At the end of each iteration process, the anonymised

results from the respondents were pooled together and circulated to members of the Steering Group with the rankings from other group members. They were also required to leave feedback in the 'comments' box, see **iterations 1** for Empowerment **Appendix 2 - Table 7**, page 157; Trust **Appendix 3 – Table 8**, page 159; Motivation **Appendix 4 - Table 9**, page 161, and Commitment **Appendix 5 - Table 10**, page 163. For second and third round iterations, see **Appendix 6 - Table 11**, page 164 and **Appendix 7 - Table 12**, page 169.

Consensus amongst the panel of experts was straightforward when more than half the steering group agreed on the ranking of statements as they were happy to agree with the majority. When there was a lack of agreement (less than 50% agreeing), the expert group were asked to revisit the explanatory notes for each framework and readdress the 'split' statements and what they consider as best fit for the levels of ranking. They were also requested to voluntarily make comments clarifying their own views where such rankings were split. Scenarios where statements from workers were ambiguous and with very little clarity; the expert group were required to place a question mark in such statements and leave feedback or suggest if they think it fits best within another indicator.

The 'Delphi' process can take a very long time to implement; therefore the turnaround time for each cycle was recommended for 48 hours. However, it was recognised that members of the expert group were also very engaged with their day jobs and some flexibility was allowed. At the end of the planned iterative sessions, all rankings received from members of the expert Steering Group were unified as the final rankings for empowerment, trust, motivation and commitment. This final ranking was sent to the expert groups to allow time to implement any subsequent changes or comments from the group about the position of any of the rankings in order to facilitate the validation phase. The final developmental stages of the model (discussed later) was refined based on feedback received from the Steering Group and on-site validation with workers to enable practical use of the model.

CHAPTER SUMMARY

The literature review resulted in five constructs, described here as 'indicators', to assess worker engagement maturity: meaningful discussion, empowerment, trust, motivation and commitment. These theoretical constructs were then compared to real-world data.

Qualitative data was collected from eight construction sites across mainland Britain, covering the housebuilding, commercial and civil engineering sectors. A total of 28 'engaged' workers were interviewed using semi structured interviews before saturation of themes was reached. The method used was phenomenological, which involved interview questions asking 'what and how' in order to convey an emerging theme where the operatives and working supervisors described their engagement experiences. This enabled the researchers to build themes that were constantly checked against the literature.

Interview data was transcribed and analysed by highlighting significant statements, sentences or quotes that provided an understanding of how the operatives and supervisors

experienced the phenomenon. These statements were categorised and ranked in line with the five theoretical indicators. Validation of the framework and ranking (maturity levels) was done through the Steering Group. This was an iterative process using the Delphi method, where all significant statements were allocated to each of the five indicators in hierarchical lists. Each list went through at least three reviews before consensus was reached.

CHAPTER 5 EVOLUTION OF MATURITY MODELS - DEVELOPING THE WORKER

ENGAGEMENT MATURITY MODEL

INTRODUCTION

Maturity is considered as an evolutionary process of growth that illustrates a potentially upward improvement in performance of either an organisation or that of workers over a progressive period of time. Maturity is often considered as the extent to which a specific process is clearly defined, managed, measured, controlled, and effective (**Paulk, et al., 1995**). The expectation according to **Paulk et al. (1995)** is that a higher maturity level will lead to a more consistent and repeatable process and reduces the difference between targeted results and actual results which thus give rise to performance enhancement.

It is generally assumed that developing a worker engagement maturity model will positively improve safety performance which is similar to the concept of capability maturity models (CMM). Capability maturity models are applied as assessment tools to evaluate the capability of an organisation in performing the key processes required in the delivery of a product or service, (**Strutt, et al., 2006**). However, using this initiative in worker engagement maturity requires well defined strategies in place before it becomes beneficial to the workers and the organisation at large, e.g. an organisation with a relatively poor safety culture will probably struggle to implement positive worker engagement strategies with their workforce. The value of a worker engagement maturity model can be derived primarily from its emphasis on key workers' processes which deliver performance improvements. Therefore, the key engagement indicators of workers' improved performance maturity can also be associated with **predictability, control** and **effectiveness**; see (**Paulk, et al., 1995**). The worker engagement maturity model serves as a hands-on benchmarking tool for comparing the relative performance; identifying areas needing improvement and sharing best practice among the workforce.

Crosby (1979, 1996) was one of the pioneers that developed and built on the principle of quality management maturity founded on the concept of the capability maturity model showing a five level maturity that is characteristic of behaviours or management viewpoints displayed by companies, see **Table 2**.

Table 2: Adapted from Crosby (1979) quality management grid

Level	Stage	Management perspective
5	Certainty	'We know why we do not have problems with quality'
4	Wisdom	'Defect prevention is a routine part of our operation'
3	Enlightenment	'Through management commitment and quality improvement we are identifying and resolving our problems'
2	Awakening	'Is it absolutely necessary to always have the problems with quality?'
1	Uncertainty	'We do not know why we have problems with quality'

The work of **Fleming & Lardner (1999)** resulted in a safety culture maturity model by showing the three-stage model improvements developed for an offshore Oil and Gas Company. They identified that the three stages of the safety culture model are: (a) dependent, (b) independent and (c) interdependent. A dependent culture places much emphasis on management and supervisory control, with widespread use of discipline as a means of enforcing safety measures. This type of culture relies heavily on written safety rules and procedures and their safety performance is dependent on how committed the management are in enforcing rules and procedures. With this type of culture, safety performance improvement will reach an upper limit - but no matter how committed management are, it is impossible to observe all operations. Their work identified that improving the maturity status of such a dependent culture will need to have a shift towards developing an independent culture. They identified that an independent culture will focus more on personal commitment to and responsibility for safety. This involves all employees developing their own personal safety standards and demonstrating their commitment by adhering to these standards. While there are safety rules and procedures, it is the responsibility of employees to look after their own safety and make active choices to keep themselves safe. An independent culture focuses on individual responsibilities for safety and safety improvement can be limited by the extent to which there is homogeneity of the safety standards. The third stage which is the interdependent culture is where there is a team commitment to safety with everyone having a fair share of responsibility for safety beyond their own work and by caring for the safety of others. Employees share a common belief in the importance of safety and the movement towards an 'interdependent' culture requires shared perceptions, attitudes and beliefs. Also, the willingness of employees to help others to adopt this belief system is not based on sanction but by persuasion.

Further development of maturity models commonly cited were carried out by **Fleming (2001)** and **Hudson (2001, 2007)**. **Fleming (2001)** identified ten elements that are used in the safety culture maturity model which contain the most common components of both theoretical and measurement models adapted from the HSE human error guidance document, **HSG48³**: *management commitment and visibility; communication; productivity versus safety; learning organisation; safety resources; participation; shared perceptions about safety; trust; industrial relations and job satisfaction; and training.*

Fleming's (2001) maturity model of safety culture was developed with the objective of helping organisations identify their level of maturity and this was based on the capability maturity model by adopting the five levels of maturity set out as a number of iterative stages an organisation should go through: ***emerging, managing, involving, cooperating and continually improving.*** **Fleming's** model provided a framework for supporting the selection and implementation of suitable behavioural interventions. However, the criticism with Fleming's safety culture maturity model and stages of maturity was the fact that it was only

³ <http://www.hse.gov.uk/pubns/priced/hsg48.pdf>

relevant as a diagnostic tool. Also, the relevance of the model was to organisations where the technical and systems aspects of safety performance were adequate and the majority of accidents that occurred appeared to be associated to behavioural or cultural factors.

Hudson (2001, 2007) proposed a safety culture maturity model describing the evolution of safety culture. The model illustrated a five stage progression from pathological first stage through to an idealistic generative stage. This included the work of **(Reason, 1997)** who further proposed two additional levels which he referred to as the **reactive** and **proactive** stages which served as an extensions of **Westrum's (1993)** original maturity levels.

Hudson's (2001, 2007) model which has been used in industries such as oil and gas, aviation and healthcare described each level of development of safety culture maturity as follows:

1. **Pathological:** safety is a problem caused by workers. The main drivers are the business and a desire not to get caught by the regulator.
2. **Reactive:** organisations start to take safety seriously but there is only action after incidents.
3. **Calculative:** safety is driven by management systems, with much collection of data. Safety is still primarily driven by management and imposed rather than looked for by the workforce.
4. **Proactive:** with improved performance, the unexpected is a challenge. Workforce involvement starts to move the initiative away from a purely top down approach.
5. **Generative:** there is active participation at all levels. Safety is perceived to be an inherent part of the business. Organisations are characterised by chronic unease as a counter to complacency.

Parker et al. (2006) also designed a framework which consisted of 18 elements and question set that can be used by organisations to understand their safety culture maturity by further building on the five maturity level model of **(Hudson, 2001)**. The 18 elements were grouped as descriptions of levels of safety culture - eleven '**concrete**' organisational aspects which were associated with safety management systems and seven '**abstract**' organisational aspects which are related to attitudes and behaviours. The contrast between the models adopted by **Parker et al. (2006)** and **Fleming (2001)** was that Parker's model was applicable to organisations with weaker safety management systems of which Fleming's was not suitable for.

Researchers from the University of Queensland developed the Minerals Industry Risk Management (MIRM) Maturity Chart similar to Hudson's model; see **(Foster & Hoult, 2013)**. The MIRM also adopted a five stage maturity as follows:

Level 1 - The '**Vulnerable**' level where the site will accept that accidents happen.

Level 2 - The '**Reactive**' level where there is recognition that the site needs to prevent a similar incident.

Level 3 - The '**Compliant**' level where the culture and systems try to prevent incidents before they occur.

Level 4 - The '**Proactive**' level involves the site, through its culture and methods, embracing the systems approach. At this level of maturity, the system ownership genuinely becomes the responsibility of line management and supervision.

Level 5 - The '**Resilient**' level which describes a site that has successfully integrated safety and risk management into its operations.

The purpose of the MIRM model was to assist sites with identifying their existing status on the maturity journey and the subsequent steps needed for improvement.

The maturity models cited in this review all have unique features by assuming that the requirements for maturity adopts a prescriptive and linear progression towards a culture with Health and Safety as utmost significance. They also assume that organisational cultures are homogeneous and organisations are protected from the external cultural influences. Health and safety research on organisational maturity has been essentially inward looking with more focus on top-down implementation of the organisational objectives; see **(Roberts, et al., 2012)**. Top-down management can impose substantial rapid change, yet be culturally insensitive and top-down policies demand compliance, although they may not entrench adopted values as underlying assumptions.

DEVELOPING THE WORKER ENGAGEMENT MATURITY MODEL

The approach adopted regarding the classification of worker engagement maturity levels for this research was based on the literature review and interactions with the construction workforce. The goal therefore is that a worker will progress through the different levels of maturity over time by building on the strengths and removing the weaknesses of the previous levels, see **(Fleming, 2001)**. The worker engagement maturity model developed in this research is analogous to maturity models developed by **Fleming (2001) and Hudson (2001)** based on their five maturity stages. Also, the theoretical **framework** underpinning the worker engagement maturity model being developed aligns with **Westrum's (1993)** safety culture maturity by:

- Providing a framework that highlights '**highly engaged level**' or '**averagely engaged level**' worker engagement practices
- Illustrating the evolutionary maturity levels of engaged workers over time
- Comparing changes in worker engagement maturity levels amongst workers, across different projects and different organisations.

This framework was established from interviews with engaged construction workers (UK wide) involved in house building to large civil engineering related projects. This is important for **face validity** regarding the participants' experience of worker engagement within the construction sector; see **(Lawrie, et al., 2006)**. Every interview conducted with the workers

was fragmented into rich qualitative constituent statements matching them with descriptive themes that aligned with the key identifiers of the proposed maturity levels from literature. Interviews were conducted at different construction sites with different organisations. The focus was to establish the levels of maturity; any improvement plans that will facilitate the maturity of each individual worker; and improve the maturity of the workforce as a whole.

Adopting this approach is important because previous worker engagement research like the Leadership and Worker Involvement Toolkit (LWIT) by HSE (Bell, et al., 2015) have been more corporate, organisational or management dominated by adopting the top-down implementation approach where workers that are directly involved in carrying out the tasks are not given priority in making or influencing decisions. Also, the LWIT document does not offer much practical guidance in terms of helping organisations to work out the best method of worker involvement that might benefit their projects, (Bell, et al., 2015). This is seen to greatly impact on the trust of the workers on management decision-making as reflected in **Figure 1**. The conceptual view of the workers (behaviour-based) and organisational (culture) change approaches to worker engagement proposed in this research identifies that developing a comprehensive model for improving the occupational safety and health performance of construction workers requires both organisational and worker functions to coalesce. This is because as stand-alone strategies, both approaches will fall short of achieving the aim of full engagement.

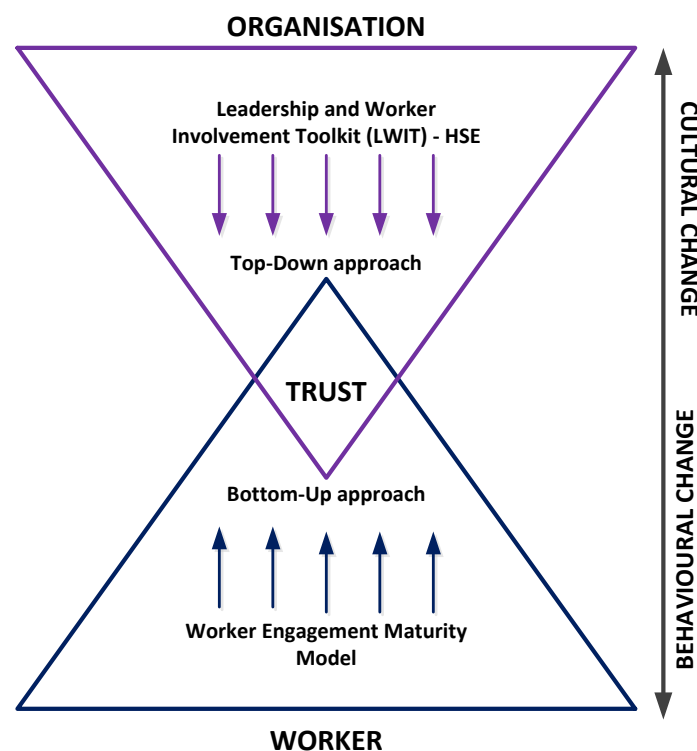


Figure 1: Modes of culture change associated with worker-change and organisational change approaches to worker engagement adopted from (DeJoy, 2005)

As stated earlier, a common conceptual anomaly with previous H&S maturity models tends to presume that maturity follows a linear progressive method; see **Fleming (2001)**; and **Hudson (2001)**; that cultures are homogeneous and organisations operate in controlled environments. Also, most of the maturity models assume that it is impossible for an organisation to skip a maturity level. This research however posits assessing the maturity levels of individual workers and these barriers associated with organisational assessment of maturity and engagement can be overcome. The developed model allows for assessment of the maturity levels of workers from different construction projects/sites and different organisations. The model identifies a 'continuum' rather than the prescribed staged sequence which is often difficult to attain depending on the culture of various work environments that impact on workers maturity.

The Worker Engagement Maturity Model will allow for assessment of the workers' maturity level which can be applied to different construction sites and projects. Although the levels of maturity can be recognised, improvement plans to develop and progress the maturity levels of workers should be based on the idea of a continuum. The worker engagement maturity model can be adaptable to accommodate different organisations, projects/sites, and identify the differences that can help address any behavioural and cultural issues over time. It is important that the maturity model identifies the weaknesses in the workers' progress which in turn creates an explicit motivational driver for workers to change and improve on their maturity levels. The worker engagement maturity model is useful as an assessment tool and can also enable a set of benchmarks for workers of the same or different organisations.

CHAPTER SUMMARY

Maturity is considered as an evolutionary process of growth that illustrates a potentially upward improvement in performance of either an organisation or that of workers over a progressive period of time. It is generally assumed that developing a worker engagement maturity model will positively improve safety performance which is similar to the concept of capability maturity models (CMM), the first of which was proposed by Crosby showing five levels of maturity. Early maturity models for safety culture were based on CMM, with the five levels of maturity set out as a number of iterative stages an organisation should go through, e.g.: emerging, managing, involving, cooperating and continually improving. Subsequent models have been variations of this five level approach.

The worker engagement maturity model developed in this research is analogous to previously developed maturity models with five maturity stages. However, existing models use a corporate 'top-down' approach, whilst the model developed here is a 'bottom-up' approach, focusing on the workers' perspective. It also adopts a 'continuum' rather than stage-by-stage approach, is flexible enough to accommodate different organisations, projects or sites, and provides a framework to identify areas for improvement.

CHAPTER 6 UNDERPINNING THEORY FOR THE MATURITY FRAMEWORK

INTRODUCTION

Exploratory studies on the concept of worker engagement have identified five (5) key indicators that are required to facilitate the development and characterisation of a worker engagement maturity model – meaningful discussion, empowerment, trust, motivation and commitment. This Chapter provides an initial understanding regarding their relationship to engagement and Occupational Safety and Health (OSH). It highlights theories surrounding the development of the maturity framework and their overall relationship as constructs of worker engagement.

MEANINGFUL DISCUSSIONS INDICATOR IN RELATION TO OSH ENGAGEMENT

Communication is integral to any work activity or process but communication that is not reciprocal, lacks purpose, meaning, quality and value will most likely be considered superficial. Organisations tend to experience some form of resistance before any sort of meaningful changes take place, and even then, there needs to be a vision and strategy for this to happen. Communication and dialog therefore has been identified as an important ‘change’ tool and every communication according to **Northrup (2001)** has five purposes which are: *interacting with content, collaboration, conversing, helping to monitor and regulate learning, and performance support*. When discussions (face-to-face) are mediated by response or feedback and have direct impact on the capabilities of workers, such discussions can be considered as meaningful. Experience shows that within the construction industry, effective meaningful discussions are wholly dependent on individuals, teams and organisations. Also, because of the temporary and inter-disciplinary nature of most construction projects, the construction industry is often characterised by groups of workers that are peripatetic, unacquainted, working together over a limited period of time before disbanding to work on other projects, (**Dainty, et al., 2006**). The notion of meaningful discussions therefore is to ensure that the flow of information is effectively managed, messages are appropriately conveyed and the worker is able to interpret and act on such information in a way that is consistent with the expected intents. Meaningful discussion is considered as a fundamentally social activity which includes engaging in conversations, listening to co-workers, networking, collecting information, and directing subordinates. Meaningful discussions will thrive better in a workplace when there are some predictive elements of co-worker knowledge, team tenure, co-worker and supervisory support, group orientation and group cohesion, see (**Burt, et al., 2008**). Discussions that directly influence a worker’s intellectual growth, learning, curiosity and engage them in productive instructional activities can be regarded as a meaningful discussion (**Hirumi, 2002**).

Workers that are engaged and communicate with their co-workers care about their safety and this potentially contributes to an improvement in a work team’s safety climate, (i.e. perceptions and attitudes of workers). It is suggested that safety climate impacts on safety practices (**Zohar, 1980**), unsafe behaviour/actions (**Hofmann & Stetzer, 1996**), accidents

(**Mearns et al. 1998; Mearns et al. 2003**), and is a valuable predictor of safety performance (**Flin et al. 2000**). These suggestions might therefore be appropriate to infer that meaningful discussions which affect safe work behaviour are facilitated by a positive safety climate (**Cooper & Phillips, 2004**). Meaningful discussions can therefore be suggested as an improvement in communication, building relationships and trust, raising awareness of a number of cultural developmental issues and getting feedback from individuals on site including the supply chain.

The promotion of safety through co-worker relationships has been recognised as an important precursor to meaningful discussions referring to employees caring enough about the safety of others; see (**Roberts & Geller 1995; Geller 2001**). **Roberts & Geller (1995)** consider actively caring as a requirement for workers to go beyond the call of duty to identifying environmental hazards and unsafe work practices and then implementing appropriate corrective actions when unsafe conditions or behaviours are observed; also see (**Burt et al. 1998**). It is suggested that work environments with meaningful discussions will have a positive impact on safety, although efforts should be in place regarding management driven policies, training and competency of the workers as they are directly involved with workplace risks and hazards. It is also suggested that meaningful discussions nurture faster information acquisition and facilitate organisational socialisation. The work of **Burt et al. (2008)** shows that acquisition of information via socialisation such as induction training helps in getting to know the personal life of co-workers, their attitudes, families and interests and these are relevant in developing positive safety related attitudes, co-worker knowledge and social relationships.

Trust which is considered as fundamental to meaningful discussions may influence the development of relationships between co-workers. An understanding of the significance of trust in workplace safety has previously been considered in the works of **Flin & Burns (2004)**. They suggested that a degree of trust in management's commitment to safety might be required for meaningful discussions to take place, and any management activities which disrupt this trust relationship may well potentially disrupt meaningful discussions. Worker views that are related to trust in management and emotional commitment to the organisation could be assessed to measure progress in the meaningful discussion process; see (**DeJoy, 2005**).

Maloney & Cameron (2003) suggested that meaningful discussions can only take place when workers possess some elements of capability, i.e. training, experience and knowledge. Provision of requisite training for workers and management, especially 'soft skills' that are required for informal communication which are relevant to meaningful discussions can help in the identification of hazards, reporting unsafe conditions or near misses. This creates an opportunity for a two-way communication mechanism that is required for imparting information to workers and eliciting their own views in a structured manner (**Cameron, et al., 2006**).

Cameron et al. (2006) based on the work of **Jensen (2002)** reflected on five dimensions to workplace assessment which can serve as a guide to assessing the level of meaningful discussions:

1. **The area of the issues that are covered** e.g. if they are related to physical hazards or if they extend to organisational management (safety culture, i.e. how safety is managed within an organisation);
2. **The objectives in developing the solutions** and where they rank in the UK hierarchy of risk controls – elimination, substitution, engineering controls, administrative controls and personal protective clothes and equipment;
3. **The depth of understanding** with applicability to accident causation;
4. **The range of solutions presented** in relation to proactive and reactive decisions;
5. **The capability to transfer issues** out-with the immediate chain of command e.g. senior management, plant managers, senior managers, directors or beyond the site gate.

Cameron et al. (2006) reckons that these five dimensions can help in determining the range of issues that are discussed and can inform the development of an engagement maturity model. Meaningful discussions within the workplace can result in positive interventions where unsafe behaviours can be identified. Unsafe conditions and or design shortfalls; identification of safety, health and environment; or quality issues that could result in an accident, incident, injury or undesired event are systematically managed. Such meaningful discussions resulting from positive interventions increases the awareness of working safely, encourages personal responsibilities, prevents accident or injury, creates an open culture, promotes good ideas and feedback. Practical ongoing examples of meaningful discussions in the UK construction industry are ‘VOICE’ – *‘views of operatives in the construction environment’* meetings/sessions championed by Morgan Sindall which was initially an initiative of AMEC group of companies⁴. ‘Grassroots’ meetings by CALA Homes; ‘No Accident Behaviour’ (NAB) by Morrison Construction; ‘living incident free everyday’ (LIFE) meetings by Joseph Gallagher Limited; safety groups or forums; breakfast or daily briefings; ‘You said, we did’ boards; positive intervention cards; feedback cards; and other recognition and rewards schemes are common examples of meaningful discussion practices. Meaningful discussion initiatives are not a quick fix and for them to be effective, it is important to have workers thinking in the same direction as managers and the level of feedback received from workers are important to the success of the initiatives, **(Cameron et al. 2006)**. The nature and consistency of meaningful discussions towards improving occupational health and safety engagement will need to be regularly reviewed to ensure that available information is not detrimental to trust, commitment and willingness to engage **(Geller, et al., 1996)** due to the psychological impact it could have on the workforce. The right kind of communication will reduce interpersonal conflict, build trust, enable breakthroughs in problem solving, and

⁴ <http://www.hse.gov.uk/construction/engagement/cs12amec.pdf>

demonstrate actively caring, (Geller, 2001). Examples of construction workers meaningful discussions based on the criticality of issues and levels of feedback are as shown in **Table 3**, adapted from Cameron et al. (2006).

Table 3: Meaningful discussions based on the criticality of issues and levels of feedback, adapted from Cameron et al. (2006)

Level	Criticality	Example
1	Welfare	No soap in the toilets
2	Housekeeping	Untidy work area
3	Hazard	Hole left uncovered
4	Self-thinking suggestion	Use of pre-fabrication will limit or eradicate the need to work at height

This present study identified and developed five levels of meaningful discussion with their meanings and criticality by re-adapting **Table 3** as shown in **Table 4**. The development of these levels was based on the diversity of the issues that were discussed during the interviews, how they affect the running of the site and how well workers and managers understand each other and the issues at hand. This was done in collaboration with the Steering Group as a focus group (Morgan, 1997), thus allowing and providing access to consensus and diversity of experiences on the subject of engagement. Cameron et al. (2006) identified that the levels of these meaningful discussions may be facilitated by the levels of training, but also, cultural shift is required as well as behavioural safety plans to change the attitudes of both workers and management on site. The significant shift between the present research and that of (Cameron, et al., 2006) is that workers tend to firstly focus more on raising issues around their personal or immediate work environments which has a direct impact on them before issues of welfare, as seen in **Figure 2**.

Table 4: Revised meaningful discussions based on the criticality of issues and their meanings

Level	Criticality	Meaning
1	Personal work area; housekeeping; and work environment	Hazards that directly affect/related to the worker
2	Welfare	Issues related to site welfare
3	Hazard spotting; site hazards; and hazard causes/procedures	Hazards that are associated to other workers
4	Proactive site solutions	Proactive discussions or proactive actions taken to resolve issues
5	Beyond the site gate: boardroom/other sites; designs; and mental health	Issues that are beyond the site gate needing some management interventions

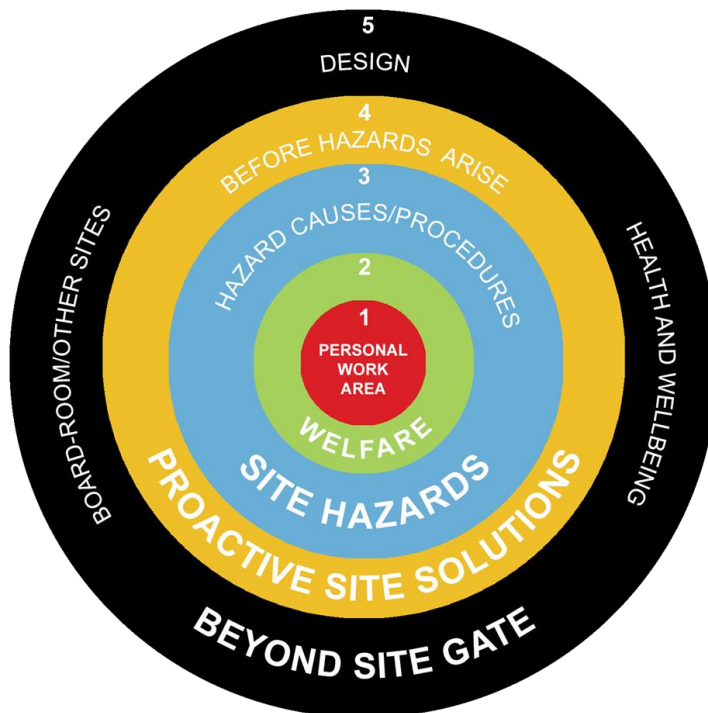


Figure 2: Framework for Meaningful Discussion

The effect of meaningful discussion on team safety is teams that collaborate and share ideas would most likely have lower accident rates and fewer near misses. This is because they actively and regularly communicate safety issues; identify and remove hazards from the work environment faster, and most frequently offer assistance to co-workers when compared to teams that do not discuss and with a weak caring climate (**Burt, et al., 2008**). The highest level of meaningful discussion (level 5 - beyond the site gate) is considered the most challenging to achieve. However, such issues may be more easily achieved on unionised sites, where highly trained (in OSH) Safety Representatives operate. These are workplaces that have union safety reps and joint safety committees and they have half the serious injury rate of sites without, (**Trades Union Congress, 2017**). A proactive organisation could meaningfully replicate this level of discussion with workers willing to show an interest in design issues, OSH Policy, or wellbeing issues, per **Figure 2**.

EMPOWERMENT INDICATOR IN RELATION TO OSH ENGAGEMENT

Worker Empowerment has been theorized to be best achieved in a **top-down, relational or mechanistic** approach. Theorists maintain that it is the responsibility of the organisation to guide the workers, to delegate more responsibility, and share more information with the workers (**Quinn & Spreitzer 1997; Randolph 1995; Spreitzer et al. 1997**). However, other theorists have favoured the more **psychological or bottom-up** perspective of empowerment of the workforce. The psychological perspective of empowerment maintains that a worker

will only be truly empowered when they perceive that they are empowered (**Mishra & Spreitzer 1998; Quinn & Spreitzer 1997; Spreitzer 1995; Spreitzer et al. 1997**).

This research however embarked on the utilitarian approach of studying worker empowerment by drawing on both premise of top-down and bottom-up approach rather than applying them independently. Very few researches have been carried out within the built environment that has successfully and efficiently gathered, developed and validated information for the determination of workforce empowerment levels. The concept of empowerment (enabling) has its origins in practical matters such as intrinsic motivation, job design, participative decision making, social learning theory, and self-management (**Liden & Tewksbury, 1995**). The intention of this study is to understand worker empowerment within a work role, and because work roles are specific to a particular context, the workforce rather than the overall organization was considered as the most suitable context to examine.

Psychological empowerment is a worker's experience of intrinsic motivation that is based on cognitions about him- or herself in relation to his or her work role (**Spreitzer, 1995**). Although there is a close association between empowerment and intrinsic motivation, however, the psychological empowerment construct is designed to emphasize workers' subjective experiences of empowerment; with measures of the construct asking the workers to use their own personal values, background experience, and self-concepts as frames of reference in forming judgments about their work environments, i.e. perceptions.

The concept of empowerment involves increased individual motivation at work through the delegation of authority to the lowest level in an organisation where a competent decision can be made (**Conger & Kanungo 1988; Thomas & Velthouse 1990**). It is believed that organizational structures, policies, and practices play a vital role in bringing about high levels of empowerment. **Conger & Kanungo (1988)** explicitly recognised an antecedent role for organisational practices in their definition of empowerment as "*a process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques providing efficacy information*" (1988: 474).

Empowerment climate is the shared perception regarding the extent to which an organisation makes use of **structures, policies, and practices supporting** worker empowerment (**Seibert, et al., 2004**). There is some form of consensus regarding organisational structures and policies and their association with empowerment climate (**Blanchard, et al., 1999**). **Blanchard et al. (1999)** and **Randolph (1995)** recognised three fundamental organisational practices associated with empowerment: information sharing, autonomy through boundaries (encouraging autonomous actions, development of a clear vision, work procedures, control of workplace decisions), and team accountability (teams are the locus of decision-making authority and performance accountability). Therefore, the

level of origin for empowerment climate perceptions is the worker, and the appropriate level from which to collect data, the level of measurement, is also the worker because a defining characteristic of climate is that perceptions are shared, e.g. (Schneider, 2000).

It is expected that empowerment climate perceptions will be shared by members of the same workforce because of a number of social processes which takes place within the workplace. Workers from the same team are more likely to be exposed to the same managers, goals, strategies, technologies, work environments, and other closely aligned influences, and this exposure results in a fairly homogeneous experience of their organisation that is different from those of other workplaces.

Spreitzer (1995; 1996) developed a measure of psychological empowerment capturing four sets of essential cognitions which this research found alignment with in worker interview data: **meaning (i.e. knowing)** - fit between work-role requirements and personal beliefs and values; **competence (i.e. doing)** - work-specific self-efficacy; **self-determination (i.e. decision-making)** - sense of choice in initiating and regulating actions; and **impact (i.e. influencing)** - perceived influence on strategic, administrative, and operating outcomes at work. The items measuring psychological empowerment are focused on the individual and his or her subjective experience of empowerment.

Based on the overall psychological empowerment construct composed of four cognitions (Spreitzer 1995), this research has redefined the four cognitions into four levels for characterising the workforce as empowerment indicators: **knowing, doing, decision-making, and influencing**, see Figure 3.

- ✓ **Knowing** refers to the value of a work goal judged in terms of a **worker's own values, beliefs** or standards.
- ✓ **Doing** is a worker's belief in his or her **capability** to successfully perform a given task or activity.
- ✓ **Decision-making** is the worker's sense of choice about activities and work methods (Deci, et al., 1989).
- ✓ **Influencing** is the degree to which the worker believes they can **influence certain work or organisational outcomes**.

These four levels combine additively to form a single or uniform entity (empowerment); and lack of any single level will decrease the empowerment scale but not eliminate the overall degree of empowerment experienced by the worker (see Spreitzer 1995). Research supports the argument that psychological empowerment is related to individual performance and satisfaction (Liden et al. 2000; Spreitzer 1995). A 'doing' and 'influencing' act will most strongly be correlated to managerial effectiveness, while a 'knowing' act will be associated with job satisfaction. The role of 'decision-making' can be associated to work effectiveness, e.g. empowered workers who obtain autonomy over their working time tend

to feel committed to their task, which increases intrinsic motivation (see **Thomas & Tymon 1994; Spreitzer et al. 1997**).

Although psychological empowerment and empowerment climate are two conceptually distinct constructs (**Klein, et al., 2001**); psychological empowerment refers to a worker's core psychological state while empowerment climate refers to a work environment. Psychological empowerment is more subjective and evaluative focused. It is based on the match between a worker's values and the demands and opportunities of their work tasks while empowerment climate has a relatively descriptive focus. The assessment of psychological empowerment requires respondents to report such psychological states as **knowing, doing, decision-making, and influencing**, see **Figure 3**, while empowerment climate asks respondents to assess the meaning of organizational structures and practices related to information sharing, boundaries, and team accountability. Empowerment can focus on **job content** (the tasks and procedures needed to get the job done) and **job context** (the departmental mission, goals, and objectives and the environment within which the job is done).

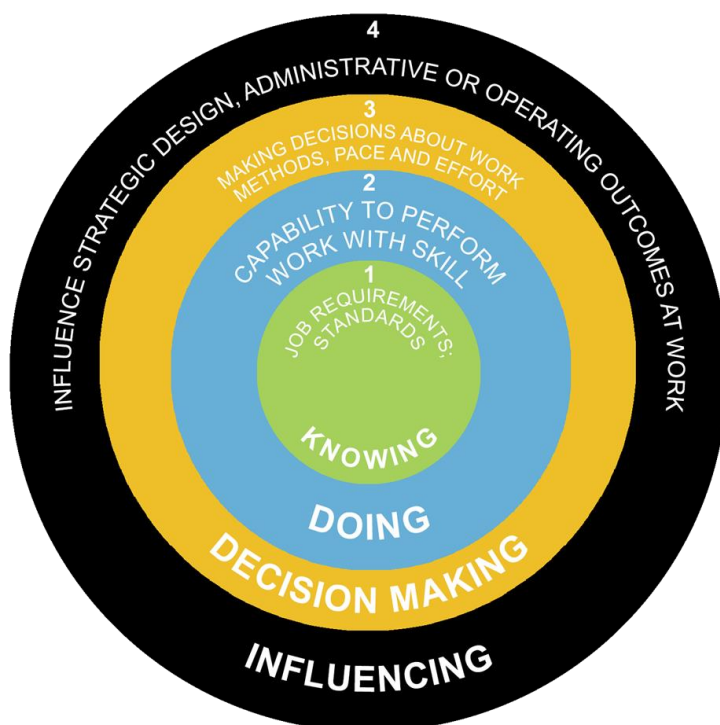


Figure 3: Framework for Empowerment

TRUST INDICATOR IN RELATION TO OSH ENGAGEMENT

The issue of trust is important in this research based on the fact that previous work on trust and trust related issues have been more reliant on utilising questionnaires or surveys and not actually conducting in-depth face-to-face interviews. Furthermore, this research

remains consistent with prior understanding which is relevant to the trust definition, i.e. a willingness to be vulnerable is maintained. Trust is a psychological state fundamental to the formation and sustenance of human relationships (**Mayer et al. 1995; Clarke & Payne 1997**) and its importance in the workplace has been increasingly recognised (**Butler 1991; McAllister 1995; Bagraim & Hime 2007**). An organisation whose culture is hierarchical, autocratic and exclusively reliant on top-down communication is highly unlikely to develop high trust between workers and supervisors. The significance of trust has been closely aligned with areas such as communication and leadership (**Atwater 1988**), implementation of self-managed work teams (**Lawler 1992**); negotiation (**Bazerman 1994**); determination commitment and diversity (**Bussing 2002**), job satisfaction (**Bhattacharya et al. 1998**), teamwork (**Bews & Martins 2002**). Working together in any organisation involves interdependence; meaning workers depend on others in various ways to accomplish their personal and organisational goals.

The workforce composition and the organisation of the workplaces are becoming increasingly diverse within the UK construction sector. **Jackson & Alvarez (1992)** pointed out that increases in workforce diversity necessitate that people with very different backgrounds come into contact and deal closely with one another. Also, within a diverse workforce, there is less reliance on interpersonal similarity, common background and experience and the willingness to work together. This is important in this context of worker engagement because the development of mutual trust provides one mechanism for enabling workers to work together more effectively. Also, the emergence of self-directed teams and a reliance on empowered workforce necessitate the need for the concept of trust (**Larson & LaFasto 1989; Mayer et al. 1995**) as control mechanisms are reduced or removed and interaction increases. In spite of the growing importance of trust, research measuring the level of trust has witnessed diminishing trust among workers (**Brown et al. 2015**). The development of a trust framework for worker engagement within the construction industry is both timely and practical.

Mayer et al. (1995) defined trust as the willingness to be vulnerable to another party when that party cannot be controlled or monitored. Therefore, trust can be defined as a psychological state that involves a decision making process, affected by individual attitudes and cognitions, about an individual's willingness to accept vulnerability to another based on positive expectations of his or her actions in the future (**Butler 1991; Clarke & Payne 1997; Mayer et al. 1995; McAllister 1995**). **Holste & Fields (2010)** consider trust as affect-based which is grounded in mutual care and concern between workers which **Scholefield (2000)** related to as an important element of reciprocity. In addition to risk, factors such as **ability, benevolence** and **integrity** are mostly associated with trust (**Schoorman, et al., 2007**). Their theory separates trust from its antecedents and outcomes. It explains that perceptions of worker, supervisor/manager characteristics comprising trustworthiness are antecedents of trust. All three components contribute to the prediction of trust and mediate the effect of a performance appraisal system on trust.

Several studies conducted in work organisations have shown a positive relationship between trust and performance (**Deluga 1995, Rich 1997**), while others have indicated no relationship (**Cropanzano et al. 1999; MacKenzie et al. 2001**). When workers lack trust in management and they are not willing to be vulnerable to management, their cognitive resources will be preoccupied with non-productive issues, especially activities focused on self-protection or defensive behaviours (**Ashforth & Lee 1990**). Thus, the manifestation of trust can be either active behaviours or the passive lack of engaging in self-protective behaviours. Therefore, the generally accepted element applicable to the worker-supervisor/manager relationship identifies trust as a psychological state of the worker to be willingly vulnerable to the supervisor or manager. A worker will assess the situation and make a personal assessment that will identify that willingly placing them in this vulnerable position will result in greater benefits than costs.

ANTECEDENTS OF TRUST

ABILITY

Ability refers to the group of skills, competencies, and characteristics that enable workers to have influence within some specific area. Ability is the perception that a worker, supervisor or manager has skills and competencies in the domain of interest. **Holste & Fields (2010)** consider ability to be cognition-based trust which is grounded in co-worker reliability and competence. The important implication of the addition of ability to the antecedents of trust is that it creates a framework of trust that is domain specific (**Lewicki et al. 1998**).

BENEVOLENCE

Benevolence is the extent to which a manager is believed to want to do good to the worker, aside from an egocentric profit motive. Benevolence suggests that the manager has some specific attachment to the worker. An example of this attachment is the relationship between a manager and a worker, whereby the manager wants to help the worker even though the manager is not obliged to be helpful, and there is no extrinsic reward for the manager. Benevolence is the perception of a positive orientation of the manager toward the worker. Other issues such as intentions or motives have been considered as important to trust (**Cook & Wall 1980**). **Holste & Fields (2010)** also consider benevolence as affect-based trust which is grounded in mutual care and concern between workers. Benevolence is considered as a quality of a relationship and as an antecedent of trust in a long-term relationship.

INTEGRITY

The relationship between integrity and trust involves the worker's perception that the manager adheres to a set of principles that the worker finds acceptable. This is when the worker feels confident and perceives that raising any H&S concerns will not be punished but praised; there is mutual respect; the worker perceives that the supervisor/manager deals with them honestly and the management is approachable. The adherence to and acceptability of the principles of integrity becomes important to the workforce.

It is agreed that ability is an important concept in this framework, as are integrity and benevolence; see **Figure 4**. Although the conceptual differences between benevolence and integrity are somewhat vague, it can be concluded that all three concepts are theoretically different and all have an additive quality in determining the level of trust. The concept of ability, integrity and benevolence are applicable to personal, group and organisational levels of analysis. The worker, supervisor or manager would be considered trustworthy if ability, benevolence, and integrity are all perceived to be high. However, trust should be thought of as a continuum where the antecedents (ability, integrity and benevolence) vary along the continuum, rather than the worker, supervisor or manager being either trustworthy or not trustworthy.

Lewicki et al. (1998) argued that trust and distrust are separate dimensions and not the opposite ends of a single continuum. However, **Schoorman et al. (2007)** chose to take the opposite view that trust and distrust are the opposite ends of the same continuum which is consistent with dictionary definitions. The evolution of trust is therefore dependent on the level of interaction amongst the workers; i.e. the definition of trust which is based on willingness to take risk (to be vulnerable) in a relationship - means that at the lowest level of trust, one would take no risks at all. Low level of trust amongst the workforce will lead to greater time spent by the supervisor or manager on surveillance or monitoring of the workers and the work progress.



Figure 4: Framework for Trust

MOTIVATION INDICATOR IN RELATION TO OSH ENGAGEMENT

The theory of self-determination is based on human motivation, development and wellness and it focuses on type and amount of motivation (**Deci & Ryan 1985; Ryan & Deci 2000; Deci & Ryan 2008**). Self-determination theory (SDT) initially considered that the type or quality of a person's motivation was more important than the total amount of motivation needed for predicting many important outcomes such as effective performance, creative problem solving, and deep or conceptual learning. It suggests that universal psychological needs indicate that workers will be motivated and display well-being in organisations to the extent that they experience psychological need satisfaction within those organisations. Self-determination theory posits three universal psychological needs which are - the needs for **competence, autonomy, and relatedness** and suggests that work climates that allow satisfaction of these needs facilitate both engagement in the workplace and psychological well-being. Competence means succeeding at challenging tasks and attaining desired outcomes (**Skinner 1995**); autonomy involves experiencing choice and feeling like the initiator of one's own actions (**Deci 1975**); and relatedness necessitates a sense of mutual respect, caring, and reliance with others (**Baumeister & Leary 1995**).

Motivation is the act of being stimulated to do something. Motivation can be grouped into two sub categories: 'unmotivated or amotivation' whereby a person feels no impulse or inspiration to act and 'motivated' where a person is enthusiastic or activated towards an end goal (**Ryan & Deci 2000**). Most theories of motivation reflect the concerns by viewing motivation as a 'unitary phenomenon' that varies from very little motivation to act to a great deal of motivation. A reflection on motivation clearly suggests that it is hardly a unitary phenomenon because people have different amounts and different kinds of motivation, (**Ryan & Deci 2000; Deci & Ryan 2008**). That is, they vary not only in level of motivation (how much motivation), but also in the orientation of that motivation (what type of motivation). Orientation of motivation concerns the underlying attitudes and goals that give rise to action - that is, it concerns the why of actions.

Deci & Ryan (1985; 2008) distinguished between different types of motivation in Self-determination theory based on the different reasons or goals that give rise to an action. The most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome, (**Ryan & Deci 2000**). Research has also shown that the quality of experience and performance can be very different when someone is behaving for intrinsic or extrinsic reasons.

TYPES OF MOTIVATION

INTRINSIC MOTIVATION

Intrinsic motivation represents a worker engaged in an activity or task for its own sake. **Deci (1975)** proposed that people by nature possess intrinsic motivation which can manifest as engagement in curiosity-based behaviours, discovery of new perspectives, and seeking out

optimal challenges. Intrinsic motivation remains an important concept, which reflects the natural human tendency to learn and assimilate; performing an activity for its inherent satisfactions rather than for some separable consequence. An intrinsically motivated worker will be moved to act for the fun or challenges that come with the work rather than because of external prods, pressures, or rewards. Intrinsic motivation is considered as the motivational instantiation of the proactive, growth-oriented nature of human beings (**Vansteenkiste et al. 2006**). This natural motivational tendency is a critical element in cognitive, social, and physical development because it is through acting on one's inherent interests that one grows in knowledge and skills. Intrinsic motivation exists in the relationship between a worker and a task defined in terms of the task being interesting and others in terms of the satisfactions a worker gains from intrinsically motivated task engagement, see **Figure 5** and **Figure 6**. By implementing the traffic light strategy, this section of the continuum is where employers should consider as 'desirable' for workers to function and fulfil their job roles.

Cognitive Evaluation Theory (CET) which is considered a sub-theory of self-determination theory was presented by **Deci and Ryan (1985)** to specify the factors in social contexts that produce variability in intrinsic motivation. It was argued that interpersonal events and structures (e.g. rewards, communications, and feedback) that contribute toward feelings of competence during a specific task has the capability of enhancing intrinsic motivation for that task because they allow satisfaction of the basic psychological need for competence. Feelings of competence will not enhance intrinsic motivation unless they are accompanied by a sense of autonomy; for a high level of intrinsic motivation workers must experience satisfaction of the needs both for competence and autonomy.

Positive performance feedback enhances intrinsic motivation (**Deci 1971**), while negative performance feedback diminishes it (**Ryan & Deci 2002**). The issue of rewards has been argued that almost every type of expected tangible reward made depending on task performance does undermine intrinsic motivation. Also, competition pressure (**Reeve & Deci 1996**), deadlines, threats and directives (**Koestner et al. 1984**) weaken intrinsic motivation because workers experience them as controllers of their behaviour. Issues such as choice and the opportunity for self-direction enhance intrinsic motivation because they give a greater sense of autonomy. It is critical to remember that activities that hold intrinsic interest and have the appeal of innovation, challenge, or aesthetic value for a worker can enhance intrinsic motivation. High performances within organisations are not directly linked to rewards and punishments but to the drive from workers to intrinsically carry out their tasks because they matter. Intrinsic motivation can be considered as the key driver for attaining a higher level of health and safety at work which can be closely related to the concept of autonomy (**Vansteenkiste et al. 2006**).

EXTRINSIC MOTIVATION

Extrinsic motivational behaviour is when a worker engages in an activity or task to obtain an outcome that is separable from the activity itself (**Ryan & Deci 2000; Vansteenkiste et al. 2006**). It is understood that most of the tasks construction workers undertake are not intrinsically motivating. This is mainly the case where the choice to be intrinsically motivated becomes progressively curtailed by social demands and roles that require workers to assume responsibility for non-intrinsically stimulating tasks. Extrinsic motivation is argued to vary significantly in its relative autonomy and thus can either reflect external control or true self-regulation. It is considered as related to a set of activities done in order to attain some separable outcome such as rewards, prizes, money, promotion or peer recognition, (**Ryan & Deci 2000; Gagne & Deci 2005; Deci & Ryan 2008; Deci et al. 1999**).

Within the context of extrinsic motivation see **Figure 5**, a worker does not have to progress through each phase of internalisation with respect to a particular regulation i.e. controlled motivation contingent of reward, deadlines or punishment (**external**); moderately controlled motivation energized by factors such as approval motive, avoidance of shame, contingent self-esteem and ego-involvement (**introjected**); moderately autonomous motivation is the process whereby a worker identifies with the value of an activity and thus accepts regulation of the activity as his/her own. When a worker is able to foresee the personal significance of an activity, they are more likely to identify with its importance, so they will tend to engage in the activity quite volitionally or willingly (**identified**); and autonomous motivation (**Vansteenkiste, et al., 2006**) which involves the experience of volition and choice are well-internalised forms of extrinsic motivation energised by the human psychological needs for competence, autonomy, and relatedness (**integrated**). Indeed, a worker can initially adopt a new behavioural regulation at any point along this continuum depending upon their prior experiences and situational factors (**Ryan 1995**). Some behaviour could begin as 'introjects' (to incorporate attitudes or ideas of others), others as identifications. A worker might originally be exposed to an activity because of an external regulation (e.g. reward), and if the reward is not perceived as too controlling, such exposure might allow the worker to experience the activity's intrinsically interesting properties, resulting in an orientation shift. This section of the continuum is regarded as an 'acceptable' behavioural regulation for workers to function and fulfil their obligations.

Also, a worker who has identified with the value of an activity might lose that sense of value under a controlling supervisor or manager and move backward into an external regulatory mode. While there are predictable reasons for movement between orientations, there is no necessary sequence. **Ryan & Connell (1989)** identified that these different types of motivation do indeed lie along a continuum of relative autonomy. The different types of extrinsic motivation have been associated with differences in attitudes and adjustments; for example, the more workers are externally regulated the less they will show interest, value, or effort, and the more the tendency to blame others, such as the supervisor or manager, for negative outcomes.

Introjected regulation or moderately controlled motivation can be positively related to expending effort, but is also related to more anxiety and to poorer coping with failures. Identified regulations or moderately autonomous motivation are normally associated with greater enjoyment of work and more positive coping styles. Extrinsically motivated behaviours are recognised as not inherently interesting but must initially be externally stimulated; workers can be pressured or coerced by external factors, a process referred to as external regulation. Workers are extrinsically motivated primarily because such behaviours are valued by others to whom they feel associated to e.g. co-workers or work colleagues. Many activities within the workplace are not intrinsically stimulating and the use of policies such as participation to enhance intrinsic motivation does not always yield positive results. It is considered that extrinsic motivation only works for tasks that are rudimentary and with a simple set of rules and a clear endpoint. However, using monetary rewards as a central motivational strategy seems practical and appealing to most workers who work to earn money but on a long term basis, these might be unsustainable to the organisation, see **Figure 6**. This is because extrinsic rewards are mostly used as instruments of social control (**Luyten & Lens 1981**), and thus thwart the worker's need for autonomy (**Deci, et al., 1999**).

LACK OF MOTIVATION/UNMOTIVATED/AMOTIVATION

Lack of motivation is the state of lacking an intention or drive to do things or act. When unmotivated, a worker's behaviour lacks intentionality and a sense of personal connection, see **Figure 5** and **Figure 6**. This section of the continuum is regarded as the 'undesirable' regulation for workers. Lack of motivation results from not valuing an activity (**Ryan 1995**), not feeling competent to do it (**Deci 1975**), or not believing it will yield a desired outcome.

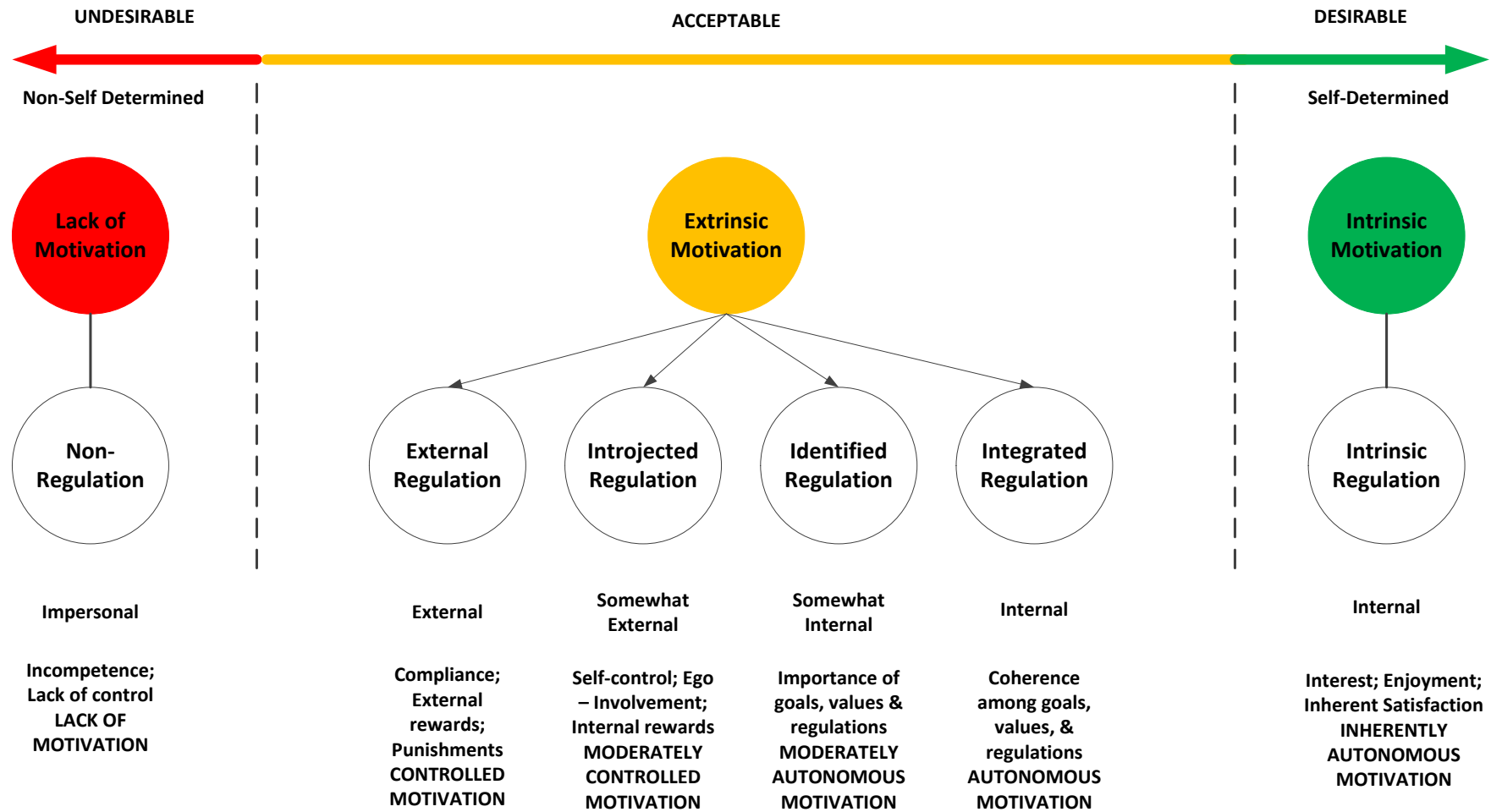


Figure 5: The self-determination continuum traffic light system adapted from (Ryan & Deci 2000; Gagne & Deci 2005)



Figure 6: Framework for Motivation

COMMITMENT INDICATOR IN RELATION TO OSH ENGAGEMENT

The commitment of workers is the psychological bond that they have to workplace targets (Klein et al. 2009), including organisations, individuals and groups within organisations, and goals and behaviours (Becker 1992; Neubert & Wu 2009; Vandenberghe 2009). There is evidence that commitments to different foci have different implications for behaviour, e.g. commitment to supervisors is more strongly related to job performance than is commitment to organisations; commitment to organisations has a stronger link to certain organisational citizenship behaviours (Askew et al. 2013; Becker & Kernan 2003; Chan et al. 2011); commitment to peers has the strongest tie to lateness, and commitment to teams has the most powerful links to citizenship behaviour within the team and team performance (Becker 2009). Therefore, these multiple commitments clearly predict an understanding of the many workplace behaviours and outcomes. The commitment of a worker could be dual in nature; commitment to one's profession and the corresponding increase in job mobility (Parry 2008; Vandenberghe 2009) and commitment to organisations (Judge & Kammeyer-Mueller 2012) and these link with intrinsic and extrinsic motivation, goal level and goal commitment, effort, and performance. Research has shown that when workers have control over time, pace and place of work, there is a positive impact on perceived productivity, job satisfaction and organisational commitment, see (Eaton 2003; Lyness et al. 2012).

Some lines of research on commitment are grounded in **interdependence theory**; a relationship continues when the outcomes from that relationship are beneficial and satisfying to the people involved (**Le & Agnew, 2003**). Although commitment is regarded as the subjective experience of dependence, research has been able to categorise this concept into three broad groups of 'affective commitment' – the psychological attachment of workers caused by their identification with the objectives and values of their organisations; 'normative commitment' – the psychological attachment of workers to the organization based on either socialization experiences (loyalty) or a moral obligation to the organization; and 'continuance commitment' - worker feeling a sense of commitment to their organization because they feel they have to remain, see (**Meyer & Allen 1997; Meyer et al. 1993; Meyer & Allen 1991; Meyer & Herscovitch 2001; Weng, et al., 2010**). Based on these adopted commitment theories and the data from worker interviews, this study has categorised the essence of worker commitment by aligning them to behavioural based safety theories of 'citizenship commitment'; 'compliance commitment'; and 'conditional commitment', see **Figure 7**.

TYPES OF COMMITMENT

CONDITIONAL COMMITMENT

Conditional commitment can be viewed from two perspectives: as disjunctive goals, which makes the workers under-committed to the conditional goal, or as conjunctive goals which makes the worker over-committed. Conditional commitment is a function of the perceived cost of a worker leaving an organisation. This is when workers feel a sense of commitment to their organisation because they feel they have to remain (**Meyer et al. 1993**). For the worker to do otherwise would be to give up favourable levels of personal status, seniority, remuneration, work schedule, pension, and other benefits the worker has acquired over a period of time. Therefore, any factor that increases the perceived costs of the worker resigning from their job can be seen as a predictor of conditional commitment (**Meyer & Allen 1991**). Such perceived cost of the worker resigning from their job may be organisational or job related, such as seniority or an organisational-specific job skill that is not transferrable, or may be independent of the organisation, such as relocation of family.

If a worker perceives that their job can facilitate the attainment of their career goals, they will be more likely to attach a higher cost to leaving their organisation; e.g., by interrupting career goal development or at minimum, risking such interruption since finding another job that equals the worker's current career goal development may be difficult. These set of workers will most likely display high levels of conditional commitment. Conversely, workers who perceive low career goal development in their present job will perceive little or no risk in leaving for a potentially equal or better job and thus will display lower levels of conditional commitment.

The opportunity for work-based learning is an important determinant of worker job attitudes and behaviours and if the present job allows for the development of a range of job

skills, then conditional commitment of the worker would presumably be high as there is potentially much to be lost by seeking a change of job. On the other hand, workers who perceive little professional development within their current job have little to sacrifice by leaving and are likely to exhibit low conditional commitment. This type of commitment occurs only when certain conditions apply e.g. remunerations, pensions; seniority etc; see **(Meyer & Allen, 1997)**. **Continuance theory** applies when a worker weighs up the pros and cons and decide it's not worth the commitment because it is dependent on self-interest (e.g. fixing a safety problem or speaking to someone about safety results in loss of productivity and therefore earnings); it is changeable; and it comes and goes based on situations such as whether a supervisor is present or not.

COMPLIANCE COMMITMENT

A compliant worker will simply obey by doing what is requested of them but no more. They typically just do enough to keep their job. However, with some level of commitment, such workers might be tempted to spend time and effort outside of normal operational hours thinking about tasks, seeking out new insights about accomplishing tasks and solving problems. Compliance commitment refers to the worker's psychological attachment to the organisation based on experiences that underline the appropriateness of remaining loyal or morally obliged to repay the organisation for benefits received from the organisation **(Meyer et al. 1993)**. Workers with high compliance commitment will remain in the organisation because they believe it is morally right to do so. Compliance commitment can also be associated with the norms of reciprocity; i.e. workers helping each other out. Workers that have directly benefited from the organisation or who believe that the organization is contributing to their career growth will feel a moral sense of obligation to give back to the organisation in return e.g. when an organisation is financially involved in supporting worker's education, mentoring programs, and extending to the receipt of promotions and raises **(Meyer & Herscovitch 2001; Meyer & Allen 1997)**.

Organisations with a workforce composition that displays compliant or **normative** commitment will get the job done with acceptable results, but their goal will not exceed satisfactory results or achieving exceptional outcomes. Such workers basically work to the rules due to investment in training, rewards and other benefits and they weigh up pros and cons and decide if it is worth the commitment, see **Figure 7**

CITIZENSHIP COMMITMENT

Workers who care about their work and their organisation exhibit both emotional and citizenship commitment in terms of engagement. Their commitment is not driven by money or other incentives, but by the satisfaction at contributing towards the organisation's goals. This type of citizenship commitment from workers is more self-driven than any amount of money or tangible reward because it encourages the workers to invest a greater amount of time and energy in their role. Citizenship commitment refers to workers' psychological attachment to their workplace caused by their identification with the objectives and values of their organisations. This means, workers are loyal to and choose to remain with their

company because they want to (Meyer et al. 1993) or due to the ability of workers to satisfy their needs at work (Hackman & Oldham 1976). This is supported by Meyer et al.'s (1993) argument that citizenship commitment will be higher for workers whose experiences in their organisation satisfy their needs than for those with less satisfying organisational experiences.

Higher levels of citizenship commitment are normally associated with workers who experience career growth by working on tasks that are related to their career goals. These workers perceive that their organisation is willing to reward them for their efforts and this thus allows them to learn new things and grow professionally. This set of workers displays voluntary commitment within an organisation or company that is not part of his or her contractual tasks. Conversely, workers who experience difficulty in achieving their career goals and who are assigned tasks that do not allow for growth, and perceive little connection between their efforts and organisational rewards will have lower citizenship commitment. Workers who exhibit citizenship form of commitment go above and beyond compliance e.g. they proactively promote safety messages; they show **affective commitment (Meyer & Allen, 1997)** i.e. enjoying their job, they show some level of satisfaction from their contributions to improved H&S standards. Safety citizenship behaviour constructs considers initiatives such as 'VOICE' – '*views of operatives in the construction environment*'; 'grassroots meetings'; 'No Accident Behaviour' (NAB); 'living incident free everyday' (LIFE) etc. as part of citizenship commitment.



Figure 7: Framework for Commitment

CHAPTER SUMMARY

This chapter presented further development of the five Worker Engagement Maturity Model indicators: meaningful discussion, empowerment, trust, motivation and commitment, based on comparisons between the interview data and the theoretical constructs.

Meaningful discussion has been developed to incorporate the categories: personal work area; welfare; hazard spotting; proactive solutions; and beyond the site gate. Discussion on the workers' personal work area is defined as 'entry-level', which includes PPE issues and hazards involving the workers' tools and tasks. Welfare issues include e.g. toilet facilities, rest and eating areas. Hazard spotting relates to reactive reporting of unsafe acts and conditions. Proactive solutions relate to discussions to actively prevent hazards occurring. Beyond the site gate issues require more effort and are more challenging because they reach beyond the physical site, e.g. policy decisions that affect multiple sites, design aspects or even issues around mental health which go beyond the site.

Empowerment has been developed to incorporate the categories: knowing; doing; decision making; and influencing. Knowing and doing are the first and second steps to competence i.e. knowing standards and safe systems of work, and then being capable of doing the work safely. This is followed by having authority to decide work pace and methods and finally influencing strategic issues, such as policy or design i.e. 'beyond the site gate' (as opposed to merely discussing them under the 'meaningful discussion' indicator).

Trust has been developed to incorporate the categories: lack of trust; ability; benevolence; and company integrity. Lack of trust is the result of none of the other categories being present. Ability relates to trust in the ability of other workers to work safely. Benevolence relates to the extent management genuinely cares for worker OSH (as opposed to merely avoiding being sued or fined). Company integrity relates to how a company treats workers regarding OSH e.g. if reporting safety concerns is praised or punished.

Motivation has been developed to incorporate categories: amotivation; extrinsic; and intrinsic. Amotivation means lack of motivation, the worker is not motivated to engage and act in the interests of OSH. Extrinsic motivation is acceptable but relies on factors such as money, promotion or ego. Intrinsic motivation is the most desirable and relies on self-motivation and enjoyment to engage in OSH.

Commitment has been developed to incorporate categories: conditional; compliance; and citizenship (commitment means behaviour – which distinguishes it from 'motivation'). Conditional commitment is for self-gain and is variable depending on the conditions i.e. not dependable. Compliance commitment involves conformance to OSH rules (but no more) for mutual benefit, exemplified by reporting an unsafe condition. Citizenship commitment is above and beyond compliance behaviour, is predicated on loyalty and is exemplified by intervening to correct an unsafe condition.

CHAPTER 7 FINDINGS & DISCUSSIONS

INTRODUCTION

This chapter reports the findings and discussions of results of the development of the worker engagement maturity model. It incorporates the demographic information of the research participants and organizations involved, information on data collection and validation of the research instruments used in characterizing the engagement of the workforce.

OVERVIEW OF SITES AND WORKERS

DEMOGRAPHIC DATA PER SITE

This research actively involved seven construction contractors responsible for house building, municipal building and large scale civil engineering projects with annual revenue of between £50m to £2.6bn. The total number of workers that actively participated in the data collection (28 participants) and validation (22 participants) process for this research were fifty (50) workers. For the initial data collection phase, these contractors were selected (purposeful sampling strategy) from a pool of contractors and site options available to the researchers. For the validation of the framework, contractors in consultation with their workforce volunteered their workers to participate in the research. The contractors were encouraged to volunteer their engaged workforce especially within the operatives and supervisory level. The engaged operatives are regarded as workers who are either interested in health and safety issues; contribute to H&S and regularly attend H&S meetings; whilst engaged supervisors are those who encourage engagement within and outside the workplace and regularly discusses Health and Safety issues with other workers.

The twenty-eight construction workers were interviewed for initial data collection between January and March 2017 comprising of 11 operatives, 12 working supervisors; one contract supervisor; one safety coach; and three foremen, see **Table 5**.

Table 5: Number of projects and workers during initial data collection and validation stages

CONTRACTOR	ORGANISATIONAL ROLE	NUMBER OF PROJECTS	NO. OF WORKERS FOR INITIAL DATA	NO. OF WORKERS FOR VALIDATION
A	Facilities management, consultancy, project management	2	2	4
B	House building	2	6	
C	House & municipal building	2	8	
D	Civil Engineering	3	8	
F	New Homes & Property Development	1	4	
G	Civil Engineering & Tunnelling	4		10
H	Civil Engineering	1		8
Total		15	28	22

Based on the 28 workers for initial data collection, 17 of the workers (60.7%) went through formal further education (college) or an apprenticeship programme before starting work within the construction industry. The remaining eleven (39.3%) workers did not specify what type of previous qualifications or education they have had. The average age of the workers interviewed was 38 years with an average work experience of seven years with the same construction company. The trades represented by the workforce included - Painters & decorators; Electricians; Timber frame kit erector; Bricklayers; Plumbing, heating & gas engineers; Joiners; Ames Taper; Scaffolders; Tunnel Miners; Miner nozzle man sprayer; Steel and concrete fixer; Lifting & operations and Dry liner fixer.

The contractors were encouraged to allow the researcher access to an engaged workforce to allow for valid comparisons of the levels of maturity of the workers. During the initial phase of data collection, twenty-six (26) of the workers had English as their first language while two workers (from Greece and Slovenia) were able to competently communicate in spoken English and take part in lengthy conversations. That meant there was no real concern regarding the integration of foreign workers (**Commission on Integration and Cohesion, 2007**). Extracts of the initial phase of interviews were used for developing the framework and classifying the different maturity levels for the key indicators of worker engagement: meaningful discussion, empowerment, trust, motivation and commitment.

DATA COLLECTION FOR RANKING

Workers were invited to voluntarily participate in the data collection stage used for the ranking phase of this research. The workers were given instructions regarding the significance of the research, why the study was being conducted and what will be involved, i.e. the development of a worker engagement maturity model. The interview was non-invasive, open-ended and it lasted between 30-40 minutes within the worker's site location and it was audio recorded. The interview was transcribed and analysed towards developing the ranking for the worker engagement maturity model.

Initial categorisations of statements extracted from the interviews with frontline workers were based on the framework developed for assessing the maturity levels of workers. The rankings of the statements from operatives and supervisors extracted from the interviews went through an iterative process with the expert focus groups using a Delphi technique; see **Table 11**, page **164** and **Table 12**, page **169**.

The Delphi technique is a widely used method for data gathering from teams of experts designed as a group communication process with the aim of achieving convergence of opinions. This therefore made it a useful tool for this study in the development of the engagement framework and maturity model because of its best fit for building consensus through multiple iterative processes from expert panels (Steering Group). Members of the Steering Group were issued explicit instructions regarding the ranking exercise (placing statements higher or lower to each other depending on which category they belonged to) and a 48 hours turnaround for each phase of the ranking exercise was circulated via email. A

total of six of the ten active Steering Group members responded over the three iterative stages of the ranking phase until a consensus was established for each engagement category (later titled as 'indicators'), i.e. meaningful discussions, empowerment, trust, motivation and commitment. It is essential to state that the Delphi technique characteristically has its flaws of low response rate which was considered during the design and implementation stages of the research.

VALIDATION OF WORKER ENGAGEMENT FRAMEWORK AND DATA ANALYSIS

Seven main contractors involved in house building, municipal building and large scale civil engineering projects actively participated in the data collection and validation process for this research. For the validation of the framework, contractors in consultation with their workforce volunteered their workers to participate in the research. The contractors engaged their workforce within the operatives and supervisory level. The engaged operatives are regarded as workers who are either interested in health and safety issues; contribute and regularly attend Health and Safety meetings; whilst engaged supervisors are those who encourage engagement within and outside the workplace and regularly discusses Health and Safety issues with other workers. The validation of the framework and categorisations was done through workshop and online with members of the Steering Group iteratively. The visual representation of 'meaningful discussions' framework was developed deductively (testing theory) with members of the Steering Group from the categories of information acquired from interviewing the operatives and working supervisors to reach a conclusion based on mutual consensus. This was considered ideal working from the more general to the more specific context of meaningful discussions based on data from the interviews. The final developmental stages of the model was refined based on feedback received from the Steering Group and on-site validation of workers that participated in the research to enable practical use of the model.

The criteria in place for workers being sought for the 'validation stage' interviews were classified as 'highly engaged' and 'averagely engaged' workers; direct employees or subcontractors. The aim of the validation interview was to involve at least two workers each from the same site which employers identified to an independent reviewer as 'highly' or 'averagely' engaged workers. Each employer was tasked with identifying and volunteering two highly engaged workers and two averagely engaged workers from their site. These workers identified as highly and averagely engaged were not known to the researchers conducting the interviews but only to the independent reviewer. Also, employers were requested to discretely identify workers that were Trade Union safety representatives or safety champions to the independent reviewer. The aim of the framework was to study individual, organisational and project level characteristics, based on descriptive questions derived from the literature, previous interview analysis and Steering Group feedback, see **Appendix 8 - Table 13, page 173.**

The interviews for validation took place between 27th September and 19th October 2017 and involved a total of 22 construction workers classed as highly engaged and averagely engaged workers (operatives and supervisors). A highly engaged worker is someone who has won health and safety awards; (or) actively contributes to health and safety discussions, committees or initiatives; (or) a health and safety champion; (or) show enthusiasm for health and safety matters when you speak to them. An averagely engaged worker was inevitably classed as any other worker that fulfils their work role or duties. The two classifications of workers were identified by their line managers but not made available to the researchers to avoid introducing bias during validation interviews. This is because Health and safety research on organisational maturity has been essentially inward looking with more focus on top-down implementation of the organisational objectives; see **(Roberts, et al., 2012)**. Top-down management can impose substantial rapid change, yet be culturally insensitive and top-down policies demand compliance, although they may not entrench adopted values as underlying assumptions. Firms tend to use maturity as an indication of the measurement of organisational capability (organisational measure), and it can be applied to projects (project measure) with different purposes **(Andersen & Jessen, 2003)**. Maturity also helps organisations gain a deeper understanding of their strengths and weaknesses and target improvement strategies in a more efficient manner.

MEANINGFUL DISCUSSION VALIDATION

The framework for meaningful discussions was conceived and developed by the researchers in collaboration with the industry experts. This resulted in a visual representation of factors radiating out from the individual worker, to their immediate surroundings and eventually to factors 'beyond the site gate', illustrated by a conceptual dartboard; see **Figure 2**. The significance of involving industry experts was to address complex issues of diverse views regarding assigning and categorising the levels of the different issues discussed by the workers **(Fontana & Frey 1994)**. It was identified that meaningful discussion between workers, co-workers, supervisors and managers was dependent on the fundamental principles of trust, motivation, empowerment and commitment of the workers which are some of the key features identified in the work of **Cameron et al. (2006)**.

The development of meaningful discussion criteria was adopted in assigning levels of issues that were frequently discussed, raised or flagged up by the workers. The criticality of the issues identified; the impact on workers; and the relative meaning of such issues such as welfare, housekeeping, hazard spotting etc. were all captured in the meaningful discussion radar chart which represents the validation results for all 22 workers - see **Figure 8**. The five levels of meaningful discussion indicator were assigned weightings of 20% to account for each individual level and performances of the workforce e.g. a worker on level 1 – 'personal work area' will account for 20% while level 5 of 'beyond the site gate' will account for 100%.

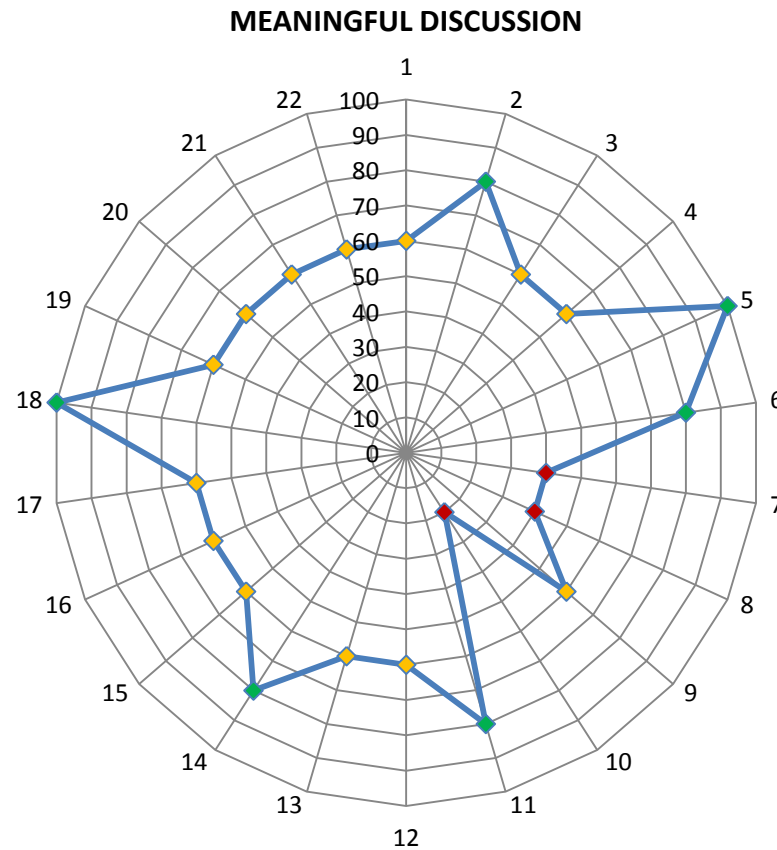


Figure 8: Validation of Meaningful Discussion

The validation exercise categorised the workers into highly engaged and averagely engaged workforce based on their range of performance on the set of interview questions from levels 1-5 of the meaningful discussion indicator, see **Figure 2**, page 61. Two workers attained level 5 (100%) of the meaningful discussion indicator by discussing issues ‘beyond the site gate, boardroom/other sites, design issues, and mental health while four workers discussed issues related to level 4 (80%) of the ‘proactive site solutions’ of the meaningful discussion indicator, see **Figure 9**. The workers that discussed issues on levels 4 (80%) and 5 (100%) of the meaningful discussions framework were therefore ranked as highly engaged workforce.

Sixteen workers were ranked as averagely engaged by discussing issues on the meaningful discussions framework; one worker discussed issues related to personal work area level 1 (20%), two workers discussed welfare issues level 2 (40%) and 13 workers discussed issues related to hazard spotting level 3 (60%), see **Figure 10**. The workers that discussed issues on level 1 (20%), level 2 (40%) and level 3 (60%) of the meaningful discussions framework were therefore ranked as averagely engaged workforce, see **Figure 10**.

MEANINGFUL DISCUSSION - HIGHLY ENGAGED

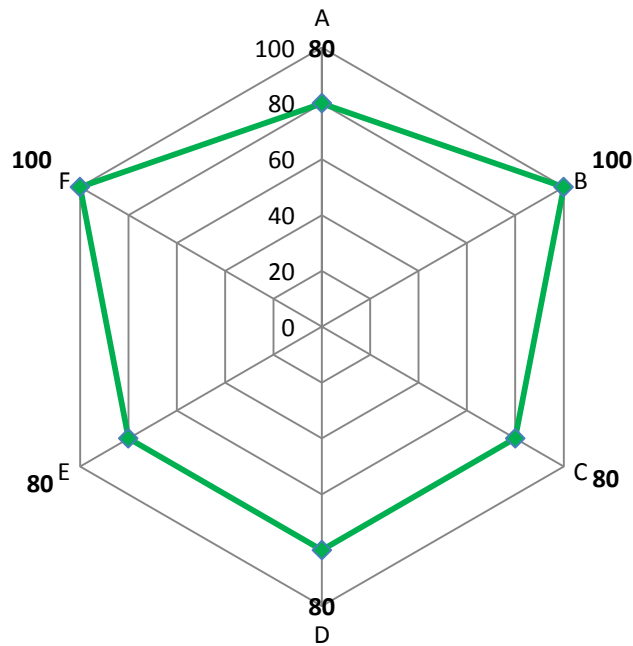


Figure 9: Validation of Meaningful Discussion for highly engaged workers

MEANINGFUL DISCUSSION - AVERAGELY ENGAGED

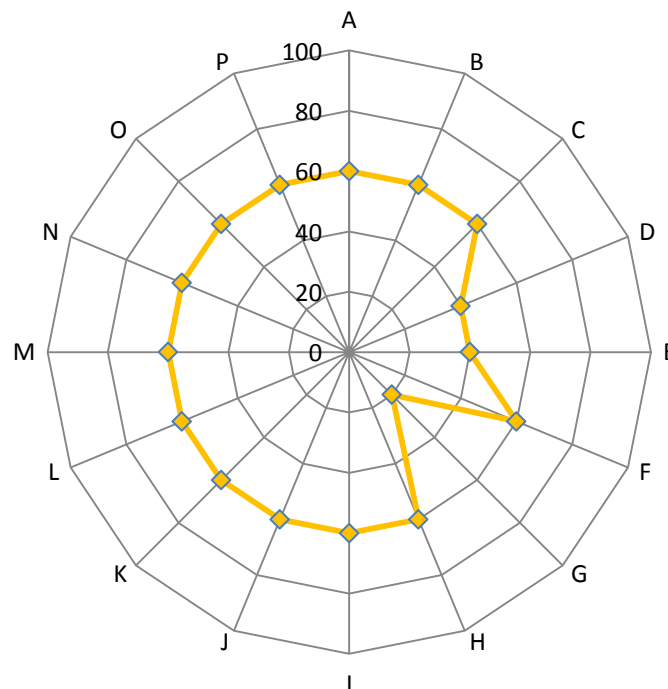


Figure 10: Validation of Meaningful Discussion for averagely engaged workers

Meaningful discussion should be an integral part of any work activity and the validation result shows that the core of the subjects discussed varied from issues related to personal

work area to some issues considered as beyond the gate. Personal work area and issues related to welfare which is considered significantly important to the workers were discussed by three (14%) of the workers which suggests that the management have absolute control over welfare and PPEs issues and satisfies the basic needs of the workers. Issues related to 'personal work area' are considered as the starting point of meaningful discussion workers normally engage in for example:

'I have discussed about having fire proof overalls because the ones we have now are not fire retardant, it can burn through it', see **Figure 8** statement made by worker number 10 during the validation of the Meaningful Discussion Framework.

The data from the validation of the framework shows that one worker from a total of 22 specifically discussed such an issue. Additionally, it was understood that the worker was still new within the workplace and this issue was important for him to get resolved. See **Appendix 9, Table 14, page 178 (personal work area section)** for managerial guidance and instructions for helping a worker at this level.

Two workers during the validation exercise highlighted welfare and PPE as issues they frequently discussed with their supervisors or managers, for example:

'Ear plugs, there is no ear plugs or more ear plug stations, everything that's got to do with your own personal H&S like eyewash; PPE – there should be more PPE as I don't think there is enough; sometimes when you ask for PPE they might not have it in stock', see **Figure 8**, statement by worker 7 of the meaningful discussion validation chart.

'We don't discuss many issues really, if I complain about water coming into the workshop I just fix it, PPE are not problems; getting things done and changed can be very slow, the main problem would be organisation as not everybody thinks the same way, what might be correct process for one might not be for the other; housekeeping and limited space does seem to be an issue which is specific for this project' see **Figure 8** statement by worker 8 of the meaningful discussion validation chart. **Appendix 9 (Table 14, page 178)** highlight **welfare** issues for managerial guidance and instructions for helping a worker within this level.

Overall, 13 (59%) of the workers emphasized that they frequently discussed issues central to hazard spotting and site hazards, **Figure 8**. It is only when issues related to personal work area and welfare have been addressed and there is that element of trust (**Scholefield 2000**) in the management to act on problems, that a worker will have the confidence to raise other immediate issues or hazards associated with their tasks. These include according to the workers:

"Keeping fences and gates occupied by banksman all the time, watching out for traffic, school kids and public; keeping everything tidy on site, traffic management"

“Fairly basic, normal day to day working, PPE, the hazards and everything that goes on site”

“The job is running very smoothly at the moment but sometimes occasional things may occur like e.g. access roads for plants and traffic with many pot holes in it making it difficult for driving on; other issues we discuss just flow on the day”

“Electrical works - we don't do any live working, SSoW, things are isolated, right gloves and glasses, inform other people we'll be working in specific areas, hand power tools are provided, my manager always plans out the task and we discuss before the actual task is started, welfare is clean and tidy”

“I work in the logistics, it's all about the public, everything on site down to the offices needs to be checked as part of my job, we get daily briefing about what needs to be done and you need to be constantly aware of what's going on”

“Making sure gaps in fences are fixed and signage that's been moved out of the road; pedestrians wandering on site; slips, trips and falls on site, chemicals in mixed waste skip that shouldn't be in it, its ongoing all day long, we're constantly looking at what could go wrong and keep the manager informed”

“All H&S issues that concerns the forklift; the area you're working in and who's working around you and all the site movement during the day making sure it's done the way it's meant to be done”

“Keeping our areas tidy; and keeping on top of that all the time – loose wires, any rebar about, timber, keeping walk ways clean, working close to a crane and making sure the load does not go over the top of workers; major concerns gets brought up in the morning 'DAB' meeting; guys wearing their PPEs”

“Breaking concretes with machines, risk assessment for coffer dams in terms of noise, and dust because we can't water it down; mask with filters, goggles, ventilation blower; ear plugs, the cranes bringing the skip out”

“All the guys are site inducted; it's my name that's on the site file if anything happens I go to court, we tell the guys the kind of houses they will be doing; they sign into the procedure every morning; PPEs on site (boots, overall, Hi-Viz, dust mask, hard hats); we go through asbestos register, risk assessment, method statements, and debrief the guys”

“Mostly heights and objects in their way trying to get to stuff because it's all ladder work; I honestly don't get safety issues on this site anyway”

“If you can't use your mats down we ask for advice on it; if the toilet is backed up we say to them to try to get them clean and rectified”

And,

“Depends on the kind of work you’re doing and the site for example if you’re working at height, you’ve got the opportunity to bring anything up; last week I needed new boots so I phoned them and I got it the next day; if you don’t think a job is safe to do you contact H&S supervisor”

See **Appendix 9 (Hazard spotting)** for managerial guidance and instructions for helping a worker within this level (**Table 14**, page **178**).

Engaging with workers in resolving immediate issues like housekeeping, personal work area and work environment issues will reinforce some sense of empowerment, meaning, competence, impact and belief that they are being listened to (**Conger & Kanungo 1988**). This is when workers feel empowered and emotionally committed (**DeJoy 2005; Hakanen et al. 2006; Schaufeli 2013**) to identify and raise other issues that pose hazards to others. These involve issues like hazard spotting; identifying site or work related hazards; risk assessment; accident investigation; equipment design and selecting PPE and equipment. These are more effective if involvement is on a voluntary basis as this ensures ownership (**Lancaster et al. 2001**). The depth of engagement and meaningful discussion depends upon a range of factors as highlighted by **Jensen (2002)** and **Cameron et al. (2006)**. The validation reveals that workers are now more focused on discussing these range of issues for e.g. during pre-start briefings but higher levels issues are still considered not addressed except by some workers (supervisors) that are privileged to be in such positions to discuss higher level issues like being proactive or issues beyond the site gate, see **Figure 9**.

The Construction Design and Management Regulations (2015) (CDM) explicitly state the requirements for those who indirectly influence site health and safety during the pre-construction, or planning stages; also see (**Hare et al. 2006**). This requires designers to manage health and safety risks, and Regulation 14 of CDM 2015 places duties on the principal contractor to consult and engage with workers in construction work to cooperate effectively in developing, promoting and checking the effectiveness of measures to ensure the health, safety and welfare of the workers. Other issues discussed by the workers clearly identify that inherent issues related to proactive discussions of actions taken to resolve problems, and design related issues were not broadly discussed across the spectrum by the operatives but rather by four of the highly engaged workers for example:

“We discuss them all, open cut, lots of plant movement, lads trained up for traffic marshalling; lifting trench boxes to deep trenches; slinging pipes into the trench/open excavation; lifting precast covers onto manholes; lift plans in place; everybody that’s involved is briefed on the lift plans and signed on to the lift plan; we have weekly check of all the lifting equipment carried out by the crane supervisor which he signs off”

“I am the contact person for lifting operations, crane operations on site, so I write lift plans then they go to my manager/line manager, they scrutinise them, add any comments and pass it back to me; to my guys on the ground we conduct lifting forms, and that’s their

chance to speak up about anything or suggestions or any good practice and we follow through on most of the points”

“Mostly everything to do with site, meetings in the morning covering logistics, segregation of plant and pedestrians keeping it all separate, lifting, site planning making sure everybody’s got the right stuff they need for doing their jobs, method statements feed into that to managers, issues i discuss is then fed down to the workers”

“The work area changes every day, what equipment, plants, small tools, what we need and all that; there are discussions on H&S especially wearing the correct PPE, setting up exclusion zones to prevent interaction with other areas; cranes and overhead stuff; main meeting in the mornings and then briefings”

See **Appendix 9 (Proactive site solutions)** for managerial guidance and instructions for helping a worker within this level (**Table 14**, page **178**).

Although issues beyond the site gate like mental health and boardroom level issues were not captured in the discussions that workers had during the development of the framework, the validation of the framework thus show workers discussing these issues were mostly in supervisory roles for example:

“Issues of access, health issues; recommending changes to drawings for the muck pile and steel works with workers suggesting the easiest way to get the job done quicker and safer; the engineer rearranged the drawing so we can do it that way”

“Groundworks deep excavation, inspections every morning on the groundworks, I let the lad know if there are any H&S issues with that, take them through the method statements, any further H&S issues we take further to management, if there are questions relating to planning/designs the management will ask me in terms of what will I do from my experience and we can put in a method statement or risk assessment for that; they get other guys involved in that to come up with a better plan”

See **Appendix 9 (Beyond the site gate)** for managerial guidance and instructions for helping a worker within this level (**Table 14**, page **178**). However, this is hardly surprising as these are the more advanced levels of meaningful discussion and therefore will be unusual for operatives to discuss high level issues unless full maturity is gained over time.

The result from the validation show that the level of mutual understanding between workers on construction sites as well as the close coordination and communication of design issues and issues beyond site gate e.g. related to health and wellbeing are rarely considered by site operatives. Although there seemed not be significant barriers to communication between workers and management; issues that were relevant to design professionals, construction phase plan and contractors were not fully discussed. This gives a sense of the level of reach of the workers in terms of identifying such problems and

cascading to the relevant level. From the interviews conducted, site inductions, toolbox talks and pre-start meetings were considered by the workers as a critical point for the communication of health and safety information between management and the workforce. However, the opportunities for two-way communication that relates to the mechanisms that are required to impart information to workers and elicit their views in a systematic, but not necessarily formal manner is considered still lacking. It is worthy to say that meaningful discussions are taking place but, the level of reach of such discussions need to go wider and farther and more inclusive of the operatives and supervisors. For the operatives and supervisors to meaningfully discuss issues up to Level-5 of the meaningful discussion indicator, they will need to have the requisite skills, experience, competence and training.

EMPOWERMENT VALIDATION

Worker Empowerment has been theorized to be best achieved in a **top-down, relational or mechanistic** approach and theorists maintain that it is the responsibility of the organisation to guide the worker, to delegate more responsibility, and share more information with the worker. There are other suggestions that point towards a more **psychological or bottom-up** perspective of empowerment of the workers and this is based solely on the perception of the workers. The items measuring psychological empowerment are consistent with this conceptualization in that they focus on the individual and his or her subjective experience of empowerment. Although empowerment perceptions reflect the characteristics of an organisation, these perceptions emerge basically from a psychological process in which workers ascribe meaning to the structures and practices occurring within their workplace or organisation.

The development of empowerment criteria was adopted in assigning levels of issues perceived by the workers that have empowered them or made them feel empowered in relation to their work activities. The criticality of the issues identified; the impact on workers; and their relative perception of such issues such as 'knowing' the value of a work goal; 'doing' a given task with some level of capability; 'decision making' about work activities and methods; and 'influencing' certain work or organisational outcomes were all captured in the empowerment validation radar chart - see **Figure 11**.

The four levels of empowerment indicator were each assigned weightings of 25% to account for individual level and performances of the workforce e.g. a worker on level 1 – 'knowing' will account for 25% while level 4 of 'influencing' will account for 100%.

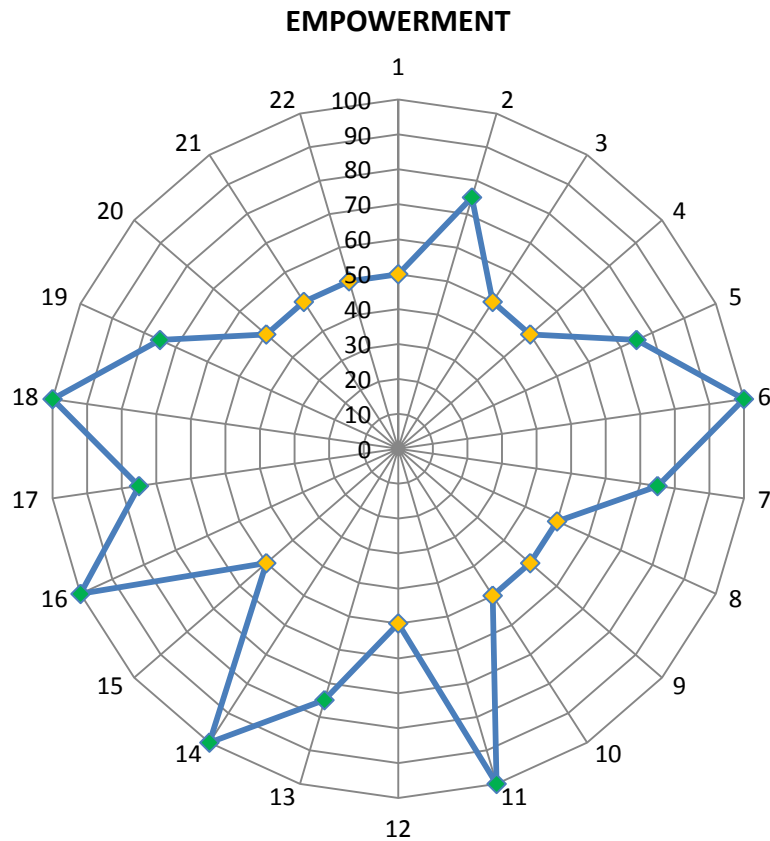


Figure 11: Validation of the Empowerment

The validation exercise categorised the workers into highly engaged and averagely engaged workforce based on their range of performance on the set of interview questions from levels 1-4 of the empowerment indicator, i.e. knowing, doing, decision making and influencing, see **Figure 3**, page 64. The validation exercise shows that eleven workers fulfilled the requirements for averagely engaged workforce levels 2 (50%) (doing levels) while eleven were highly engaged by fulfilling the requirements for levels 3 (75%) and 4 (100%) (decision making and influencing organisational outcomes), see **Figure 12**.

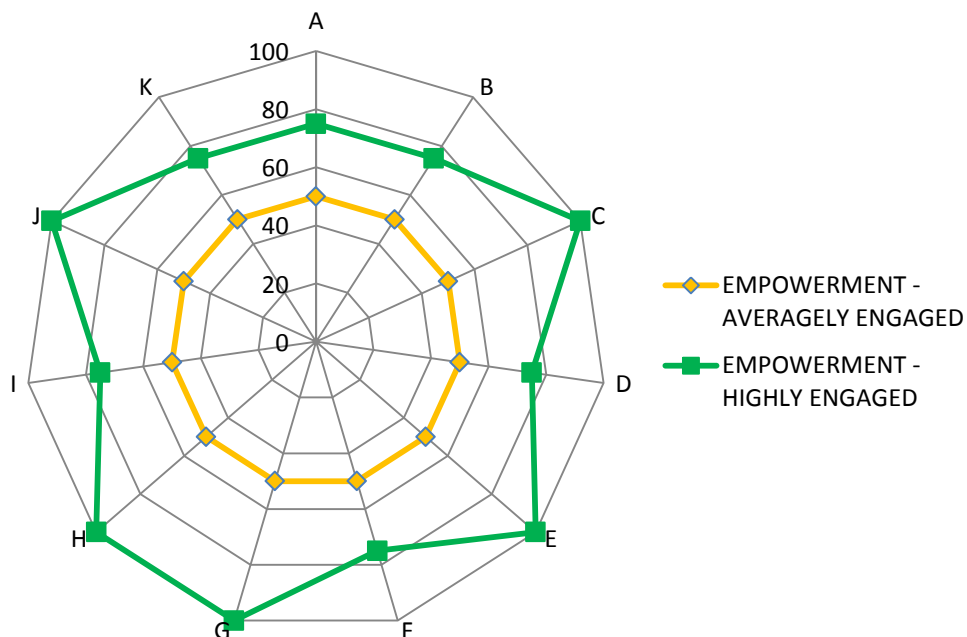


Figure 12: Validation of Empowerment for averagely and highly engaged workers

Knowing

The results from validation indicate that all the workers involved in the validation process knew the value of their work goals based on their own values, beliefs and standards within their workplaces. This may result in greater homogeneity among workers' in terms of personalities, attitudes, and values which further enhances greater consistency about their perception of their employers. See **Appendix 9 of Empowerment (Knowing – level 1)** for managerial guidance and instructions for helping a worker within this level (**Table 14**).

Doing

The validation of the 'doing' level which examines the capability or competence of the workers to successfully perform a given task or activity (work-specific self-efficacy) identified 11 of the workers within this level. These set of workers know the requirements of their tasks, they have clarity regarding goals and work procedures, and their areas of responsibility but lack the power to make some strategic decisions. Examples of comments from some of the workers were specifically related to the requirements of how and what is needed for them to perform their tasks:

"To do my job safely I basically need a banksman for reversing to keep an extra eye out; I have received training on the dumper, and induction training; [.....] I really don't have

problems most of the time and I deal with stuff myself, but if I have to I will go and tell them what the situation could be if something happened”

“To carry out what I do safely I require permit to work on a daily basis; correct PPE sums it up – it could be harness, gloves, eye protection, respiration mask; Most of the things I do might be on a different object but everything is pretty similar e.g. welding, grinding, burning, lifting heavy and moving objects, decisions are made on the move with safety issues in mind or complying with safety issues; I don’t really get involved with senior management, I only talk to people directly above me; they will agree with necessary change proceedings”

“I need to know if I’m WAH or confined space so that lets me know the sort of PPEs and right tools for the job; after morning briefings, I speak to the electrical superintendent that has the list of jobs to be done for the day and I work through that list; I assess my work area to know who’s around me, what’s around me and judge how I’m going to do it; [.....]they support my ideas as long as they see its safe, there is no problems”

“Induction for the site, I know where everything is, I know the fire procedures, I need hot works permit, everything is in place for me to carry out my task - fire extinguishers, water; [.....]I’ve not been here long enough but management seems much more approachable than what I was used to in my previous job and a lot more approachable because the project manager will speak to you and not just walk past”

“Briefing every morning regarding the tasks that will be happening on site; It depends what the task is, changing the barriers and separating the sites, separating the public from the sites and cycle paths, putting up speed ramps for the wagons coming off the sites [.....]we plans as a team and we work in a team of two”

“I make sure the forklift is checked every morning, if there is any problem I report them; also I make sure it’s in good working order; I’ve been driving it for years but now you sit for forklift driving test and after two years they come to reassess you on site; I find out what I’m lifting, the weight, where I’m getting it from and where I am taking it to, plan my routes, and how I need to lift, e.g. unloading and loading of lorries with materials”

“Ladder training and we have safety equipment at the bottom of the ladder to prevent sliding and D-wheel at the top; Check their equipment each day and fill out a form for inspection”

“We get Information about the house we’re going to work – up or downstairs; we need ladders, safety mats, D-wheels plus all our plants; I check my ladder, D-wheels and mat to make sure they’re fit for purpose– ladders and steps are all safe; check the ground you’ll be working is even; do all the high work first and do the bottom last [.....]”

The deficiencies in role clarity, training and technical support and unrealistic goals can potentially lower the capability of the workers to fulfil their roles efficiently if there is no

appropriate managerial support. See **Appendix 9, Table 14, page 178 of empowerment (Doing – level 2)** for managerial guidance and instructions for helping a worker within this level.

Decision making

A worker's immediate supervisor has an important role in creating a non-controlling environment that empowers self-development and decision making. Managers and supervisors that are supportive encourage workers' sense of decision-making and personal initiative, which in turn increase the workers' interest in work and enhanced creative achievement. At its core, the concept of decision making includes increased individual motivation at work through the delegation of authority to the lowest level in an organisation where a competent decision can be made i.e. a worker having a sense of choice in initiating and regulating actions. Workers that were grouped into this level of maturity based on their perception of empowerment within their workplace discussed issues such as:

“At start of shift briefing, all men are briefed regarding the work and all deliveries coming on site for the day; RAMS are set in place before work; every week at start of shift briefing we have a meeting using observation cards to try to solve all issues, those that can't be solved go to management; issues of welfare, tools, things to make it safer and everybody gets a fair chance to speak and these are sent to the management and we tell them what issues we have; the management do get involved and push that we do these meetings every week”

“Daily briefings specific to different roles; being involved in the crane/lifting side, we have briefings in the morning, use check sheets on all the plants in the morning, lift plans are signed on by everybody; I adhere to site safety rules according to my job; We have the cards system where if you put a card in for something that's not right, it goes to senior management and they take them very seriously, they look at them to see if there are better ways, they pick out the best ones where they think there can be changes made and bring it up at the safety meeting to let people know they've looked at it”

“We always need briefing, paperwork, sign up to method statements, describe the works and everything that will be done; sometimes suggesting if work can be done in a different way; most of the time everything about the plants have been planned; after briefing, check the work area out making sure it is safe to work; we have a chat to make sure everything is ok; right PPEs; if we think there are issues we say it to the supervisor and he deals with it but if we think it's not dealt with we take it higher. Most of the time we are told what to do in the method statement and how to do it safely, and our foreman brief us on what we'll be doing. You don't get a free reign of what you want to do; you've got the method statement you got to do what it says, suggesting how job can be done in an easier way and we get our input into it; That probably goes to [Company name], they sit down and have weekly

briefings and stuff like that. On this site we are only just subcontractors; our management [Company name] attend meetings like that and then brief to the workers”

“We go through the safety aspects to determine the type of machine I need, cutting concrete with stihl saws, the kind of dust masks, respiration masks, and sign on to the method statement. Our job is kind of repetitive; e.g. we move the ladder for access as we get deeper. We get a briefing every morning from the line manager asking us for any concerns and what we need. I make sure the lifting gear is there for the crane; talk to the line manager if we need to make changes and we carry out a risk assessment to make sure everything is spot on in such deep drainage environment. You can approach them all if you think you have a problem and they will listen to you; and make sure everybody goes home safely”

The need for an empowering work environment; one that provides informational feedback, offers choices with clear consequences, recognizes the problems facing the individual, and provides a reason to act is important when workers need to make decisions around the tasks they undertake. The criticism that often comes with decision making is the idea that management is seen as pushing responsibility onto workers, and with it comes liability if things do happen to go wrong. The ability to make decisions as an empowered worker include having absolute control over work pace, and the ability to contribute to the development of risk assessments and method statements in partnership with management. Lack of appropriate authority/discretion, limited participation in programs, meetings, and decisions that have a direct impact on job performance and lack of necessary resources have the potential of lowering the decision making of workers. See **Appendix 9 of empowerment (Decision making – level 3)** for managerial guidance, requirements and instructions for helping a worker within this level (**Table 14**).

Influencing

The workers’ own understanding that they can directly influence some strategic, administrative, and operating outcomes within their workplaces has the ability to drive their attitudes and behaviours. For example, clear vision and well-defined goals, roles, and procedures define some level of autonomy within the workplace. When managers are open-minded with such practices, it can help workers to exercise autonomous actions and influence which can be associated with greater feelings of self-determination and impact. A workplace with clear goals, responsibilities, and procedures can help facilitate effective teamwork, cohesion, coordination, and resolving conflicts within work teams. Workers involved in the validation of the empowerment indicator and their perception of influencing some outcome within their workplaces were captured as follows:

“From my guys’ point of view to me, they need up-to-date paperwork, check sheets, lifting accessories as there is no immediate guy above me that specialises in this. Every day, I encourage the guys to be open if they’ve got a problem to speak to me; and I am always

adjusting the lifting equipment register by taking things out of service and putting things into service. I try to make sure everything is good for the guys so they can do their jobs; it's an ongoing process. I have the power from the lifting point of view to stop anything and there is a contingency written into the lift plans that the guys on the ground, slingers and crane operators have got the same power to stop anything unsafe, consult with me and we can go forward from there. The management support and I think they back me up 100% and we work together to sort things out like policies, plans and designs"

"I'm not on the tools, each day we do pre-start meeting by looking at on site movements, high winds, smoking on site, what tools they need to get the job done, and method statements. We do involve the guys with the planning so everyone can agree to the way the job should be done. If there's something that we see that isn't right, most of the guys will react there and then and sort it, if not we go and fix it. Most of the planning of the work is done with the briefing and pre-starts and I have lots of opportunities because we sit and speak with the construction managers and senior construction managers as they give ownership on the sector you're working. I get a lot of opportunities; the management will listen and take it in, not everybody is always going to be right, but we get consulted on the 'work packs' meetings and we get lots of input from the guys, me and other supervisors"

"We work with method statements, RAs and we are supplied with all the equipment needed. I organise the pour where the pump sits; who's coming on to the pour with me, I organise the tools and equipment and I tell the managers other stuff I need and they'll get it for me. We have the main meeting in the mornings and the pre-start briefings; I get full opportunity, if sometimes something is wrong I don't need to talk to anybody else, if I see something wrong I am empowered to stop it. The management will take it on board 100%, they are keen to take this job and break it into smaller sectors rather than the whole and it's probably a safer way and better organised"

"Every morning we get a map of the site and mark everything that is changing on the map and we tell the guys if walkways have changed. We always try to plan a few days in advance if possible and we communicate with the guys on a daily basis. The H&S committee forum is where you can voice your opinion and nobody holds a grudge against you; every subcontractor are invited to the meeting by nominating one person to attend and we discuss issues like welfare, things off site like guys travelling to and from work. I am part of the H&S committee and we discuss issues that can affect the work by learning from the past and taking it forward to the future. Sometimes there are things that might lag on a little bit but in the meeting we discuss closing out on some issues that are yet to be sorted; the management do listen but whether they take everything on board is another issue, like delivering on promises quicker"

"We use RA, method statements, daily briefings, and any information the guys need is given to them in the morning for each individual task, if the task is going to change anytime we put procedures in place. Being a supervisor it's easy to influence somebody to take H&S step,

start looking around and to think ahead. Senior management are good, they will take any H&S issues that we take to them”

Lack of network-forming opportunities, high rule structure, low advancement opportunities, lack of meaningful goals and limited contact with senior management can significantly impact on the ability of the workers to influence decisions. See **Appendix 9 of empowerment (Influencing - level 4)** for managerial guidance, requirements and instructions for helping a worker within this level (**Table 14**, page **178**).

The validation of the empowerment framework from the interviews suggest that psychological empowerment has a more subjective and evaluative focus and this was based on matching each worker's values in relation to the demands and opportunities within their work tasks. It can be inferred that the ‘doing’ and ‘influencing’ levels of the framework can be most likely related to managerial effectiveness, while ‘knowing’ what to do within your role and the measure of decision making could be related to work effectiveness and job satisfaction.

Although the origins of empowerment perceptions are personal, it is expected that such perceptions would be shared by workers of the same work team because of a number of social processes that take place within the team. This is important because members of the same work team are likely to be exposed to the same goals, objectives, policies, strategies, technologies, work environments, and this exposure results in a relatively homogeneous experience of their workplace that is different from other workplaces. However, what this validation showed was that workers of the same work team who also share the same manager perceives their sense of empowerment quite differently. Together, these four perceptions reveal an active orientation to a work role and according to **(Thomas & Velthouse, 1990)** they tend to combine cumulatively. The four dimensions of empowerment were viewed from the perspective of the worker; and these perceptions complement the more objective, job-oriented characteristics and worker differences as this is focused at the level of the worker in relation to their work environment. If workers are ignorant of the extent of their authority and what is expected of them, they will hesitate to act and make decisions and thus feel incapable to influence decisions.

Additionally, the limits of decision making should be clear so that workers are more confident about their decisions, rather than being fearful about possible consequences for decisions made under ambiguous circumstances. Thus, worker empowerment indicators can serve as a useful diagnostic tool because it not only allows companies to determine what levels of empowerment are perceived by their workers, but through its validation, provides managers with useful information on some of the qualities that could be reformed to achieve even greater levels of perceived empowerment on the part of the workers.

TRUST VALIDATION

The culture of an organisation significantly impact on the levels of trust that exist within a workplace. Workplaces with culture that is hierarchical, autocratic and heavily reliant on top-down form of communication will not likely develop high trust between management, supervisors and operatives. However, a culture that promotes inclusiveness, participation, involvement and engagement of the workers will more likely influence the levels of trust that exist.

The research remains consistent with earlier understanding and definition of trust which is relevant to the willingness of a worker to be vulnerable and at the opposite end of trust construct is lack of trust which means it makes rational sense to treat them as a continuum. This research builds on these concepts that ability is an important component in the domain of trust, so also are benevolence and integrity. The conceptual understanding of trust and the differences of these antecedents have led to the conclusion that ability, benevolence and integrity are theoretically separate building on the work of **(Mayer et al. 1995; Mayer & Gavin 2005; Schoorman et al. 2007)**. It is believed that benevolence is a quality of a relationship and that it would be more influential (than integrity) as an antecedent of trust in a long-term relationship and treating all three as contributors to trust was based on the view that they have a cumulative quality in determining the level of trust **(Schoorman, et al., 2007)**. It is also possible to extend the model of trust to work teams and organisational levels of analysis as it reinforces the importance of workers trusting each other and their organisations. The validation exercise indicated that trust between workers and trust for the organisation shows the extent to which the workers are willing to ascribe good intentions to and have confidence in the words and actions of other workers and the company they work for, see **Figure 13**.

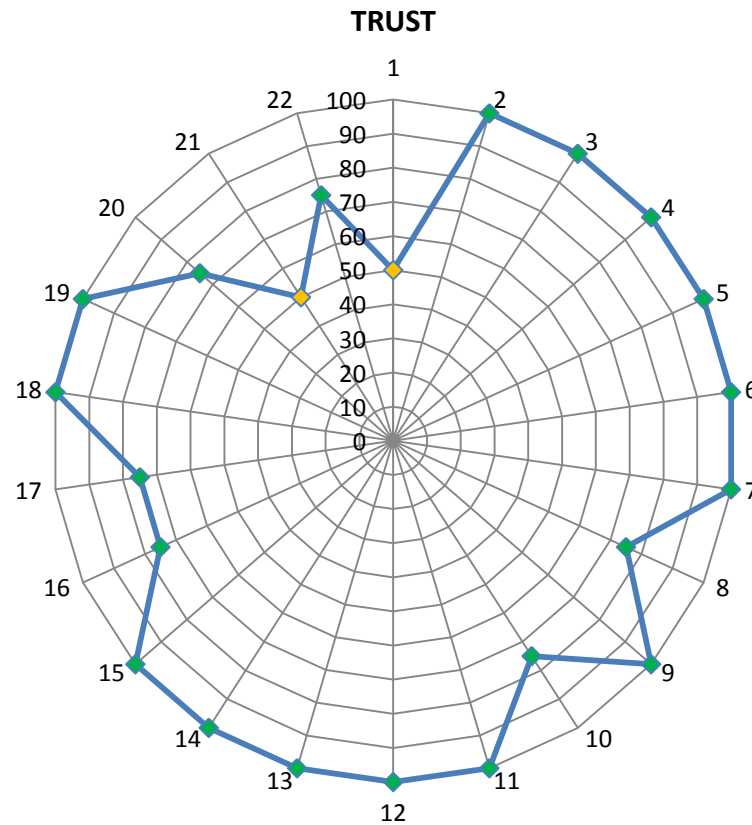


Figure 13: Validation of Trust

The validation exercises for trust indicator were based on the four levels of lack of trust, ability, benevolence and company integrity (levels 1-4). The validation exercise shows that two workers attained the requirements of level 2 (50%) of an averagely engaged worker with the requisite ability including health and safety. Twenty (20) workers met the requirements for highly engaged workforce. Six workers demonstrated ability and benevolence qualities (level 3 at 75%), while fourteen (14) workers displayed ability, benevolence and company integrity qualities (i.e. level 4 at 100%), see **Figure 14**.

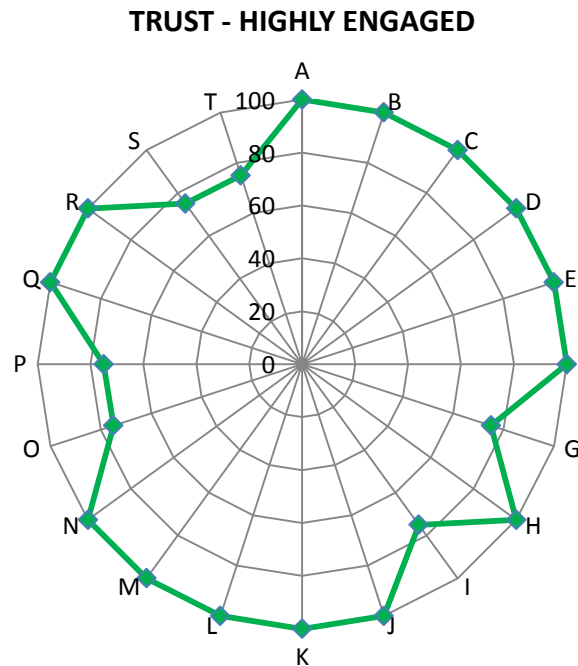


Figure 14: Validation of Trust for highly engaged workers

Lack of Trust

Generally, a workplace with a **low level of trust or the lack of trust** will lead to a greater amount of surveillance or monitoring of work progress and it is suggested that workers that are frequently monitored have the tendency of interpreting the manager or supervisor's observation as exemplifying the level of distrust for the worker. The worker may react in reprisal by acting on the lack of trust (e.g. by cutting corners) by betraying the supervisor whenever the opportunity arises. See **Appendix 9 of Trust (Lack of Trust - level 1)** for managerial guidance, requirements and instructions for helping a worker within this level (**Table 14, page 178**).

Ability

The trust framework identifies that the **ability** of workers to perform tasks with skill, knowledge and competence rated quite highly with almost the entire workforce involved in the validation exercise agreeing that workers within their workplaces are competent enough to embark on their tasks or duties in a safe and healthy way. The validation exercise also indicated that two of the workers operate at this level within their workplace based on the categorisation of their comments from the interviews conducted. The workers have the requisite competence to accomplish their tasks but do not perceive any form of benevolence from the managers neither do they perceive the organisation to have a high level of integrity, e.g.:

“Most of the boys are pretty competent, [Company name] are looking out for you so you can’t step out of line because they will go on your case. H&S wise its ok but you do get the odd blip sometimes”

“I’ll say we’re all good, H&S is in the hands of the individual; we all make sure we work safely within one another. I get my overalls, safety boots, Hi-Viz vest, all my equipment. Because if they didn’t keep me safe and healthy they will have a lawsuit in their hands; they will comply with the rules and regulations; they have a duty of care to the workers. I’ll raise any H&S issues no problem. I have no idea if management do what they say regarding H&S because I haven’t actually had any H&S issues”

See **Appendix 9 of Trust (Ability - level 2)** for managerial guidance, requirements and instructions for helping a worker within this level (**Table 14**).

Benevolence

Benevolence is the extent to which a supervisor or manager is believed to want to do good to the worker, aside from a self-centred profit motive and this is believed to be dependent on some sort of specific attachment e.g. the length of time and their relationship working together on projects. Some of the benevolent qualities include loyalty, openness, receptivity, availability, caring, supportiveness, and demonstration of concern towards workers. This is because the manager or supervisor desires to help the worker, even though they are not obligated to be helpful, and there is no extrinsic reward for such a manager or supervisor. The validation exercise identified six (6) workers perceive that their workplaces had functional elements of both worker ability and the genuine benevolence from the management which places them on level 3 of trust indicator. However, their comments did not display elements of confidence with their managers or supervisors neither do they feel that the management often do what they say regarding H&S. Extracts from the validation interviews revealed the following:

“In terms of the professionals we are all very competent, I am very fairly treated. Management wants to keep me safe and healthy so they do not have to pay a big insurance policy at the end of the day. I would have no problem whatsoever in voicing my opinion on unsafe practice; if I see something I am so concerned about I will have it stopped and everyone has got that opportunity to stop something unsafe. Management do not do as they say, not all the time, I would imagine things change and objectives change therefore their grand ideas change”

“I think everyone here is competent, I haven’t seen anyone and think they shouldn’t be doing that. Everyone on site works to the same standard; I am a new start and for me I am still finding my feet, there’s not been any issue. They’ve sent me to other places for induction which seem to be an encouraging thing. Management seems much more approachable than what I was used to in my previous job”

“I wouldn’t say there is anyone in here that isn’t competent in H&S; new guys from other contractors might not be as H&S focused as guys that’ve been with [Company name] over time. I’ll say I am treated same as everybody H&S wise. From the human side, nobody wants to work on a site where someone gets seriously injured; the general sense between men from working out in the park is a lot thinks the management are seen more to protect the company and insurance purposes rather than more focused on the man. The general consensus among men is they feel they [Company] are H&S focused because of keeping the insurance cost down. I am pretty confident to raise H&S issues with my managers. Majority of the time when it comes to program and meeting dates, sometimes H&S takes a back seat; we focus on H&S when things are running nice and smooth, maybe you turn a blind eye which shouldn’t happen”

“The guys that work with [Company name] 9 times out of 10 are experienced; everybody knows the rules. I get fairly treated. It’s in the management interest to keep me safe and healthy and I am here to do my own job and do it right and to go home safely; they don’t want to have bad record with HSE and they will need it for bidding for other jobs. Very confident to raise H&S issues without a problem. They [management] do what they say regarding H&S I would say so”

“Some workers are better than others, some are new for example apprentices are not allowed up the ladder until they pass their apprenticeship; [Company name] have got a high turnover of employees as people come and go every week; for a new guy starting you don’t know what he’s like; like 90% of the workers knows the ladder work. They do what they say but sometimes a wee blind eye gets turned; H&S works in their favour but sometimes it can be in their way”

“Everybody is competent. I will like to think so, everybody I work with work to the same standard. I think I’m treated quite fairly. If I’m not safe the company is not safe; if I have an accident I need to pay the bills, so there is money involved in it, you can’t run a family if you have no money. If I have any H&S problem I’ll raise it. Sometimes it can take time, if you phone up about something without following up on it sometimes it can take up to a week, it just depends. This job has been fine to me”

See **Appendix 9 of Trust (Benevolence - level 3)** for managerial guidance, requirements and instructions for helping a worker within this level (**Table 14**).

Company Integrity

The concept of integrity is based on the relationship involving the worker's perception that the management, manager or supervisor adheres to a set of principles that the worker finds acceptable and consistent. This implies that the manager or supervisor display characteristics that show elements of consistency, discreetness, fairness, promise fulfilment, reliability, openness, honesty, and just in their decision making that impact on job

outcomes. The validation interview reveals that fourteen (14) workers show evidence of the qualities that match the benchmark for ability, benevolence and company integrity. These set of workers were categorised as those displaying a high level of trust (level 4) within their workplaces. Therefore the outcome of the interview reveal these set of workers fulfilled all the conditions along the continuum of trust. Excerpts from the validation interview reveal the following:

“Everybody is competent because they are all briefed and trained; young lads are always sent along with experienced man to work alongside them. I am treated as fair as I could really ask for to be honest; any issues I have are always answered; I have no problem at all in raising anything. Management do what they say all the time, [Senior Management name] was here two weeks ago when we did the H&S thing, and said anyone has within their rights to stop the job if they think it’s not being done safely”

“Very important to have a very good knowledge of H&S with our work, everybody with regards to the job I do have a good knowledge. My first job with [Company name] and my first tunnelling job, a lot different to what I am used to but I have adapted quickly; all of them I work with were very welcoming when I started on this job. I have always been treated pretty fairly. They want everybody to go home safely at the end of the day. Everybody is different and you don’t get into trouble for raising H&S issue”

“Majority of the guys I work with are competent, they are pretty good here with the men that are working here so much experience and everybody’s got an eye out for you. With pressure of work, sometimes when it gets really busy sometimes you say to yourself I am not getting my worth here, there are good and bad days. The management have an obligation basically, and efficiency based on the guys they have trained on the job. Any H&S issue is detailed and dealt with immediately and in the meetings you get feedback on a four weekly basis”

“I will say everybody is competent in H&S. I am treated same as everybody else on this site. Because I’ve got family at home and kids I believe they’ll want to keep everybody safe, I don’t think there is anyone who wouldn’t want to keep you safe. I can raise any safety issues not a problem, I can only make myself look like a fool, I’ll say it whatever if I see something is not right you can correct me if I’m wrong. If you tell them and put a hit card out, they will look over it and note it down that you put a hit card in. Every week there is a list of all the hit cards that they’ve noticed, taken on board and something will be done about it”

“I work with different trades on this site, all the lads are competent, and there haven’t been any injuries on this site. Very fair, I am been treated very well, they look after me, I’m enjoying it. That’s how they want to be treated, they want to be going home safe every day and they want workers to do the same. If I saw a major H&S issue I will definitely fill out the card and raise it with upper management. They [management] do act on it, it might not be

the very next day but it gets dealt with for example they arranged ladder training, manual handling, they send the lads on courses”

“The guys I’m working with right now are competent but some are much more competent than the others. I am treated fairly, everything is there, they set targets and we work to target. Because partly it’s their responsibility not to kill me and it’s their duty and they need you on the job. On this project more than others, I am far too open raising any H&S issues; I’ll say 99% of the time the management do as they say, for example with the welfare, guys are constantly moaning as the job gets bigger, the guys need to understand it takes time for things to happen”

“Everybody is competent because they are told to be H&S aware. Really treated good, they are a good company. It’s part of their job, they are liable, they have to give us training, for you to get on site now you need to go through the H&S awareness test. I’ll tell them right away, I’m outspoken about everything; if I see something and report it, they do things about it, they are pretty strict on this job for H&S”

“My boss for a start is at the top, I’ll say there are a lot of good guys. I find it pretty fair maybe some other guys will disagree, I find them good. They’ll keep you safe and healthy because they need you; on my conscience I think I want everybody to go home safe. I am 100% confident to raise safety issues; yes, it might take some time but the management come good”

“All supervisors are well trained and with practical experience, everybody is competent. I am treated fairly, reasonably fairly as you get the chance to take charge of your job. Because you’ve got other things outside of work; and because it’s a legal requirement management wants to keep you safe and healthy. I’m very confident, if I think there was a problem I would be chapping their doors right up; they’re open to everyone. Most of the time they do, it’s hard to say whether it’s followed through completely; most of the time they try their best”

“Everyone is competent; it’s your own H&S. I am treated fairly. The management don’t want to be doing a job where they get men injured every week; because they won’t get any more contract, it all boils down to been safe, to get home safe every day. If I don’t like it I won’t do it, I don’t have a problem saying it. Well, I’ve never seen them not following through, you get your briefings every morning and they talk about H&S”

“The workers are competent but they need to also open their own eyes and ears to stuff, a lot of men out there are competent. All workers, they should be working to the same H&S standards. I’ve been treated quite well, you get the stuff you need even if some don’t come on time, you don’t struggle for anything, and everything is put in place. They don’t want any accidents on their job; you don’t want to be going home and say to your wife I had a man killed on my site today. It’s an open door; if there is any H&S issue they are open to speak to someone on site or come to speak to the H&S advisor in the office. I think they do what they

say regarding H&S; maybe procurement side of things might be a bit slow (PPEs) but they do”

“Yes the workers are competent, because they have been here that long; the ones that I know might cut corners are the ones I keep my eyes on that have not been here that long. Everybody is treated the same. It’s the company’s job to look out for the H&S of the employees; the management see me as a good guy to have and I have been running the job and they know who to put on the big jobs. If my guys come to me with any issue I try to address it, if I can’t I’ll take it to the next level and they will come down and look at it and tell you they’ll let you know what they’ll do about it. Quite honestly, I don’t really have much issues, I don’t seem to come across very much of them; anything I do come across I take it to the next level”

See **Appendix 9 of Trust (Company Integrity - level 4)** for managerial guidance, requirements and instructions for helping a worker within this level (**Table 14**).

An understanding of trust and its causes have the capability of facilitating cohesion and collaboration between workers by building trust through means other than interpersonal similarity. Although study carried out by (**Farnham, 1989**) indicated that despite the growing importance of trust, a number of institutions that measure trust have witnessed diminishing trust among their workers; the validation of the trust framework clearly indicate that workers involved in this research demonstrate a relatively **high level of trust** amongst co-workers and trust for the organisation they work for.

It has been identified that judgments of ability and company integrity could be formed relatively quickly in the course of a working relationship; however, benevolence judgments tend to take more time. Just as perceptions about ability, benevolence, and integrity will have an impact on how much trust the worker can garner, these perceptions also affect the extent to which a worker trust their organisation. The works of **Scholefield (2000)**; **Schoorman et al. (2007)** and **Berwick (2003)** does indicate that the development and sustenance of trust in the management can considerably lead to competitive advantage. The trust framework which incorporates ability, benevolence, and integrity as a mechanism to building trust within the workplace seems plausible to assume that nurturing higher levels of trust would be a worthy goal for managers and supervisors to pursue. This is relevant as research shows that trust within the workplace have been implicated in increasing organisational effectiveness (**Bussing, 2002**).

Lack of trust grows when managers or supervisors don’t follow through on their promises and trust grows when they do follow through. Lack of trust grows when managers or supervisors claim to embrace certain values but acts in a manner at odds with them, and trust grows as people consistently act in alignment with the values they say matter to them. For managers and supervisors to earn trust, it takes consistency of words and actions over a period of time.

Trust has long been presumed to relate to performance in organisations, but this mechanism and its effect have been less clear. Also, there is no credible evidence that the new interest in trust has translated into higher trust levels in the workplace (**Schoorman et al. 2007**). Therefore, if trust can facilitate increased levels of organisational performance, then it is plausible to assume that nurturing higher levels of trust such as benevolence and company integrity would be a worthwhile goal for workers, supervisors and managers to pursue. Therefore, if workers interact with benevolence, integrity, consistency, ability, and openness towards their fellow workers, then the relationship between them is likely to be strengthened and maintained. Also, working in a more trusting environment is likely to significantly reduce workers' levels of stress. The results from this study clarify the inconsistent results of prior studies of trust and individual performance by suggesting that the relationship between trust and performance may operate primarily through workers engaging in discretionary behaviour, (**Mayer & Gavin 2005**). This can probably be linked to why twenty out of the twenty two workers during the validation exercise displayed high levels of trust with fellow workers, supervisors, managers and within their workplaces, see **Figure 14**.

MOTIVATION VALIDATION

Motivation is the act of being stimulated to do something e.g. where a worker is energised or activated towards an end goal. A worker lacks motivation when they feel no impulse or inspiration to act. Thus, research has emphasized the importance of the 'pull' of the task rather than the 'push' of management (**Berlew, 1986**).

The Self-Determination Theory distinguishes between different types of motivation based on the different reasons or goals that give rise to an action. The most basic distinction is between **intrinsic motivation**, which refers to doing something because it is inherently interesting or enjoyable, and **extrinsic motivation** which refers to doing something because it leads to a separable outcome. The motivation theory reflect the variation not only in the level of motivation (i.e., how much motivation), but also in the orientation of that motivation (i.e., what type of motivation). Orientation of motivation concerns the underlying attitudes and goals that give rise to a workers' action. Research has shown that the quality of experience and performance can be very different when a worker is behaving for intrinsic or extrinsic reasons. The validation exercise for the motivation indicator reveal that none of the workers showed signs of lack of motivation but rather, there were variations amongst workers undertaking their roles for either extrinsic or intrinsic factors, see **Figure 15**.

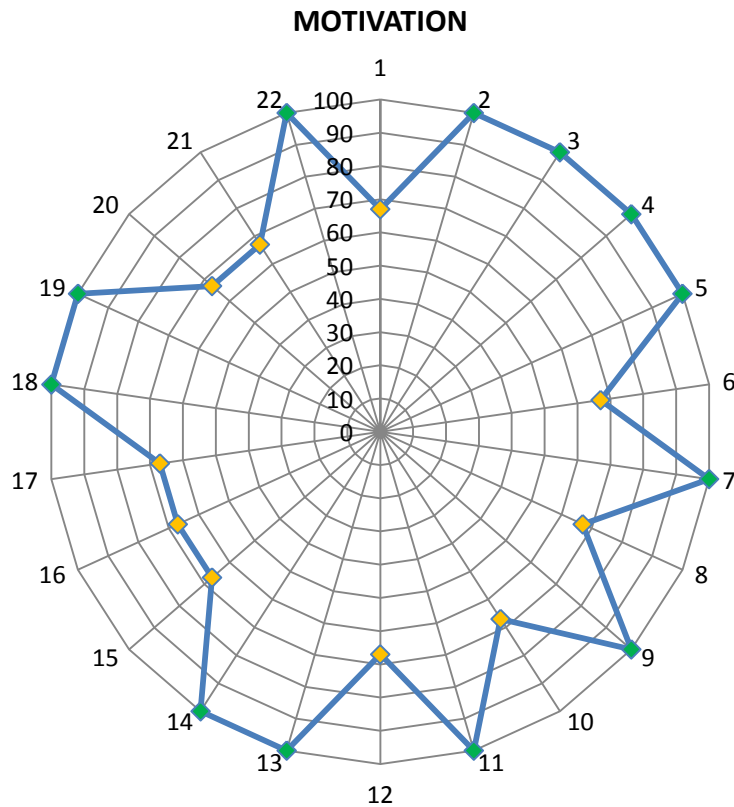


Figure 15: Validation of the Motivation

The validation exercise categorised the workers into highly engaged and averagely engaged workforce based on their range of performance on the set of interview questions from levels 1-3 of the motivation indicator, see **Figure 6** and **Figure 15**. Twelve (12) workers attained level 3 (100%) of the motivation framework by discussing issues of 'intrinsic motivation' related to happiness, enjoyment and satisfaction at work, see **Figure 16**. Ten (10) workers discussed issues related to 'extrinsic motivation' level 2 (66.7%) of the motivation framework, see **Figure 17**. Ten workers were ranked as averagely engaged by discussing issues on the motivation framework that are extrinsically motivated. Twelve (12) workers that discussed issues on level 3 (100%) of the motivation framework related to intrinsically motivated ideas were therefore ranked as highly engaged workforce, see **Figure 16**.

MOTIVATION - HIGHLY ENGAGED WORKER

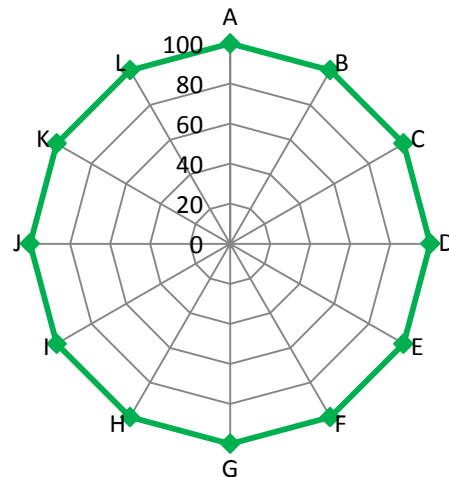


Figure 16: Validation of Motivation for highly engaged workers

MOTIVATION - AVERAGELY ENGAGED WORKER

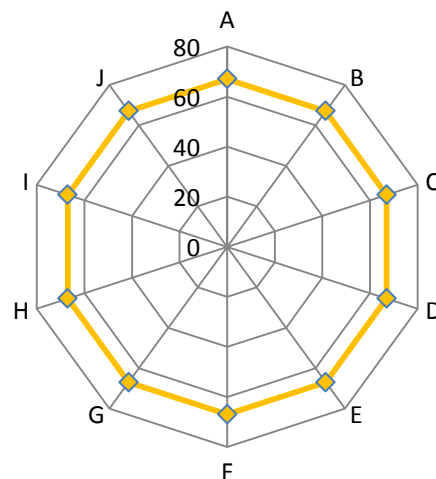


Figure 17: Validation of Motivation for averagely engaged workers

Lack of Motivation

Lack of motivation is the unwillingness or passivity of a worker not to engage in an activity that can lead to a separable outcome. When unmotivated, a worker's behaviour lacks intentionality and a sense of personal causation. When a worker sees no value in a work activity they perform, does not feel competent or believe the task will yield a desired outcome, this could trigger the unwillingness to engage resulting in the lack of motivation. None of the workers that participated in the validation exercise was classified into this category. However, the guidance document, See **Appendix 9 of Motivation (Lack of**

motivation - level 1) identifies some of the requirements and instructions for helping a worker within this level (**Table 14**, page **178**).

Extrinsic Motivation

Extrinsic motivation is argued to vary considerably in its relative autonomy for workers and thus can either reflect external control or performing an activity as a result of its separable outcome. Most work-related activities are not intrinsically motivating and the freedom to be intrinsically motivated becomes increasingly curtailed by social demands and roles that require workers to assume responsibilities for non-intrinsically interesting tasks. Using this framework, a worker does not have to progress through the three stages of the maturity levels; rather, the worker can initially adopt a new behavioural regulation at any point along this continuum depending upon their prior experiences and situational factors (**Ryan, 1995**). The validation exercise reveals that ten (10) of the workers exhibited extrinsic qualities regarding the reasons behind their motivation and safety in their roles. Some of the extracts from the interviews reveal the following:

“I am self-employed; I would rather walk off a job than do something unsafe and hurt myself. I’ve seen too many unsafe acts, I mean bad stuff. I am more careful nowadays than when I was years ago. I feel better for working safely; you should be working safely all the time. When they want you to work unsafe is when they want you to get the job done”

“Yeah, my daughter. I am motivated to work every day because of Fridays when I need to go home. There is no need or reason to do something dangerous, if it takes 3 times longer then that’s what it takes. I always work safely, I don’t see any reason to hurt myself or expose myself to any harm”

“No, at the end of the day I’ve got two young girls and my missus at home to go to. I work for my kids, that’s why I work away; I live in [Name of town] and I work here so I can earn some money so at the end of the day I’m doing it for my family, I don’t intend to come to work today and break my arm because I ain’t gonna get paid for six weeks”

“I’ll put my daughter before H&S; I like working for the company, and the people I work with and the money is ok, you get respect off them as a company. I work safely for my daughter, for me and my workmates. I know I’m gonna go home at night”

“No. Money motivates me in the work I do. You’ve got to think of yourself and everyone round about your work. Working safely makes me feel a lot better because you’re doing your job safe”

“No, I wouldn’t on my conscience know that a man is injured. Providing for my family is the most important motivation, making sure we have roofs over our heads, money. As a person I want to do the best I can and make sure I’m doing things right and safely and make sure I

work my way up the ladder; I've got aspirations. I want to go home and see my son at night, my family. Working safely makes you feel good, like what you're bringing is worthwhile"

"No it's not worth it. Money for my family. The job makes me work safely and you want to go home to the family; don't want to be lying down in the hospital; it all comes back down to money. It's just natural now"

"No, I wouldn't say there is any point. Wages for a start and something that's giving you that wee push; I've got a lot of people counting on me to be here; I like my job. Probably because it's the right way to do it; if anything happens you know it's coming right back on you – fines, court cases jail sentences. Makes you feel better knowing that nobody is hurt, you're not interrupting somebody's family, their wages and their livelihood"

"I've got a family so you want to look after your H&S first and foremost, you want to go to work and go home safe. The wages at the end of the day. Because I don't want to be made a cripple because you won't be able to supply for your family; you want to go to work safe and go home safe. Better, because I know I'm going home safe and so is everyone because we've all done it right"

The validation exercise has shown that some workers are extrinsically motivated for various reasons such as families and money, career progression, delivering on projects etc. It has been identified that workers might originally get exposed to a task because of an external regulation (e.g., a reward), and if the worker perceives the reward as not too controlling, such exposure might allow the worker to experience the task's intrinsically interesting properties, resulting in an orientation shift. Equally, a worker who has identified with the value of a task might lose that sense of value when working under a controlling manager or supervisor and withdraw into an extrinsic level. Differences in worker attitudes have also been associated with the different types of extrinsic motivation for e.g. the more workers are externally regulated the lesser interest, value or effort they will display and the more the tendency of them blaming others such as their managers, supervisors or their colleagues for negative consequences.

Although there are predictable motives for workers to move between different levels, however, there is no requirement regarding their sequence of movement because these different types of motivation do indeed align along a continuum of relative autonomy. **Appendix 9 of Motivation (Extrinsic motivation - level 2)** identifies some of the requirements and instructions for helping a worker within this level (**Table 14, page 178**).

Intrinsic Motivation

Intrinsic motivation is the doing of an activity for its inherent satisfactions, enjoyment, self-interest, perceived competence, and autonomy rather than for some separable consequence. This natural motivational tendency is a critical element in cognitive, social, and physical development of workers because it is when a worker acts on his/her inherent

interests that they grow in knowledge and skills. This is because intrinsic motivation exists in the relationship between a worker and a task, and it has been viewed in terms of the satisfactions a worker gains from intrinsically motivated task engagement. A construction worker may find a task to be intrinsically interesting as a result of improved task design or task properties. Although issue of rewards has been suggested as an intrinsic motivational factor; (Deci, et al., 1999) confirms that virtually every type of expected tangible reward made contingent on task performance does, in fact, undermine intrinsic motivation. Workers also consider work related issues of threats; deadlines, directives, and competition pressure as factors that diminish intrinsic motivation because they see them as controlling their behaviours. The validation exercise reveal that twelve (12) of the workers exhibited intrinsic characteristics related to their tasks. Some extracts from the interviews reveal the following:

“H&S is a major issue in our work; I want to go home and everybody to go home safely every day; H&S is a priority on our sites; it is above production nowadays. I have seen the danger side of getting hurt in this work, I’ve seen human error; it’s not worth it; I have two sons at home and they are my priorities to go home and see them. You feel proud of yourself that you can do the job and do it safely to go home every evening knowing that you’ve done your job”

“You can’t replace somebody’s life but you can replace everything else on the job. If you do your work without H&S the construction industry will be a different place; other people’s experiences and records of fatalities makes me work safely; I don’t want anybody getting hurt; it looks good on the company as well for good H&S record. It makes me feel easier about things that I know that the other men are taking it seriously, same as the management and the company I work for so that everyone can go home safely every night”

“I’ll probably put somebody else’s own H&S before mine; we’ve got overhead loads on site and at any point something could happen, so you always look out for somebody. I am happy to see the end of the day and I want to see the start of the following day, it’s as basic as that”

“I would not rush a job, I have to make sure it’s done safely and if I have to handover to someone else I will want to put them in a safe position as well; it takes as long as it takes to do the job safely. I don’t want to cause injuries to myself or anyone else; I want to be going home in one piece. It makes me feel good knowing that I am doing the job safely, it might take a little bit longer but you know you are doing it in the right way and you’re not going to get into any trouble at all. I turn up to work put in a solid days hard graft and makes me feel that I have achieved something for the day, go home and come back next day and do the same again”

“I want to do well, I am just driven doing a good job, I enjoy my work. Safe, more comfortable, confident in what you’re doing and know you’ll be home at night”

“Nothing comes before H&S. Attitude is one thing; self-preservation of me and other people. More relaxed and more confident to get on with work because you’re not wondering if someone else can harm you”

“No....you can’t work if you’re not healthy or safe. I am up here for family and wages, but I like to do the work as well, I enjoy the work. It’s easier to work safely. Makes the job easier and makes me feel good, knowing that you’re reducing accidents”

“I’m proud of what I do, seeing everything is coming together on the job is a good feeling. I want to go home to my wife at night and same for other workers. It’s part of your job, that’s the way it should be; it might take 5-10 minutes extra but you know you’re not getting hurt”

“I don’t like losing, I’ll never admit defeat in any job, if it means extra half an hour to finish a job I will stay to finish it. Because I want to grow old and I want to see my grandkids. I am always a happy man knowing that all my guys are going home safely at the end of the day; it does give a bit of pride that you’re responsible for these guys all day, it’s a good feeling”

“I enjoy working here, I enjoy being a painter. That I go home every day; there are people in the army getting shot; I think I’ll rather be here”

Many work activities within the workplace are not intrinsically interesting and the use of strategies such as participation to enhance intrinsic motivation is not always practicable. However, workers embark on their tasks to earn money, so using monetary rewards as a central motivational strategy might seem practical and appealing. The industry should make some concerted effort not to monetise the motivation of their workers as this can lead to a deterioration of a more stable working environment, and a less competent and nominal workforce. Therefore, companies should be attempting to increase the motivational levels of their workers through some forms of empowerment platforms, see **Appendix 9 of Motivation (Intrinsic motivation - level 3)** which identifies some of the requirements and instructions for helping a worker within this level (**Table 14, page 178**).

COMMITMENT VALIDATION

Commitment is regarded as the force that binds workers to a certain target which can be social or non-social and to a course of action that is relevant to such target (**Meyer, et al., 2006**). The work of **Meyer & Allen (1997)** described the three concepts of commitment that workers may maintain; a connection to a given target because they want to (**affective commitment**), because workers feel they should (**normative commitment**), or because the worker stands to lose too much by cutting the connection (**continuance commitment**). Research on commitment is also grounded in **interdependence theory** where a relationship persists when the outcomes from that relationship are beneficial and satisfying to the individuals involved. Therefore, **satisfaction level, quality of alternatives, and investment size** has been posited as the antecedents of commitment individually and collectively. An

interesting consequence and strength of this three-factor structure is that not all of these factors must be present for commitment to be experienced, (Le & Agnew, 2003).

This study of workforce commitment was grouped into three broad categories founded on the work of Meyer et al. (2006): **conditional commitment** (Level 1 - 33.33%); **compliance commitment** (Level 2 - 66.7%); and **citizenship commitment** (Level 3 - 100%). The validation exercise for the commitment indicator reveal that none of the workers involved in the research showed signs of conditional commitment but rather, the workers displayed compliant and citizenship forms of commitment; see **Figure 7** and **Figure 18**.

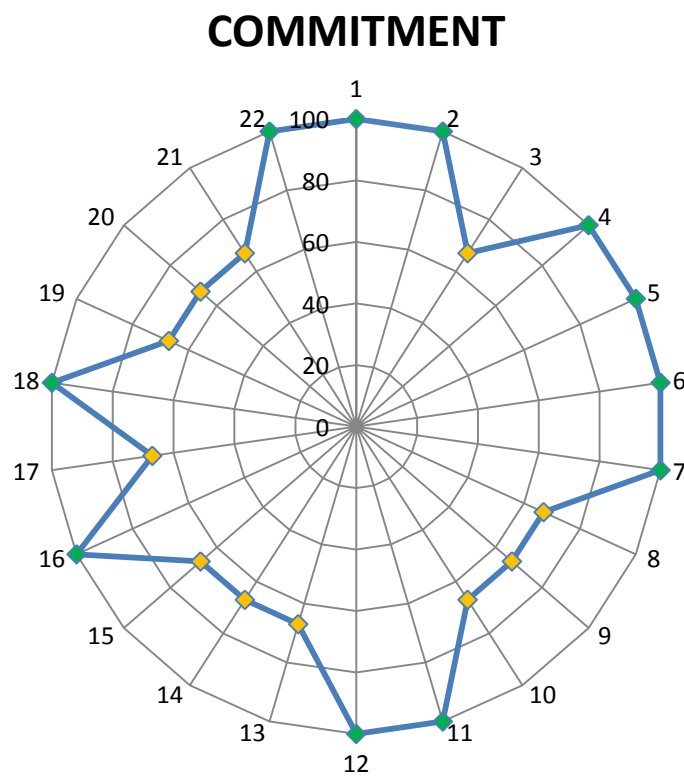


Figure 18: Validation of Commitment

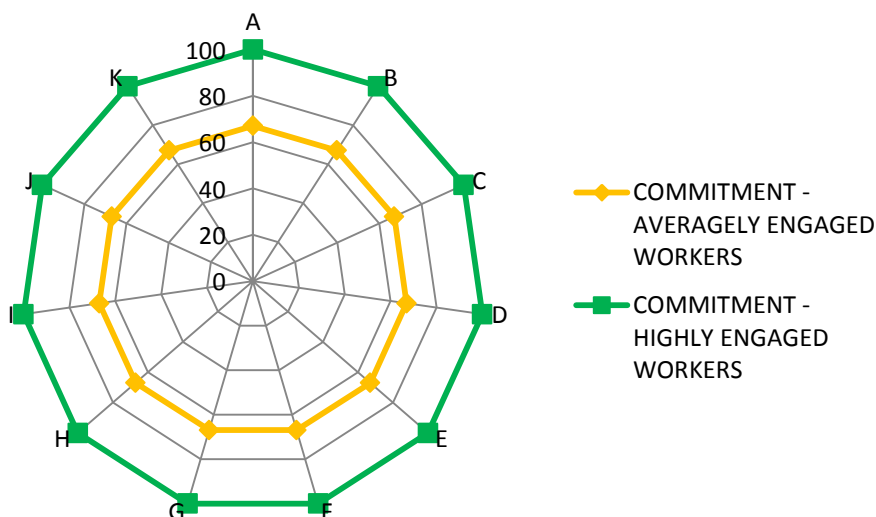


Figure 19: Validation of Commitment for highly and averagely engaged workers

The validation exercise for worker commitment show that eleven (11) workers attained level 3 (100%) of the commitment indicator by discussing issues that go above and beyond compliance i.e. citizenship commitment, while eleven (11) workers discussed issues related to 'conditional commitment' (level 2 - 66.7%) of the commitment indicator, see **Figure 19**.

There is evidence that commitments to different foci have different implications for behaviour, e.g. commitment to supervisors is more strongly related to job performance than is commitment to organisations; commitment to organisations has a stronger link to certain organisational citizenship behaviours (**Askew et al. 2013; Becker & Kernan 2003; Chan et al. 2011**); commitment to peers has the strongest tie to lateness, and commitment to teams has the most powerful links to citizenship behaviour within the team and team performance (**Becker 2009**).

It is believed that workers that perceive high levels of meaningfulness within their workplace tend to exhibit high levels of commitment, involvement, and concentration of energy in their tasks. Also, **Eaton (2003)** and **Lyness et al. (2012)** finds that when workers have control over time, pace and place of work, it has a positive impact on perceived productivity and organisational commitment. Consideration of work commitment based on organizational tenure and positional tenure is further justified because research has indicated the relative strength of a worker's identification with and their commitment to work in a particular organization. Positional tenure tends to reveal a pattern of increased commitment as length of time in the job increases.

Conditional Commitment (Continuance)

This is when workers feel a sense of commitment to their company because they feel they have to remain and for the worker to do otherwise would be to forgo favourable levels of personal status, seniority, remuneration, work schedule, pension, and other benefits

already acquired. None of the workers interviewed during the validation phase displayed this element of commitment. However, in circumstances where a worker shows such signs of commitment, **Appendix 9, Table 14** page **178** of Conditional Commitment (level 1 – 33.3%) identifies some of the requirements and instructions for helping a worker within this level.

Compliance Commitment (Normative)

Any organisation with a workforce composition that displays compliant or normative commitment will get the job done and with acceptable results, but their goal will not exceed satisfactory results or achieving exceptional outcomes. Such set of workers are obliged to work to the rules due to investment in training, rewards and other benefits. Workers with high compliance commitment stay in the company because they believe it is the right and moral thing to do. A worker who the company has contributed to their career growth (e.g. company's financial support of worker education, mentoring) will feel a moral sense of obligation to give back to the organisation in return by been compliant. The interviews identified some of the attributes of compliance based on the comments from workers to questions that were asked. Extracts from the interviews show that 50% of the statements (11 workers) were classed within the compliance level (level 2 - 67%):

“First day I started here it was brought to my attention that the company took H&S very seriously; we’ve not had the cause for concern. If I see something unsafe I’ll need to report it; it’s something you won’t like to see; a wee word in somebody’s ear can make a difference or letting the people know that what they are doing is wrong. I speak when asked, I have never had the reason to speak about H&S because everything gets spoken for me; when we do meetings they tell you what is going good on the job but if I see something going wrong I will definitely speak up”

“Yeah in terms of deadlines and proximity to potential hazards. If I thought it was specifically dangerous I won’t do it, I will suggest it’s not possible because.....if I am able to highlight the risks I don’t think anybody will oblige me to carry on. If I see anything unsafe and I was stood next to somebody in authority I will tell them directly, if not I’ll have to find somebody in authority or phone somebody, I suppose depending on where it was I will have it stopped. No problem speaking about it”

“If I spot something unsafe I will tell them to stop it or do my best to stop it, step back and have a look at it. If I am not happy or don’t agree with something that’s not right I will say it”

“I’ll probably say something to them first, I wouldn’t be going to putting a card in whether that’s right or wrong, and it’s their choice to accept or ignore me. Not really, I’m more of a quiet person but if I felt I needed something to do a job safely then I would ask for that”

“I’ve not taken any risk here and I have not seen anyone taking any stupid risk here; not yet. As soon as I see it depending on where it was I’ll let someone know, I wouldn’t walk away I

will stay there and make sure no one else gets near it. I'm vocal. Every day, from putting signs on bins to segregating the waste to helping the cleaner, the fencing outside in the street; making sure pedestrian signs are up"

"The job here is reasonably safe, the segregation is what I'll say is minor and there is a lot of plant on the job. For example like people using their stihl saws and not using their goggles, I'll stop it; if there is anything I'll stop it I wouldn't walk past. You've got to say something. I like to make sure people are clear from the machine areas when swinging the arms"

"Nothing. I'll report it; I might not have the authority to tell someone to stop so I'll report it. I'm very vocal you can ask anybody about that. I don't think I've done anything to improve H&S, you just go about your job"

"There are certain times when you have to keep pushing, but 9 times out of 10 everything is bang on; if it takes an extra half day that's the way it is. I'll go over and say something, the boy might tell me to f-off; and then you can go to the line manager. I'm 50/50 vocal. Using a hose rather than a jet wash to keep the dust down"

"The guy won't be here; if a guy works on a ladder without the mat or D-wheels, he's going home; I'll say to him off the site, I'll say to him go to the office tomorrow and tell them what you did. I feel the most important thing is to keep telling them about H&S every day to use their kits until they get sick of me saying it, you can never become complacent with H&S"

"Give him a bit of advice; if they don't take the advice it's up to them. If I've got an issue I'll raise it if it will let me do my job safely. None, nothing done to improve H&S"

A worker that displays compliance commitment will simply obey by doing what is required of them but no more than the legal requirement. Typically, the worker will undertake just enough to keep their role. **Appendix 9** of the managerial guidance for Compliance Commitment (level 2 – 67%) identifies some of the requirements and instructions for helping a worker within this level (**Table 14**, page **178**).

Citizenship Commitment (Affective)

Citizenship commitment refers to workers' psychological attachment to their organisations caused by the workers' identification with the objectives and values of their organisations. This reflects the loyalty of the worker to the organisation and the ability of the worker to fulfil and satisfy their needs at work. Citizenship commitment above and beyond compliance is where workers proactively promote safety messages and derive some level of enjoyment and satisfaction from contributing to improving the H&S standards within their workplace. The validation interviews revealed some of the attributes of citizenship commitment based on statements from the workers as a response to questions that were asked. Extracts from the interviews show that 50% of the statements (11 workers) closely aligned with the citizenship commitment level (level 3 – 100%):

“Not really seen anything unsafe on this site, but if I see I will shout and say stop what you’re doing. I am vocal when I know something is not right. Being more careful at certain times of the day because of kids, last thing you want to do is hurt someone’s kid; odd times are men that have left the side and left a void. If I am not busy I will help somebody out”

“When I see something unsafe I’ll fix it. I am more vocal than ever since I had the H&S training; I have men come up to me and point something out to me, I act on it right away. I was involved with a colleague that had a bad accident in the delivery H&S workshop to tell his own story; if I wasn’t doing things safely the lads won’t do it safely”

“If I can tend to it, I wouldn’t want to leave it unsafe and go for a tea break and come back and discover someone is injured; if I can’t fix it I will bring it to somebody’s notice and it will be dealt with. I am fairly vocal. None, if I can’t deal with it there and then and make it safe, I will bring it to my colleagues’ attention and if we can’t fix it we take it to the line manager and he’ll get it dealt with”

“If one of my workmates is working unsafely I will stop them and tell them there is no reason for this for example when cutting the grinders you’ve got your goggles and your glasses, you forget very easily to put on your goggles because you’re changing both. If I need to speak I will speak up. Working down on the silo base, I put in a steel meshing and I cut a sheet of ply to cover the box so we don’t walk by inside and hurt ourselves”

“I will sort it out, I’ll try not to walk by but it’s difficult sometimes when it’s not your area of expertise. I am very vocal both ways, up the chain and down. I conducted the lifting forms this morning with the guys, we had a good chat for example when lowering a load down the shaft; we have to sound the alarm to let everyone know a load is coming down. The pit bottom guy don’t hear the sound of the horn and he has asked for a different system for e.g. flashing lights, so we are looking in to get visual and audible sounds”

“If I can rectify it myself then I will, if not I will try and get hold of somebody, a supervisor or whoever is in charge of that area and get it to their attention, it will have to stop until its sorted. I am vocal and I think everybody is if there is a machine moving and you’re in the walk way somebody will say get out of the way regardless of who you are. I fixed the emergency exit gate in the tunnel that was opening in the wrong direction which could become a problem during evacuation”

“It’s not been as prevalent here, if we set a date and it’s not going to happen, as long as we communicate that, we’ve not had reasons to push ourselves to the point, worst here on this site is working weekends to hit the target rather than cutting corners, in the past cutting corners has happened in terms of segregation for e.g. during installation of precast panels and you start forgetting things around you. If I see something unsafe I’ll action it immediately by stopping and sorting it, but depending on the scale, if it’s on a bigger scale then it will be directed up the line to supervisors, managers. If it’s a subcontractor then I’ll

find a way to action it. As vocal as anyone, I like to do things safely and right, I'm pretty vocal. Working on the coffer dam, access was a bit of an issue so it wasn't the best and we reassessed what we were doing, sorted out a new access"

"I'll fix it there and then or I'll stay at it until I get somebody out that should be fixing it. You need to be vocal because if I see something and I walk pass it, I can be held responsible for it and even in the court of law too. The machine clipped the barriers in a way that it was close to an 8ft hole on the bottom of the fence and part of the hole was showing, so I had to rearrange all that"

"Deadline is the main thing, unnecessarily bringing dates forward and by doing that you put in an influx of men in a small area which is just an accident waiting to happen. But I wouldn't put myself in the position to work unsafely neither will I put somebody. I never walk by anything if it's something I can fix myself, or report it to somebody if I can't fix it. Probably one of the most vocal on site; if something needs to be said I'll say it, it doesn't really bother me who I upset. The guys were putting in shutters and I spoke to the joiners to check the guys are going down through a barriered access, I got the scaffolder to create an access route"

"We worked with demolition guys where we had lots of dust and fume coming into the tight space; I stopped the job until we got the extraction system put in place. I will stop the work until it's made safe or if there is another way of continuing to work somewhere else until that is made safe; our motor in [Company name] is 'don't walk by'. I think am not too bad to be honest, if I've got any H&S issue it's easy. Going through any changes in RA with the guys; if it's a visual thing you stop it e.g. trailing cables from generators are common occurrence and we move things around to avoid trip hazards"

"I will make sure they stop and tell them what to do; you're responsible for yourself but also for others. I am vocal with everything to be honest; if I'm not happy I'll tell them. I've done my IPAF refresher course making sure I don't forget how the job should be done making me realise the hazards"

Workers who experience some form of career growth by working on tasks that are related to their career goals have the tendency to learn new things and grow professionally. These set of workers have been positively associated to display citizenship organisational commitment. However, there is contention that citizenship commitment will be higher for workers whose experiences with their employers satisfy their needs than for those with less-satisfying employer experiences. Also, workers that have been with their employer over a period of time tend to show more citizenship commitment than workers that have been with the organisation over a shorter period of time. Such long-term serving workers perceive that the organisation is willing to reward them for their efforts and they in return will display higher levels of citizenship commitment. Equally, workers who perceive some elements of difficulty in achieving their career goals, and are assigned responsibilities that

will impede their growth will see little connection between their efforts and the rewards from their employer. Therefore, such a worker will display lower level of citizenship commitment or just compliance.

A worker who displays elements of citizenship commitment will tend to spend more time and effort outside of normal work hour thinking about their work and solving problems, finding proactive solutions to get the job done, seeking out new insights, and then acting on them. Such a worker will display at a fundamental level, some degree of intrinsic motivation. However, a motivated worker with citizenship elements of commitment can become uneasy if their manager is someone they don't trust and respect. Managers and supervisors can either build or undermine the level of trust in a number of ways, because their integrity play a major role regarding their doing what they say they will do; and being the kind of person they say they are.

For worker engagement to be truly perceived within the workplace, and for commitment to thrive, the culture of an organisation plays a significant role. An organisation which asserts certain core values but have managers or supervisors clearly undermining those values will result in extensive cynicism and disengagement within the workforce. This also aligns with 'integrity' within the trust framework, which leads to a loss of trust and respect for organisational values. Workers therefore will embrace engagement when they truly believe in what they are doing; believe they are making a difference and believe it is genuine.

CHAPTER SUMMARY

The maturity model's five indicators were developed using data from 28 workers and validated using data from 22 workers across 15 sites. Validation workers were classified as either highly (11) or averagely (11) engaged based on specific selection criteria. The results were analysed in relation to these two categories so the rankings in the model could be assessed for their ability to separate average from highly engaged workers.

The five levels of meaningful discussion indicator were assigned weightings of 20% each. A total of 16 workers scored 60% or lower and 6 scored above 60% and rated high for this indicator.

The four levels of the empowerment indicator were assigned weightings of 25% each. A total of 11 workers scored 50% or lower and 11 scored above 50% and rated high for this indicator.

The four levels of the trust indicator were assigned weightings of 25% each. A total of two workers scored 50% or lower and 20 scored above 50% and rated high for this indicator.

The three levels of the motivation indicator were assigned weightings of 33.3% each. A total of 10 workers scored 66.7% and 12 scored above this and rated high for this indicator.

The three levels of the commitment indicator were assigned weightings of 33.3% each. A total of 11 workers scored 66.7% and 11 scored above this and rated high for this indicator.

All highly engaged workers were included in the highest scores for each of the five indicators. None of the 11 workers in the averagely engaged group scored above the 11 in the highly engaged group. In two of the five indicators ('empowerment' and 'commitment') the 11 average and 11 highly engaged workers were perfectly identified. All highly engaged workers were included in the highest scores for 'trust' and 'motivation'. The 6 workers scoring above 60% for meaningful discussion were all from the 11 highly engaged group, the remaining 5 scored in the next level down (60%). These results show that even though the phenomenon being assessed is highly subjective, a strong degree of objectivity has been achieved. The criteria are sensitive enough to distinguish between average and highly engaged workers.

CHAPTER 8 USER GUIDE: A WORKER ENGAGEMENT MATURITY MODEL

INTRODUCTION

The purpose of this user guide is to demonstrate how to use the Worker Engagement Maturity Tool. These instructions will help anyone involved in carrying out the assessment process and how to meaningfully improve engagement with workers on construction sites to improve health and safety. The CDM Regulations 2015 raised the issue of worker involvement on projects which should be set out in the construction phase plan of Appendix 3 of the L153 document. A review of the guidance however does not proffer holistic and practical approach to helping organisations adopt 'worker involvement' in projects and this is also missing from the HSE's Leadership and Worker Involvement toolkit, see **(Bell, et al., 2015)**.

Participation for the worker engagement maturity assessment should be voluntary and it involves categorising the maturity levels of workers. The target audience are operatives and supervisors that have been identified as engaged or those who merely work on the site. The process of conducting the interview should be discrete with individual worker; non-invasive; open-ended and the result will represent an individual worker score. However, the more the workers are involved in the interviews and assessment process, the better the overall result for the organisation. The interview takes between 30 to 40 minutes and should be conducted within the workers site location. The involvement of subcontractors and casual workforce like agency workers is also recommended. During the process of facilitating the interview sessions for each of the indicators, every response, statement and comment from the worker is valid and every worker perceive situations slightly differently.

USING THE FIVE INDICATORS TO ASSESS SITE OPERATIVES LEVEL OF ENGAGEMENT

To improve the working relationships and opportunity for engagement between workers and management and to further improve workplace safety; the worker engagement maturity framework is made up of five indicators which can be used altogether to assess the levels of engagement within the workplace. These are **meaningful discussion, empowerment, trust, motivation** and **commitment** of the workforce. It is essential that these five indicators are used as a tool for measuring the levels of engagement of the workers within the organisation.

The managerial guidance document for operatives (**Appendix 9**) can serve as a useful resource to consult during the engagement process. This is useful for encouraging the workers, supervisors and managers to care more; involve more; and engage better with the entire workforce. This document was designed using extracts from the HSE Leadership and Worker Involvement Toolkit seven steps and other freely available literature.

WHO CAN PARTICIPATE AND RANGE OF EACH INDICATOR?

The participants are all site-based workers; i.e. employed operatives, sub-contractors and agency staff. Also, participants that are trade union safety representatives or safety champions should be clearly acknowledged to the independent assessor. This is important because they have the capability of outperforming other workers as a result of their role and involvement within the workplace. Please note that the targets for this assessment are operatives and some supervisors but not managers.

The framework (based on descriptive questions) should be able to assess overall performance of workers based on organisational and project level characteristics. The aim will be to assess every participant on a percentage basis dependent on the different maturity levels for each indicator and getting the worker to the highest levels for each indicator over time. The overall performance of individual worker for any organisation on a specific project can be represented using a radar chart to give a pictorial overview of where the worker is for each indicator.

The meaningful discussion maturity is based on five levels (**Figure 2** page **61**) and each of the level represents 20% maturity. Level 1 (personal work area) account for 20% while level 5 (beyond the site gate) represent 100% maturity along the continuum. For a worker to be regarded as 'highly engaged', the essential criteria and requirement will be 80% to 100%.

The empowerment (**Figure 3**, page **64**) and trust (**Figure 4**, page **67**) maturity are based on four (4) levels of growth along the continuum. Level 1 accounts for 25% while level 4 represents 100%. For workers to be classed as 'highly engaged', the essential criteria and requirements will be 75% to 100%

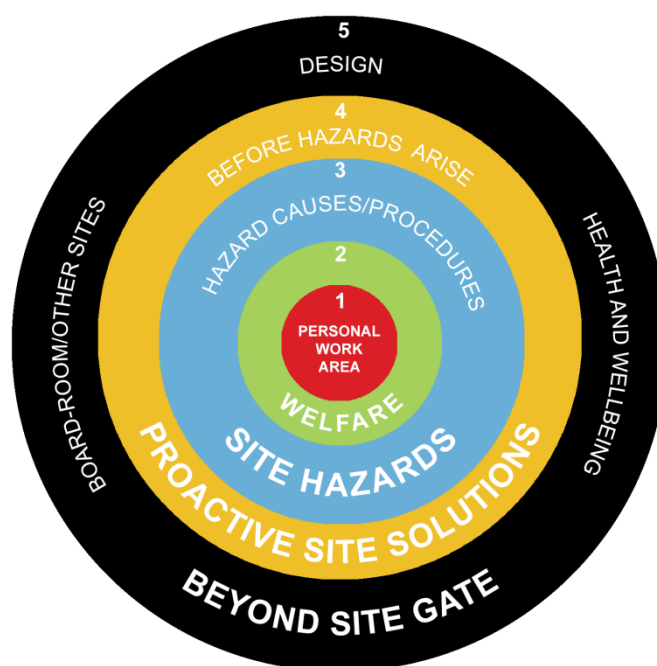
The motivation (**Figure 6**, page **73**) and commitment (**Figure 7**, page **76**) indicators both have three (3) levels of growth along the continuum. Level 1 represents 33.3%; level 2 is 66.7%; and level 3 is 100%. Workers that are classed as highly engaged will need to fulfil the requirements of 100% while an averagely engaged worker will be 66.7% along the commitment continuum.

HOW TO CONDUCT THE MATURITY ASSESSMENT

The worker engagement maturity model addresses the need for workers to progress from a lower level to a higher level of maturity within the maturity framework. To conduct the assessment, use the five indicator dartboards with associated explanatory notes to rank the different comments from construction operatives and supervisors and their best fit within the framework (each ring on the dartboard).

MEANINGFUL DISCUSSION

Meaningful Discussions Level	Explanatory notes
1. Personal work area; housekeeping; and work environment	Hazards that directly affect/related to the worker
2. Welfare	Issues related to site welfare facilities
3. Hazard spotting; site hazards; and hazard causes/procedures	Hazards that are associated to other workers, reporting unsafe acts and conditions
4. Proactive site solutions	Proactive discussions or proactive actions taken to resolve issues
5. Beyond the site gate: boardroom/other sites; designs; and mental health	Issues that are beyond the site gate needing some management or designer action



Meaningful Discussions Assessment

QUESTIONS	ACTIVATORS	PROBABLE RESPONSE
Are you able to communicate with your manager/supervisor about H&S?	Is English your first language?	Yes or No
Describe what H&S issues you discuss with your manager/supervisor	Housekeeping, welfare, rules, planning, policy, design	Housekeeping e.g. untidy work area No running water in canteen PPE rules not adhered Lifting operations with feedback on all lifting plans Health and safety policy or design issue

Guidance on using and ranking worker's Meaningful Discussions

In carrying out this assessment, the questions form a continuum which means a worker might not have issues with e.g. personal work area or welfare because these are well managed on site. Such a worker might go straight to discussing issues such as hazard spotting, proactive site solutions or issues beyond the site gate. A worker of this calibre would rank higher along the continuum.

Examples:

If the comment from the worker on Meaningful discussion reflects only 'Personal work area' without going above and beyond; the worker would be ranked in Level 1 based on the answers provided to the questions.

If the comment from the worker reflects any of the elements of personal work area and with emphasis on welfare but does not beyond, it would be ranked in the 'Welfare Level 2'.

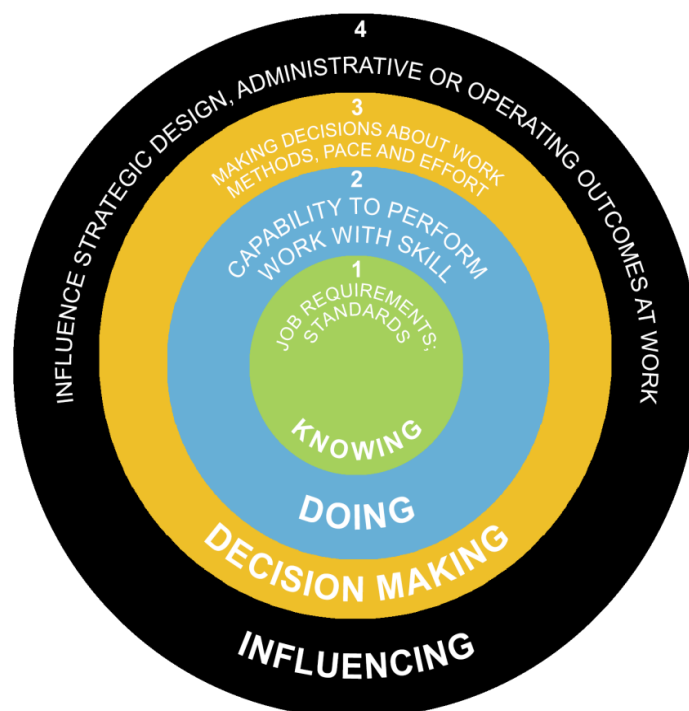
If the comment from the worker addresses any of the issues at levels 1 and 2 and with emphasis on 'Site hazards' but does not go beyond, the worker would be ranked in 'Site Hazards Level 3'.

If the comment from the worker addresses any of these issues related to levels 1, 2 and 3 and emphasis on 'Proactive Site Solutions' but does not go beyond, the worker would be ranked in 'Proactive Site Solutions Level 4'.

If the comment from the worker addresses some of the lower level issues but with emphasis on issues that are 'Beyond Site Gate – Level 5', such a worker would be ranked as Level 5.

EMPOWERMENT

Empowerment Level	Explanatory Notes
1.Knowing	Worker's beliefs and values for health & safety is important, the worker knows the rules and how to behave but refuse to take action
2.Doing	Worker has the skills, competence, and ability to successfully perform a task to standard
3.Decision making	Worker is proactive about selecting work procedure, pace and effort
4.Influencing	Worker making a difference through recommendations and decisions that can influence organisational results.



Empowerment Assessment

QUESTIONS	ACTIVATORS	PROBABLE RESPONSE
Can you describe what is needed for you to carry out your task safely?	What information, tools and equipment	Training, skill, correct work equipment etc.
Can you describe how you are supposed to do your work safely (for a specific task)?	e.g. Working at height	Description of the planning, carrying out all risk assessment/method statements related to task
Can you describe what training you have had that helps you work safely?	Technical and H&S training	Involved in industry-recognised training specific to the operative's role such as SSSTS, WAH, Manual Handling, asbestos awareness, Prefabricated Access Suppliers' & Manufacturers' Association (PASMA) ticket for mobile scaffolding etc.
Can you describe when you had to solve a safety problem?	e.g. if you see a trip hazard	Materials in designated waste collection area blocking vehicle access routes removed to different location
Describe how you plan your work with H&S in mind	e.g. pre-start briefing	Pre-start meetings; identify any hazards associated with task; plan and risk assess the task
What opportunities do you have to influence decision making in terms of H&S?	e.g. PPE, tools and equipment, methods	Freedom to advise and recommend correct PPE and tools most suitable for the task Involved in inspections, audits, and accident investigation
What opportunities do you have to influence decision making in terms of H&S?	Policies, design, work-life-balance	Confident to raise health and safety issues about work procedures, question policies and designs

Describe how senior management support your suggestions?	Are you or your representative consulted on H&S policies before they are put in place?	Grassroots meetings, H&S committee meetings, Safety Rep meetings, Stand down days etc.
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Guidance on using and ranking worker's Empowerment

Examples:

If the comment from the worker on Empowerment reflects only 'Knowing'; without going above and beyond; the worker would be ranked in Level 1 based on the answers provided to the questions.

If the comment from the worker reflects any of the elements of 'Knowing' and with emphasis on 'Doing' but does not go beyond, it would be ranked in the 'Doing Level 2'.

If the comment from the worker addresses any of the issues at levels 1 and 2 and with emphasis in 'Decision making' without going beyond, the worker would be ranked in 'Decision making Level 3'.

If the comment from the worker addresses any of the issues related to levels 1, 2 and 3 and with emphasis on influencing operating and organisational outcomes, the worker would be ranked in 'Level 4 Influencing'.

TRUST

Trust Level	Explanatory Notes
1. Lack of Trust	Absence of ability, benevolence and company integrity. Worker only trusts him/herself
2. Ability	Trust in the ability of others to work safely and without problems
3. Benevolence	Genuine, company cares about worker; 2-way relationship; just culture
4. Company Integrity	Confident that raising H&S concerns will be praised; honesty; do what they say; management approachable and respected



Trust Assessment

QUESTIONS	ACTIVATORS	PROBABLE RESPONSE
Who on site do you think is competent when it comes to H&S?	Team, gang, other workers, management	My gang have the right experience and training and they observe all safety rules All workers work to the same standards
Which workers on site do you think work to the same H&S standards as you?		
How fair do you think you are treated?	Provided right conditions and equipment	My manager/supervisor treat me with respect and always looks after me
Why do you think management wants to keep you safe and healthy?	Legislation or moral/ethical reasons	Because they genuinely care about my safety. For avoidance of fines and claims
How confident are you to raise H&S issues with your managers or supervisors?	Is reporting near misses encouraged?	It is encouraged and praised. I can speak directly to my manager and I'll be given advice on any health and safety issues. Other managers understands that any safety issue raised is a genuine point
How often do management do what they say regarding H&S?	Do they follow through on promises about H&S?	The management are really proactive, e.g. leading by example

Guidance on using and ranking worker's Trust

If the comment from the worker on Trust reflects only 'Lack of Trust' without going above and beyond; the worker would be ranked as Level 1 based on the answers provided to the questions.

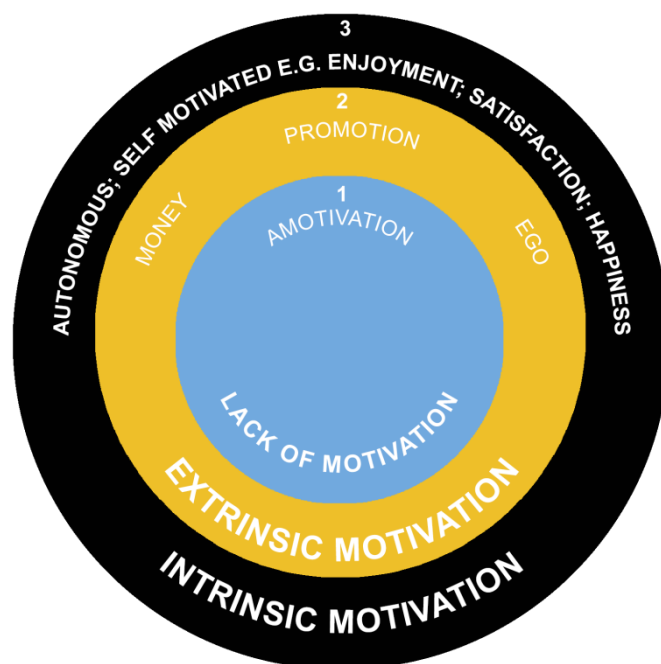
If the comment from the worker strongly demonstrates trust in the 'Ability' of other workers but does not go beyond, it would be ranked in the 'Level 2 - Ability'.

If the comment from the worker addresses any of the issues at levels 1 and 2 and with strong emphasis on 'Benevolence' but does not go further, the worker would be ranked in 'Level 3 - Benevolence'.

If the comment from the worker addresses any of these issues related to levels 1, 2 and 3 and with stronger emphasis on 'Company Integrity' issues or more, the worker would be ranked in 'Level 4 Company Integrity'.

MOTIVATION

Motivation Level	Explanatory Notes
1. Lack of Motivation	No motivation or will to do a task
2. Extrinsic Motivation	Personal goals; to avoid guilt or anxiety; to attain pride or ego; organisation driven; reward; external demand
3. Intrinsic Motivation	Natural, job satisfaction; happiness; enjoyment, competence, independence; self-motivated



Motivation Assessment

QUESTIONS	ACTIVATORS	PROBABLE RESPONSE
Is there anything you would put before H&S?	Productivity or earning more money	We'll go elsewhere for a job since H&S is important to your company. I'm here to make money; not bothered about H&S. I'm on price work, I need to work to pace.
Explain the reasons why you might work safely	Enjoyment; it's the right thing to do; rewards or incentives; avoid discipline	I work safely because the law requires me to. I work safely because I enjoy my job. The welfare of my guys and myself makes me work safely. Working to get a position within the office. Possibility of a promotion, and also some sort of bonus scheme.
How does working safely make you feel?	Happy, sense of achievement	It makes me happy knowing there is no incident. Make an honest day's living and go home

Guidance on using and ranking worker's Motivation

If the comment from the worker on Motivation reflects only 'Lack of Motivation' without going above and beyond; the worker would be ranked in Level 1 based on the answers provided to the questions.

If the comment from the worker reflects a strong emphasis on 'Extrinsic Motivation' but does not go beyond, the worker would be ranked in 'Level 2 - Extrinsic Motivation'.

If the comment from the worker addresses some of the lower level issues and with stronger emphasis on issues of 'Intrinsic Motivation' or more; the worker would be ranked in 'Level 3 - Intrinsic Motivation'.

COMMITMENT

Commitment Level	Explanatory Notes
1. Conditional Commitment	Worker shows commitment only when certain conditions apply; worker's commitment is dependent on self-interest; changeable based on situations
2 Compliance Commitment	Worker is obliged to work to the rules due to investment in training, obey rules for mutual benefit, rewards etc.
3. Citizenship Commitment	Worker shows commitment above and beyond compliance e.g. proactively promoting safety message; enjoying the work and satisfaction from contributing to improved H&S standards



Commitment Assessment

QUESTIONS	ACTIVATORS	PROBABLE RESPONSE
Describe anything that has prevented you working safely on this site and what you did	Handover targets, keeping your job	Stopped the work immediately. Continued with the work to meet deadlines.
Describe what you do when you see something unsafe?	Report it or fix it	Report – Compliance Fix it - Citizenship
How vocal are you about H&S?	Attending safety/committee meetings	I discuss H&S issues as part of my job I'm quite big about H&S
Describe something you have done recently to improve H&S	Recommendation to your manager	Advised manager to provide a work platform that prevents falls (e.g. scaffolds, MEWPs) for work at height activities instead of ladders

Guidance on using and ranking worker's Commitment

If the comment from the worker on Commitment fulfils only the requirements of 'Conditional Commitment' without going above and beyond; the worker would be ranked in Level 1 based on the answers provided to the questions.

If the comment from the worker reflects any of the elements of conditional commitment and strongly emphasises 'Compliance Commitment' but does not go beyond, it would be ranked in the 'Level 2 Compliance'.

If the comment from the worker addresses some of the lower level issues but with emphasis on issues that are related to ‘Citizenship Commitment’ or more; the worker would be ranked in ‘Level 3 Intrinsic Motivation’.

It should be noted that the commitment of the workforce as a factor of worker engagement strongly aligns with the behaviour of the workers (‘commitment’ = ‘behaviour’).

COMMENTS

The investigator/facilitator should encourage the workers to share examples and experiences based on the actual project which they are been asked about. This provides each worker within the workplace the opportunity to reflect on the issues and how it relates to their own behaviour. The investigator should also be sensitive and aware that some workers may be affected by some of the topics under discussion and may not be willing to cite examples for fear of retaliations e.g. as evident in workers being blacklisted.

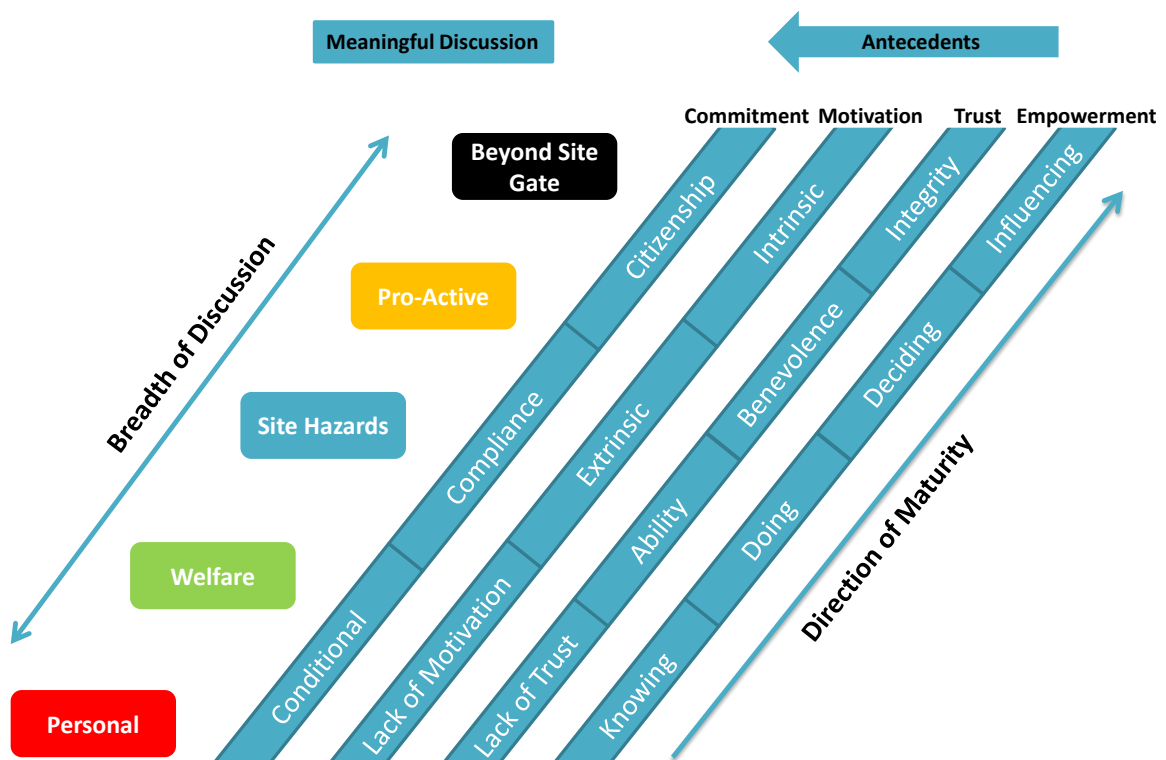


Figure 20: Completed Worker Engagement Maturity Model

CHAPTER 9 CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

This study developed a Worker Engagement Maturity Model towards improving occupational health and safety within the construction industry. A previous GCU study led to the development of outline criteria for a 'Worker Engagement Maturity' as part of CITB/HSE guidance for CDM 2007. One such criterion was 'meaningful discussion' which this study has further reviewed, developed and validated. Meaningful discussion relates to the quality of subjects discussed by workers. The significance of reviewing the concept of meaningful discussion is in its criticality to the phenomenon; if the issues being discussed are superficial i.e. 'window dressing' or if it relates to real issues that are capable of significantly improving OSH performance. Also, the development of the worker engagement maturity model further led to assessing other behavioural and psychological factors that contributed to the development of the model.

To achieve the project aim, the following objectives were delivered in this study:

1. Mapping the maturity stages a worker goes through in improving OSH engagement;
2. Building a framework to measure progress in engagement;
3. Assessing 'meaningful discussion' in relation to OSH engagement;
4. Validating the maturity model and developing user-friendly tool(s); and,
5. Using tools based on the model to assess 'worker maturity' in OSH engagement.

Achieving these objectives required an extensive literature review of academic and industry relevant publications, review of extant theories from the fields of psychology relevant to worker engagement, developing and building on these concepts and aligning them with the study objectives. This approach necessitated the development of the worker engagement maturity model with key 'indicators' as follows:

- Meaningful discussion
- Empowerment
- Trust
- Motivation, and
- Commitment

In order to validate the worker engagement maturity model contractors in consultation with their workforce volunteered their workers to participate in the research. The contractors engaged their workforce within the operatives and supervisory level.

LESSONS LEARNED

The five key worker engagement maturity indicators have been developed with a focus on evaluating the maturity levels of workers as an individual, within a specific project and organisational focus. The expectation was that these five indicators combined together can

be used in determining the engagement levels and growth maturity of workers over a period of time.

Generally, the main methods of benchmarking using this worker engagement maturity model have been shown to have three forms: **people or worker**, **project** and **organisation**. People or worker benchmarking concentrates on understanding how one worker compares with another. Project benchmarking can compare one or multiple project performance with others and organisational benchmarking, which is applicable to the construction project organisation and Health & Safety management, enables organisations and their management processes to be viewed as a series of holistic transformational events with identifiable inputs and outputs. The focus of this is on organisational performance processes and achievement of outputs against planned indicators. It requires the commitment of management towards providing resources and effective communications, coupled with an open and 'no blame' environment in which problems are resolved through consultation and the use of shared knowledge and learning. The worker engagement maturity model for the improvement of construction OSH can be repeatable on different construction sites and projects; workers and organisations. This has the ability of measuring workers' growth and effectiveness (inferring that engaged workers are better able to perform well) and the opportunities to improve OSH performance which is beneficial for the entire organisation.

TYPE OF MEASURES

The specific type of qualitative design useful for the worker engagement research was the phenomenological research design normally associated with philosophy and psychology whereby the researcher describes the lived experiences of the individuals about a phenomenon as described by the participants. This type of description concludes in the core of the experiences for multiple individuals that have all experienced the phenomenon.

Getting access to the different construction sites and frontline workers was facilitated by the research Steering Group members. A purposeful sampling strategy for construction sites and workers was utilised, selecting from a pool of site options made available via the research Steering Group. These sites included house building to large scale civil engineering projects and workers from a pool of site options available across the UK. The researchers initially began by reviewing and gathering detailed information on worker engagement from literature and then formed these into themes to a generalised model. These themes were further developed into specific patterns or generalisations that emerged inductively from interviews and analysis focused on the personal experiences of the frontline workers. The interview assessment was used to identify and develop a framework for the worker engagement maturity model for construction workers. The researchers were interested in mapping the emerging issues and how they aligned with the themes of **meaningful discussion, empowerment, trust, motivation and commitment** of engaged workers (identified in the earlier literature review).

Initial categorisations of statements extracted from the interviews with frontline workers were based on the framework developed for assessing the maturity levels of workers. The rankings of the statements from operatives and supervisors extracted from the interviews went through an iterative process with the expert focus groups using the Delphi technique. The validation of the framework and categorisations was done through workshops with members of the Steering Group iteratively.

VALIDATION

For the validation of the framework, contractors in consultation with their workforce volunteered their workers (22) to participate in the research. The contractors were encouraged to volunteer their engaged workforce especially within the operatives and supervisory level. The engaged operatives are regarded as workers who are either interested in health and safety issues; contribute to H&S and regularly attend H&S meetings; whilst engaged supervisors are those who encourage engagement within and outside the workplace and regularly discusses Health and Safety issues with other workers.

The criteria in place for workers being sought for the 'validation stage' interviews were classified as 'highly engaged' (11) and 'averagely engaged' (11) workers; direct employees or subcontractors. The aim of the validation interview was to involve at least two workers each from same site which employers will identify to an independent reviewer as 'highly' or 'averagely' engaged workers. The workers identified as highly and averagely engaged were not known to the researchers conducting the interviews but only to the independent reviewer. Also, employers were requested to discretely identify workers that were Trade Union safety representatives or safety champions to the independent reviewer.

SYNOPSIS OF RESULTS AND INDUSTRY IMPLICATIONS

Meaningful discussion – It was identified that meaningful discussion between workers, co-workers, supervisors and managers was fundamentally dependent on the management principles and policies. The development of meaningful discussion criteria was adopted in assigning levels of issues that were frequently discussed, raised or flagged up by the workers. The criticality of the issues identified; the impact on workers; and the relative meaning of such issues such as welfare, housekeeping, hazard spotting etc. were all captured in the meaningful discussion validation results for all 22 workers.

Meaningful discussion was an integral part of the work activity within the industry and the validation result shows that the core of the subjects discussed varied from issues related to personal work area to some issues considered as beyond the gate. Personal work area and issues related to welfare which is considered significantly important to the workers were discussed by minority of the workers which suggest that the management have significant control over welfare and PPE issues and satisfies the basic needs of the workers. Issues related to 'personal work area' are normally considered as the starting point of meaningful discussion and it is only when such issues related to personal work area and welfare have

been addressed and there is that element of trust in the management to act on problems, that a worker will have the confidence to raise other immediate issues or hazards associated with their tasks.

The engagement of management with workers in resolving immediate issues like housekeeping, personal work area and work environment issues will reinforce some sense of empowerment, meaning, competence, impact and belief that they are being listened to. This is when workers feel empowered and emotionally committed to identify and raise other issues that pose as hazards to themselves and others e.g. issues like hazard spotting; identifying site or work related hazards; risk assessment; accident investigation; equipment design and selecting PPE and equipment. Issues beyond the site gate like mental health and boardroom level issues were not captured during initial data collection and development of the framework and the validation of the framework thus show few supervisors discussing these issues. This is hardly surprising as 'beyond the site gate' issues are more advanced levels of meaningful discussion and therefore will be unusual for operatives to discuss such high level issues until full maturity is gained over time.

The result from the validation shows that the level of mutual understanding between workers on construction sites as well as the close coordination and communication of design issues and issues beyond site gate e.g. related to health and wellbeing are rarely considered by site operatives. Although there seemed to be no significant barriers to communication between workers and management; issues that were relevant to design professionals, Construction Phase Plan and contractors were not fully discussed. This gives a sense of the level of reach of the workers in terms of identifying such problems and cascading to the relevant level. From the interviews conducted, site inductions, toolbox talks and pre-start meetings were considered by the workers as a critical point for the communication of health and safety information between management and the workforce. However, the opportunities for two-way communication that relates to the mechanisms that are required to impart information to workers and elicit their views in a systematic, but not necessarily formal manner is considered still lacking. It is worthy to note that meaningful discussions are taking place but, the level of reach of such discussions needs to go wider and farther and more inclusive of the operatives and supervisors. For the operatives and supervisors to meaningfully discuss issues up to Level-5 of the meaningful discussion indicator, they will need to have the requisite skills, experience, competence and training.

Empowerment – Empowerment perceptions reflect the characteristics of an organisation and these perceptions emerge from a psychological process in which workers ascribe meaning to the structures and practices occurring within their workplace or organisation. The development of empowerment criteria was adopted in assigning levels of issues perceived by the workers that have empowered them or made them feel empowered in relation to their work activities. The criticality of the issues identified; the impact on workers; and their relative perception of such issues such as 'knowing' the value of a work

goal; 'doing' a given task with some level of capability; 'decision making' about work activities and methods; and 'influencing' certain work or organisational outcomes were all captured in the empowerment validation.

The results from validation indicate that all the workers involved in the validation process knew the value of their work goals based on their own values, beliefs and standards within their workplaces. This may result in greater homogeneity among workers' in terms of personalities, attitudes, and values which further enhances greater consistency about their perception of their employers.

The validation of the 'doing' level show that the workers know the requirements of their tasks, they have clarity regarding goals and work procedures, and their areas of responsibility but lack the power to make some strategic decisions.

The need for an empowering work environment offers choices with clear consequences; recognizes the problems facing the worker; and provides a reason to act is important when workers need to make decisions around the tasks they undertake. The criticism that often comes with decision making is the idea that management is seen as pushing responsibility onto workers, and with it comes liability if things go wrong. The ability to make decisions as an empowered worker include having absolute control over work pace, and the ability to contribute to the development of risk assessments and method statements in '*partnership*' with management. Lack of appropriate authority/discretion, limited participation in programs, meetings, and decisions that have a direct impact on job performance and lack of necessary resources potentially lowers the decision making of workers.

The workers' own understanding that they can directly influence some strategic, administrative, and operating outcomes within their workplaces has the ability to drive their attitudes and behaviours. For example, clear vision and well-defined goals, roles, and procedures define some level of autonomy within the workplace. When managers are open-minded with such practices, it can help workers to exercise autonomous actions and influence which can be associated with greater feelings of self-determination and impact. A workplace with clear goals, responsibilities, and procedures can help facilitate effective teamwork, cohesion, coordination, and resolving conflicts within work teams. Lack of network-forming opportunities, high rule structure, low career advancement opportunities, lack of meaningful work goals/targets and limited contact with senior management can significantly impact on the ability of the workers to influence decisions.

Although the origins of empowerment perceptions are personal, it is expected that such perceptions would be shared by workers of the same work team because of a number of social processes that take place within the team. This is important because members of the same work team are likely to be exposed to the same goals, objectives, policies, strategies, technologies, work environments, and this exposure results in a relatively homogeneous experience of their workplace that is different from other workplaces. However, what this

validation showed was that workers of the same work team who also share the same manager perceive their sense of empowerment quite differently. This provides managers with useful information on some of the qualities that could be reformed to achieve even greater levels of perceived empowerment on the part of the workers.

Trust – The culture of an organisation significantly impacts on the levels of trust that exist within a workplace. This study remains consistent with earlier understanding and definition of trust which is relevant to the willingness of a worker to be vulnerable with the opposite end of the trust construct being lack of trust which means it makes rational sense to treat them as a continuum. The trust model was extended to work teams and organisational levels of analysis and it reinforces the importance of workers trusting each other and their organisations. The study indicated that trust between workers and trust for the organisation shows the extent to which the workers are willing to ascribe good intentions to and have confidence in the words and actions of other workers and the company they work for.

The trust framework revealed that the ability of workers to perform tasks with skill, knowledge and competence rated quite highly with the majority of the workforce involved in the validation exercise. This signifies that workers within their workplaces are competent enough to embark on their tasks or duties in a safe and healthy way.

The results show that some workers perceive their workplaces had functional elements of both worker ability and some elements of genuine benevolence from management. However, some of their comments did not display high levels of confidence with their managers or supervisors neither do they feel that the management often do what they say regarding OSH. Although previous studies indicated that despite the growing importance of trust a number of institutions that measure trust have witnessed diminishing trust among their workers; this study's validation of the trust framework clearly indicates that workers involved in this research demonstrate a relatively high level of trust amongst co-workers and trust for the organisation they work for. This study identified that judgments of ability and company integrity could be formed relatively quickly in the course of a working relationship; however, benevolence judgments tend to take more time. Just as perceptions about ability, benevolence, and integrity will have an impact on how much trust the worker can garner, these perceptions also affect the extent to which a worker trusts their organisation.

The trust framework which incorporates ability, benevolence, and integrity as a mechanism to building trust within the workplace seems reasonable to assume that nurturing higher levels of trust would be a worthy goal for managers and supervisors to pursue. Lack of trust grows when managers or supervisors don't follow through on their promises and trust grows when they do follow through. Lack of trust grows when managers or supervisors claim to embrace certain values but act in a manner at odds with them, and trust grows as people consistently act in alignment with the values they say matter to them. For managers

and supervisors to earn trust, it takes consistency of words and actions over a period of time.

Motivation – Motivation is the act of being stimulated to do something e.g. where a worker is energised or activated towards an end goal. A worker lacks motivation when they feel no impulse or inspiration to act. The most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation which refers to doing something because it leads to a separable outcome. The validation exercise for the motivation indicator revealed that none of the workers showed signs of lack of motivation but rather, there were variations amongst workers undertaking their roles for either extrinsic or intrinsic reasons.

This study has shown that some workers are extrinsically motivated for various reasons such as families and money, career progression, delivering on projects etc. Differences in worker attitudes have also been associated with the different types of extrinsic motivation for e.g. the more workers are externally regulated the lesser interest, value or effort they will display and the more the tendency of them blaming others such as their managers, supervisors or their colleagues for negative consequences.

A construction worker may find a task to be intrinsically interesting as a result of improved task design or task properties. However, issues related to rewards has been suggested as an extrinsic motivational factor and every type of expected tangible reward made contingent on task performance does undermine intrinsic motivation. Workers also consider work related issues of threats; deadlines, directives, and competition pressure as factors that diminish intrinsic motivation because they see them as controlling their behaviours. Monetising motivation for objectives such as productivity needs to be either discontinued or balanced with OSH motivators.

Commitment – Commitment is regarded as the force that binds workers to a certain target which can be social or non-social and to a course of action that is relevant to such a target. This study of workforce commitment was grouped into three broad categories: conditional commitment; compliance commitment; and citizenship commitment. The results for the commitment indicator reveal that none of the workers involved in the research showed signs of conditional commitment but rather, the workers displayed compliant or citizenship forms of commitment.

A workplace made up of workers with compliant or normative commitment will get the job done and with acceptable results, but their goal will not exceed satisfactory results or achieve exceptional outcomes. These types of workers which make up half of the workforce that partook in the validation exercise are obliged to work to the rules due to investment in training, rewards and other benefits. This study shows that workers that display compliance commitment will simply obey by doing what is required of them but no more than the legal requirement. Typically, such workers will undertake just enough to keep their role.

However, the other half of the workforce that displayed citizenship forms of commitment displayed attachment to their organisations caused by their identification with the objectives and values of their organisations. This reflects the loyalty of the workers to the organisation and their ability to fulfil and satisfy their needs at work. The workers that displayed citizenship commitment were those that showed the will to go above and beyond compliance; those that proactively promoted safety messages and derived some level of enjoyment and satisfaction from contributing to improving the H&S standards within their organisation. These set of workers also displayed some form of career growth; working on tasks that are related to their career goals; workers whose experiences with their employers satisfy their needs; and long-term serving workers.

For worker engagement to be truly perceived within the workplace, and for commitment to thrive, the culture of the organisation plays a significant role. Organisations which assert certain core values but with managers or supervisors clearly undermining those values will result in extensive cynicism, lack of commitment and disengagement within the workforce.

LIMITATIONS OF THIS STUDY

This study involved workers, projects and organisations across mainland Britain. A purposeful sampling strategy was adopted for gaining access to construction sites and workers. This was done by selecting from a pool of site options voluntarily made available by few of the research Steering Group members. Any future work will require more projects to be made available to enable more in-depth cross-sectional analysis across projects, organisations and individuals.

The ranking exercise and the development of the meaningful discussion indicator were done through face-to-face focus group workshops. However, the other four indicators (empowerment, trust, motivation and commitment) were developed via email communications by implementing three phases of iterations using the Delphi technique. This process was slow in terms of the frequency of timely responses, tedious for the Steering Group members that participated and somewhat complicated as per the instructions for the exercise, this became a potential threat to successful completion. However, the aim of fulfilling the inter-rater requirements regarding general consensus for the five indicators were still achieved.

RECOMMENDATIONS FOR INDUSTRY PRACTICE

This study has made a significant contribution to the relatively new concept of Worker Engagement for the improvement of construction OSH. The inclusion of a user guide gives the work an added advantage, in that it can be picked up and used by industry almost immediately. Indeed, a number of contractors who were involved in the study have already requested use of the materials for benchmarking their sites.

It is recommended that the industry guidance be promoted and adopted by the construction industry, by those wishing to benchmark and improve their Worker Engagement practices.

It is also recommended that other industries investigate potential use of the maturity model. The benchmarking aspect and recommended actions for improved engagement practices should ensure it appeals to several other industry sectors, particularly those with extensive industrialised workplaces and/or high risk environments.

The HSE Leadership and Worker Involvement Toolkit (LWIT) can greatly benefit from the findings of this study. A mapping exercise was conducted as part of this study which allows the LWIT guidance to be updated to align with the study's findings; See Appendix 9.

Continued use of the model for benchmarking purposes will allow refinement of the criteria and question sets. However, it is recommended that a digital tool be developed from the findings of this study which can aid quicker collection of data, but also allow a central database of benchmarking data to be developed to provide feedback, updates and improvements to Worker Engagement practices in the years to come.

Such a central database could be hosted by GCU's Built Environment Asset Management (BEAM) Research Centre, if ongoing funding can be secured.

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APPENDIX 1: MEANINGFUL DISCUSSION RANKING

Table 6: Meaningful discussion with actions taken to resolve issues and their ranking

Level	Issues & Description	Action Examples
3	Battery charging points e.g. batteries are being charged in the canteen	Extension cables ordered and extensions delivered and now in use
1	Ear plug dispenser	Ear plug dispenser fitted to the board on the lower ground and ready for use
2	Temporary lighting	Contractor supplied task lighting but subcontractors are to supply their own if there is not enough on site
2	Housekeeping	With lots of new faces on site, people are not tidying up last 10 minutes at night. All foremen should ensure that work personnel tidy up before leaving site.
3	PPE	Everyone is not adhering to the five-point PPE rule. If the same people persistently fail to adhere to the rules, their boss will be informed to take relative actions
4	Relevant tickets for Scissor lifts	Spot checks will be carried out; charge hands are to make sure that only personnel with tickets use machines
1	No running water in joiners canteen	Supervisor to talk to subcontractor to resolve issue
4	Work plan - Plant, machinery & equipment	Everyone to be aware that the crane operator will be working closer to the building
1	Someone squatting over the toilet, broke seat and made a mess	All personnel spoken to; if for any reason you need to do this speak to management to see if alternative arrangement can be made
3	Car park mud e.g. sparks complained that the car park was very muddy and no walkway	New tar car park now in operation with walkway through the canteen
3	Mixed wastes e.g. plasterboards, timbers, and metals all mixed in the bins	Everyone told to separate waste bins provided to allow forklift driver to put waste in relative skips
3	Bottom of plant room stair has open area you need to jump over	Area was boarded over to make suitable platform
3	Stairs blocked off for pour and no dry routes to wing B	New routes with barriers and no mud designed
3	Machinery movement/awareness e.g. lots of MEWPS moving on site	Safety advisor suggested signs be made and erected for MEWP working area
1	People smoking outside building and canteen	All personnel spoken to and told to use designated smoking areas. The designated smoking area to be made larger
1	Canteen left untidy and microwave not cleaned after use	Foremen to speak to men and more bins and signs to be put up
3	PAT testing equipment	All equipment on site tested
3	Uncovered risers	Barriers erected to protect it

3	Water bottle not used during cuttings	Brickies given water bottles and they are under observation
3	COSSH bins not being used	Signs were made up and put up on site
1	No microwave in the canteen	New one was purchased and put in place
4	Commendation	Scaffolders commended for prompt action taken at east elevation scaffold
3	Fire alarm	Fire alarm did not go off with others during fire drill. Supervisor to silent test the alarm
1	Toilet water running out frequently	Signs to be put up to "pull up taps" after use; plumber to look at taps
1	Water not fit for drinking	Signs to be made to warn personnel that water from canteen sink is not suitable for drinking
1	No closer on canteen door	Supervisor will look into fitting new ones
2	Cables on ground at west wing	Cables to use nearest drop points and hung up off the floor
3	Metal cutting with jigsaw very noisy	When cutting metal (trays or ducting) with jigsaw, do it outside if possible or warn people in area before cutting. Ear plug dispenser to be put up on site for easy access
3	Using other workers platforms without charging after use	All team members to speak to other co-workers and to ask them to charge machines at night. Tool box talk
3	Signing in book to be used everyday	Supervisor to talk to all operatives to ensure they sign in as it is also the fire drill check book

APPENDIX 2: ITERATION 1 INSTRUCTIONS FOR EMPOWERMENT

Use the dartboard framework for empowerment **Figure 3 page 64** with explanatory notes and empowerment statements from construction operatives and supervisors to rank the level of the different statements in terms of where you think they best fit on the conceptual dartboard (each ring on the dartboard).

Example: If you think the first statement in the Empowerment **Table 7, page 157** fits within "Meaning" in the dartboard write "1" in the "Level" of the table showing statements from workers. If you think it fits best in the "Competence = 2"; "Self-determination = 3"; and "Impact = 4", (1 being the lowest and 4 the highest level) write any of such numbers in the table showing statements from workers. If you are unsure then type a question mark.

EMPOWERMENT

Empowerment is considered as a motivational construct associated with ‘enabling’ a construction worker rather than simply delegating. Enabling such workers implies creating conditions for heightening motivation for task accomplishment through the development of a strong sense of personal efficiency. Delegating or resource sharing on the other hand is only one set of conditions that may (but not necessarily) enable or empower workers.

These four cognitions in the explanatory note below combine incrementally to form a single unitary construct – psychological empowerment; lack of any single dimension will decrease but not eliminate the overall degree of empowerment experienced by the workers.

Explanatory notes for Empowerment framework

LEVEL	EXPLANATORY NOTES
1. Meaning [‘Knowing’]	Worker’s beliefs and values for health & safety is important, the worker knows the requirements of a work role and behaviours but don’t take action. The value of a work goal judged in terms of an individual's own values or standards.
2. Competence [‘Doing’]	Worker has the skills, capability, personal mastery; compliance, takes action (reactive). Worker's belief in his or her capability to successfully perform a given task or activity.
3. Self-Determination [‘Decision-making’]	Proactive about work methods, pace and effort (within/inside the gate). Worker's sense of choice about activities and work methods.
4. Impact [‘Influencing’]	Strategic, administrative or operations outcomes (beyond/outside the gate); making a difference; suggestions/decisions are followed up or supported by top management (impact). The degree to which the worker believes he or she can influence organisational outcomes.

Table 7: Empowerment statements from workers

LEVEL	EMPOWERMENT STATEMENTS
	There are loads of things like asbestos awareness and things like this that I never knew anything about before. And this was all brought to light when I started with [company name]. So I completely changed how I feel about health and safety.
	To start of it's his responsibility... it's my responsibility to make sure they're given the equipment; it's his responsibility to use the equipment.
	My contracts manager as well, has been giving me more responsibility; giving me more training.
	Education in the sense that we have been taught or shown why not to do something. We have seen videos and pictures; whether it be at an induction, or [Company name] health and safety seminars every now and then. They're quite big on showing you bad practices and pictures of what could happen
	I can't think of a building site I've worked on where if you feel something is going to affect your own personal safety and you raise it, they say 'shut up and get on with it'. Those days are gone
	Even if it's something that has never really come up before, you understand why it would become a problem - you know what I mean? So when it becomes a problem, it's not an issue to get in a tower to deal with it when you can't get in with stepladders. If you need to get platforms or podiums in, that's what the company I work for will do, no issue
	You're using their experience, health and safety-wise - not just for health and safety but quality and for methods of work, everything you are doing
	Really it comes down to your knowledge, your understanding, and your experience. Having a wee bit of savvy about you when it comes to stuff, and knowing how it should be done. Keep yourselves right.
	Every single person on site has some knowledge to impart. Like if they are doing a wee job and they're working beside and bricky and the bricky is like that 'no, you can't do that' 'these have to be left in because of this'. Everybody's got their own knowledge on the site so it helps impart it on everybody else.
	Reliability, experience in what they're doing.... Diplomacy, yip. Well, because there is more than one trade on the job and we've all got to work together. I think sometimes you're not aware of other people's issues and sometimes some of the issues we have, and solutions to our issues, might affect the person next to you. A bit of diplomacy
	I find if you know what you're doing you're going to get on well; and with [Company name] throughout the years, I'm now working for [Company name] rather than through a subcontractor
	It's obviously going to make you better at your job, having more knowledge. Sometimes, like I say, sometimes up here and out there - you're trying to merge that - it's not always the same way
	Well, with our own education; our own minds. Our own experiences. We then apply that to what we're doing
	I think it's probably because it keeps getting drilled into you a lot. And it's more education with it and repetitive with it and you start understanding it. And you go on courses as well for health and safety; you get shown the horror videos and all that kind of stuff as well
	If I go into a site and I come across a health and safety issue, which I say 'I'm not very sure about that'; I then phone our health and safety advisor. If he is a bit wary like myself, he then goes to his boss and further onto the Director of safety, so it's a chain of events
COMMENTS/FEEDBACK:	

APPENDIX 3: ITERATION 1 INSTRUCTIONS FOR TRUST

Use the **Trust** dashboard **Figure 4** with **Table 8, page 159** showing “Trust” statements from construction operatives and supervisors to rank the levels of the different statements in terms of where you think they best fit in the framework.

TRUST

Working together often involves interdependence, and people must therefore depend on others in various ways to accomplish their personal and organisational goals. The composition of the UK construction workforce and organisation of the workplace also show an increase in diversity. This increase in construction workforce diversity requires workers with very different backgrounds to come into contact and deal closely with one another. Therefore, trust is regarded as the measure of the willingness to take risk (i.e., be vulnerable) in a relationship. Trust is a psychological state that involves the willingness to be vulnerable to another party (which can be a co-worker or manager) when that party cannot be controlled or monitored; an expectancy that another can be relied on. Lack of trust is the absence of all these qualities.

The three main factors perceived as antecedents of trust are **ability, benevolence** and **integrity**.

Ability - Ability is that group of skills, competencies, and characteristics that enable a worker to have influence within some specific domain.

Benevolence – Benevolence is the extent to which a worker is believed to want to do good to the employer, aside from an egocentric profit motive. Benevolence suggests that the worker has some specific attachment to the employer. An example of this attachment is the relationship between a mentor (manager) and a protégé (supervisor/operative). The manager wants to help the worker, even though the manager is not required to be helpful, and there is no extrinsic reward for the manager. Benevolence is the perception of a positive orientation of the employee toward the employer.

Integrity – The relationship between integrity and trust involves the employee's perception that the employer adheres to a set of principles that the employee finds acceptable.

If **ability, benevolence,** and **integrity** are all perceived to be high, the employee would be deemed quite trustworthy. However, trustworthiness should be thought of as a continuum, rather than the employee being either trustworthy or not trustworthy. Each of the three factors can vary along a **continuum**.

Table 8: Trust statements from workers

TRUST LEVEL	TRUST STATEMENTS
	What I've noticed when I've been on sites and there are other contractors on site, you see things that they do that the company wouldn't allow
	I agree with what you're saying [Supervisor's name], but as soon as you walk away - that stuff gets flung to the side because they're still money orientated. They know themselves that they're doing wrong. It's trying to convince them in their head - look, this is to your benefit
	No health and safety at all. Nothing. You just got a job, you done it. We were hanging off lampposts, things like this. It was completely unbelievable. There was no risk or methods, no nothing. No site files, so sign-ins, no ladder checks. There was absolutely nothing.
	We think you are a good worker. We'd like to put you into some training and put you up to supervisor level
	I mean I worked with [Company name] for six months and they gained trust in my abilities, they then want to communicate with me more
	There's a lot of trust both ways. I believe a contract can't run properly if there's no trust between contract managers and the supervisors
	I've been on that job since April last year; I've had one visit in a year from a contracts supervisor. It's only because they trust me and the contract is running well.
	Health and Safety is number one priority, as far as the company is concerned, and I think as far as the contractors on site and myself are concerned, there is probably nothing we couldn't take to [Company name], to the site agents and manager. He is approachable that way and he will deal with it in his own diplomatic way
	I did work for one builder I'd rather not name, a big builder nowhere near the quality of [Company name]... but they were a joke. They were big- big company, changed names a few times, but the difference in quality.... and I actually got to the point where I handed a job back
	The only issue I've got with the 'grassroots meeting' is when guys keep repeating themselves saying I've got this problem, see six months down the line they just stop saying, if it doesn't get solved or remedied then they just give up saying to them, and they kind of lose heart a little bit in the actual meetings and the process
	You're there to produce a product to the best of your ability, and if you've not got somebody there that's willing to help you do that - especially if they're at management level - then why would you want to be there?
	They do deal with anything that the guys flag up; and because of that most of the guys aren't scared to say anything, or take pictures and send it to me; the guy's do engage with them a lot more now than they did 5 years ago
	I'd imagine that in construction it's a problem, you get a lot of people coming and going that aren't worth the paper they're printed on
	Yes, on certain sites there is a lot more respect between the guys and the site managers. Probably there have been site managers that tune into it a bit more and action things quicker, they buy into it
	Well if you're under 18 on a [Company name] site you can't work alone and you must work on the same floor as your tradesman. Sight and sound. Even going to the toilet. It works okay, but frustrating at times. Once they are over 18, they are deemed to be more mature and sensible
	I think when I started health and safety was 'hush-hush', don't grass anybody in kind of thing. We would see it and just pretend it didn't happen and just get on with it
	Nowadays the building sites are really proactive, health and safety-wise. They've got methods where if you think something's not right you go and see them and it gets dealt with. It keeps everybody safe and at the end of the day everybody's here to make money, and if everybody's working safely and well you're going to make more money because you know there is no risk in being off work weeks with a broken leg or anything

	Well, me personally, I just look out for myself. I don't trust anyone. Sooner or later you're going to get stabbed in the back.
	I don't know if there's a culture of fear to report, I guess there is a general laziness as well. If you think something is a bit dodgy you might raise it with a mate or to your own gaffer to raise it. Obviously you should go down the right methods and do a near miss report and put it in. That's better because going forward everybody is going to be safe
	I think a lot of building sites have got better. It's not a grassing mentality as such anymore; it's not getting someone into trouble. If something's up then it's up. Even if you don't want to go through official channels, if there is something up with an exposed pipe you just point it out to the {...} and they'll sort the problem
COMMENTS/FEEDBACK:	

APPENDIX 4: ITERATION 1 INSTRUCTIONS FOR MOTIVATION

Use the **Motivation** dartboard, **Figure 6** with **Table 9** showing "Motivation" statements from the workers to rank the levels of the different statements in terms of where you think they best fit in the framework

MOTIVATION

Motivation is the act of being moved to do something. This can be subdivided into two sub categories: unmotivated whereby a person feels no impulse or inspiration to act and motivated where someone is energised or activated towards an end goal. The Self-determination theory (SDT) focuses on types of motivation, rather than just amount, of motivation, paying particular attention to autonomous motivation, controlled motivation, and amotivation (lack of motivation) as predictors of performance, relational, and well-being outcomes. The SDT examines worker's life goals or aspirations, showing differential relations of intrinsic versus extrinsic life goals to performance and health and safety.

TYPES OF MOTIVATION

INTRINSIC MOTIVATION - Intrinsic motivation is defined as the doing of an activity for its inherent satisfactions rather than for some separable consequence. When intrinsically motivated a person is moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards.

EXTRINSIC MOTIVATION - Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome. It varies considerably in its relative autonomy and thus can either reflect external control or true self-regulation.

AMOTIVATION - When a worker is amotivated, their behaviour lacks intentionality and a sense of personal causation e.g. not valuing an activity, not feeling competent to do it, or not believing it will yield a desired outcome.

Table 9: Motivation statements from workers

MOTIVATION LEVEL	MOTIVATION STATEMENTS
	I would think experience and the education
	'I've made my money, my health and my safety comes before money'
	They want to make money; they're not bothered about health and safety
	I've done a whole load of training over the past 2 years, so [Company name] has been really good to me as I can see health and safety-wise.
	I strive to make the contract work as efficiently and as best as possible, and as safely for our men
	Make an honest day's living and go home. I'm actually working to get a position within the office myself.
	Possibility of a promotion, but also some sort of bonus scheme within the organisation or whatever.
	Job security is a big issue, especially in our trade
	The welfare of my guys and myself
	Especially having some authority and supervision responsibilities, you have to make sure everybody else that's working underneath you is going to be safe. Obviously your own safety as well
	People are saying obviously health and safety is a big factor to you guys, we can go elsewhere and just crash on
	Well obviously I've got a family and a partner. Nobody wants to come to work and get injured. If I'm not working they're not eating, it's as simple as that. That's my motivation
	We're self-employed, our aim is to build as much and as quick as possible to the standards requested in the build. Health and safety is a variable, and other variables come into the equation
	I'm on price work, I work to pace. They want a product out as quickly as possible to their standards, so we need to use the variables, like health and safety and we need to work with that to our advantage.
	I think it's just the fact that being safe or working in a safe environment. Not having to worry about anything happening to you when you're down there. I think it's that pretty much
COMMENTS/FEEDBACK:	

APPENDIX 5: ITERATION1 INSTRUCTIONS FOR COMMITMENT

Use the **Commitment** dartboard **Figure 7** with the **Table 10** showing statements from workers to rank the level of the different statements in terms of where you think they best fit in the framework (each ring on the dartboard).

COMMITMENT

Citizenship Commitment – Citizenship commitment refers to workers' psychological attachment to their organisations caused by their identification with the objectives and values of their organisations. That is, workers are loyal to and choose to remain with their organisations because they want to. One reason for wanting to remain with the organisation is related to the ability of individuals to satisfy their needs at work e.g. "I really feel as if this organisation's problems are my problems."

Compliance Commitment - Compliance commitment refers to the worker's psychological attachment to the organisation based a moral obligation to repay the organisation for benefits received from the organisation. Compliance commitment is based on norms of reciprocity associated with accepting the benefits of the organisation. Consequently, employees who believe that the organisation is contributing to their career growth will feel a moral sense of obligation to give back to the organisation in return e.g. "Even if it were to my advantage, I do not feel it would be right to leave my organization now."

Conditional Commitment - Conditional commitment is a function of the perceived cost of leaving an organisation. Workers feel a sense of commitment to their organisation because they feel they have to remain. To do otherwise would be to forgo favourable levels of personal status, seniority, remuneration, work schedule, pension, and other benefits acquired e.g. "Right now, staying with my organisation is a matter of necessity as much as desire,"

Table 10: Commitment statements from workers

COMMITMENT LEVEL	COMMITMENT STATEMENTS
	I'm quite big about health and safety when I've got men on site. And I think that's all down to what [Company name] has done over the last couple of years for me
	I just worked through to make sure that contract was actually up and running perfectly; and that's basically what I worked for last year. And I was proud of what I did at the end of the year.
	Our operatives out there are on a target basis, so they've got to work for their money. They're not on an hourly rate.
	For me I'm kind of loyal, I've built up a relationship with both the East and the West
	My commitment to health and safety has changed - it has. Again, for me personally it's about me being more mature, getting older, and having more guys. Looking at the guys and thinking 'you've got to look after yourselves'
	We're all self-employed, so if you're not out working you're not getting any money. That's how it hits you - in the pocket
	Because we're getting marked down and assessed on every visit, we always have to stay on top of our health and safety stuff. We honestly don't do anything dodgy. We don't do anything if we think there's going to be a risk there. One, we don't want to hurt ourselves. Two we don't want to get caught. That's what it comes down to. We don't want to be reprimanded
	For [Company name] it works out that per subcontractor at the end of the month you get a leader board, and every 6 months you want to be top of the leader board. We got £100 in vouchers for tools and stuff. It's an incentive.
	[Company name] are quite kind in that sense - they have provided me with moving and handling courses, silica dust, I've just not long done my SSSTS with them
	I started as an apprentice in the company I'm in just now. I've gradually worked up, became a plumber, and became a foreman plumber and now a supervisor for the same company
	Well you've got to be committed. You know, the lads out there take pride in their work as well. They'll not leave a shabby job; they'll want to make sure it's as good as they can do it, and safely.
	Is it bad to say money again? Yeah okay, it's probably other than myself there are people around you as well. I obviously look out for myself and you don't really want anyone else to get hurt around you. I guess that's why I would be committed to the health and safety in the job
	Too bloody committed I think. I go home at night and thinking should I do this, should I do that. So aye never switch off to be honest sometimes my wife says 'f--k sake that work home?' I think it's just the nature of your job now, that's what you are doing.
	I've always liked doing my job not every day you have off days and that but generally speaking I don't know if I've got a reason as to why I like doing it, I just seem to like it. And obviously safety I've not been on a site where anything nasty has happened so that's maybe got an aspect.
	I am happy with the job that I do, simple as that
	Well the people that I work with, its good fun at the same time if you don't enjoy the work that you're doing then there's no point in doing it
	I always wanted to try, I never wanted to be bad, I never wanted to be lazy, I never liked that. Maybe there was overtime coming up or you needed a bit of money or a better job coming up, one doesn't get picked for it cause he's got the lazy attitude
	Well you obviously come to earn a living don't you? I enjoy it. I just enjoy eh, just enjoy being with the lads, good gang, I've always got a good gang of lads with me

	I mean my personal goal is I want to be a health and safety inspector, that's what I want to be
	So mine is more progression of career rather than job satisfaction. I've sort of moved on from that now. Done the install bit and now I want to see the management side.
	At the end of the day I do like my job and there are so many challenges so you're constantly learning.
COMMENTS/FEEDBACK:	

APPENDIX 6: ITERATIONS 2

The second phase of Iteration pooled together the initial results from the expert panel from the first phase of ranking the statements from operatives and supervisors. The anonymised results of the first iteration focused on statements where the expert panel had 'Split' and 'Largest' ranking in terms of their responses. The researchers focused on statements with split decisions and the expert panel were required to revisit the explanatory notes for each of the framework and undertake a second review of the 'Split' rankings and what levels they think was best fit. The researchers advised the expert panel to reconsider the ranking of the 'Largest' responses if 'only' they think their initial ranking was different from their current perception for such statements. The expert panel were advised to independently review their 'split' responses over again in order to arrive at a unanimous decision. Statements from operatives and supervisors without consensus amongst the expert panel were considered as either too ambiguous or they fit best within another framework. However, where the expert panel had total or majority agreement for statements from operatives and supervisors, no action was required from them.

Table 11: Second Iteration Responses from the Steering Group (SG) on the Framework: Empowerment, Trust, Motivation and Commitment

CATEGORISATION OF RESPONSES	COMMENTS	ACTION REQUIRED
Total Agreement	All SG Agree	No Action
Majority Agreement	> ½ of SG Agree	No Action
Split	½ of SG Agree	For every 'split', the SG may have to agree on a common ground regarding choice of levels for the statements. However, if you feel strongly about the choice you have made in any of the statements by the workers, please kindly indicate why you think it reflects the level you have chosen
Largest	< ½ of SG Disagree.	For every 'Largest' response, consider if 'only' you think your initial ranking is different from your current perception for such statements. Also, there might be issues of ambiguity with the statements and a proposed best fit for such statement might be an option

EMPOWERMENT STATEMENTS	COMMENTS
There are loads of things like asbestos awareness and things like this that I never knew anything about before. And this was all brought to light when I started with [company name]. So I completely changed how I feel about health and safety.	Majority Agreement:
To start of it's his responsibility... it's my responsibility to make sure they're given the equipment; it's his responsibility to use the equipment.	Majority Agreement:
My contracts manager as well, has been giving me more responsibility; giving me more training.	Majority Agreement:
Education in the sense that we have been taught or shown why not to do something. We have seen videos and pictures; whether it be at an induction, or [Company name] health and safety seminars every now and then. They're quite big on showing you bad practices and pictures of what could happen	Majority Agreement:
I can't think of a building site I've worked on where if you feel something is going to affect your own personal safety and you raise it, they say 'shut up and get on with it'. Those days are gone	Split
Even if it's something that has never really come up before, you understand why it would become a problem - you know what I mean? So when it becomes a problem, it's not an issue to get in a tower to deal with it when you can't get in with stepladders. If you need to get platforms or podiums in, that's what the company I work for will do, no issue	Majority Agreement
You're using their experience, health and safety-wise - not just for health and safety but quality and for methods of work, everything you are doing	Split
Really it comes down to your knowledge, your understanding, and your experience. Having a wee bit of savvy about you when it comes to stuff, and knowing how it should be done. Keep yourselves right.	Majority Agreement
Every single person on site has some knowledge to impart. Like if they are doing a wee job and they're working beside and the bricky is like that 'no, you can't do that' 'these have to be left in because of this'. Everybody's got their own knowledge on the site so it helps impart it on everybody else.	Majority Agreement
Reliability, experience in what they're doing.... Diplomacy, yip. Well, because there is more than one trade on the job and we've all got to work together. I think sometimes you're not aware of other people's issues and sometimes some of the issues we have, and solutions to our issues, might affect the person next to you. A bit of diplomacy	Majority Agreement
I find if you know what you're doing you're going to get on well; and with [Company name] throughout the years, I'm now working for [Company name] rather than through a subcontractor	Majority Agreement
It's obviously going to make you better at your job, having more knowledge. Sometimes, like I say, sometimes up here and out there - you're trying to merge that - it's not always the same way	Split
Well, with our own education; our own minds. Our own experiences. We then apply that to what we're doing	Majority Agreement
I think it's probably because it keeps getting drilled into you a lot. And it's more education with it and repetitive with it and you start understanding it. And you go on courses as well for health and safety; you get shown the horror videos and all that kind of stuff as well	Majority Agreement
If I go into a site and I come across a health and safety issue, which I say 'I'm not very sure about that'; I then phone our health and safety advisor. If he is a bit wary like myself, he then goes to his boss and further onto the Director of safety, so it's a chain of events	Majority Agreement
TRUST STATEMENTS	COMMENTS
What I've noticed when I've been on sites and there are other contractors on site, you see things that they do that the company wouldn't	Majority Agreement

allow	
I agree with what you're saying [Supervisor's name], but as soon as you walk away - that stuff gets flung to the side because they're still money orientated. They know themselves that they're doing wrong. It's trying to convince them in their head - look, this is to your benefit	Majority Agreement
No health and safety at all. Nothing. You just got a job, you done it. We were hanging off lampposts, things like this. It was completely unbelievable. There was no risk or methods, no nothing. No site files, so sign-ins, no ladder checks. There was absolutely nothing.	Total Agreement
We think you are a good worker. We'd like to put you into some training and put you up to supervisor level	Majority Agreement:
I mean I worked with [Company name] for six months and they gained trust in my abilities, they then want to communicate with me more	Split
There's a lot of trust both ways. I believe a contract can't run properly if there's no trust between contract managers and the supervisors	Largest
I've been on that job since April last year; I've had one visit in a year from a contracts supervisor. It's only because they trust me and the contract is running well.	Total Agreement
Health and Safety is number one priority, as far as the company is concerned, and I think as far as the contractors on site and myself are concerned, there is probably nothing we couldn't take to [Company name], to the site agents and manager. He is approachable that way and he will deal with it in his own diplomatic way	Majority Agreement
I did work for one builder I'd rather not name, a big builder nowhere near the quality of [Company name]... but they were a joke. They were big- big company, changed names a few times, but the difference in quality.... and I actually got to the point where I handed a job back	Total Agreement
The only issue I've got with the 'grassroots meeting' is when guys keep repeating themselves saying I've got this problem, see six months down the line they just stop saying, if it doesn't get solved or remedied then they just give up saying to them, and they kind of lose heart a little bit in the actual meetings and the process	Total Agreement
You're there to produce a product to the best of your ability, and if you've not got somebody there that's willing to help you do that - especially if they're at management level - then why would you want to be there?	Total Agreement
They do deal with anything that the guys flag up; and because of that most of the guys aren't scared to say anything, or take pictures and send it to me; the guy's do engage with them a lot more now than they did 5 years ago	Majority Agreement
I'd imagine that in construction it's a problem, you get a lot of people coming and going that aren't worth the paper they're printed on	Total Agreement
Yes, on certain sites there is a lot more respect between the guys and the site managers. Probably there have been site managers that tune into it a bit more and action things quicker, they buy into it	Largest
Well if you're under 18 on a [Company name] site you can't work alone and you must work on the same floor as your tradesman. Sight and sound. Even going to the toilet. It works okay, but frustrating at times. Once they are over 18, they are deemed to be more mature and sensible	Split
I think when I started health and safety was 'hush-hush', don't grass anybody in kind of thing. We would see it and just pretend it didn't happen and just get on with it	Majority Agreement
Nowadays the building sites are really proactive, health and safety-wise. They've got methods where if you think something's not right you go and see them and it gets dealt with. It keeps everybody safe and at the end of the day everybody's here to make money, and if everybody's working safely and well you're going to make more money because you know there is no risk in being off work weeks with a broken leg or anything	Majority Agreement
Well, me personally, I just look out for myself. I don't trust anyone. Sooner or later you're going to get stabbed in the back.	Total Agreement
I don't know if there's a culture of fear to report, I guess there is a general laziness as well. If you think something is a bit dodgy you might	Split

raise it with a mate or to your own gaffer to raise it. Obviously you should go down the right methods and do a near miss report and put it in. That's better because going forward everybody is going to be safe	
I think a lot of building sites have got better. It's not a grassing mentality as such anymore; it's not getting someone into trouble. If something's up then it's up. Even if you don't want to go through official channels, if there is something up with an exposed pipe you just point it out to the {...} and they'll sort the problem	Majority Agreement
MOTIVATION STATEMENTS	COMMENTS
I would think experience and the education	Majority Agreement
'I've made my money, my health and my safety comes before money'	Largest
They want to make money; they're not bothered about health and safety	Majority Agreement
I've done a whole load of training over the past 2 years, so [Company name] has been really good to me as I can see health and safety-wise	Largest
I strive to make the contract work as efficiently and as best as possible, and as safely for our men	Majority Agreement
Make an honest day's living and go home. I'm actually working to get a position within the office myself.	Majority Agreement
Possibility of a promotion, but also some sort of bonus scheme within the organisation or whatever	Split
Job security is a big issue, especially in our trade	Majority Agreement
The welfare of my guys and myself	Total Agreement
Especially having some authority and supervision responsibilities, you have to make sure everybody else that's working underneath you is going to be safe. Obviously your own safety as well	Largest
People are saying obviously health and safety is a big factor to you guys, we can go elsewhere and just crash on	Largest
Well obviously I've got a family and a partner. Nobody wants to come to work and get injured. If I'm not working they're not eating, it's as simple as that. That's my motivation	Largest
We're self-employed, our aim is to build as much and as quick as possible to the standards requested in the build. Health and safety is a variable, and other variables come into the equation	Split
I'm on price work, I work to pace. They want a product out as quickly as possible to their standards, so we need to use the variables, like health and safety and we need to work with that to our advantage.	Split
I think it's just the fact that being safe or working in a safe environment. Not having to worry about anything happening to you when you're down there. I think it's that pretty much	Largest
COMMITMENT STATEMENTS	COMMENTS
I'm quite big about health and safety when I've got men on site. And I think that's all down to what [Company name] has done over the last couple of years for me	Total Agreement
I just worked through to make sure that contract was actually up and running perfectly; and that's basically what I worked for last year. And I was proud of what I did at the end of the year.	Majority Agreement
Our operatives out there are on a target basis, so they've got to work for their money. They're not on an hourly rate.	Total Agreement
For me I'm kind of loyal, I've built up a relationship with both the East and the West	Largest
My commitment to health and safety has changed - it has. Again, for me personally it's about me being more mature, getting older, and having more guys. Looking at the guys and thinking 'you've got to look after yourselves'	Largest

We're all self-employed, so if you're not out working you're not getting any money. That's how it hits you - in the pocket	Total Agreement
Because we're getting marked down and assessed on every visit, we always have to stay on top of our health and safety stuff. We honestly don't do anything dodgy. We don't do anything if we think there's going to be a risk there. One, we don't want to hurt ourselves. Two we don't want to get caught. That's what it comes down to. We don't want to be reprimanded	Split
For [Company name] it works out that per subcontractor at the end of the month you get a leader board, and every 6 months you want to be top of the leader board. We got £100 in vouchers for tools and stuff. It's an incentive.	Majority Agreement
[Company name] are quite kind in that sense - they have provided me with moving and handling courses, silica dust, I've just not long done my SSSTS with them	Total Agreement
I started as an apprentice in the company I'm in just now. I've gradually worked up, became a plumber, and became a foreman plumber and now a supervisor for the same company	Majority Agreement
Well you've got to be committed. You know, the lads out there take pride in their work as well. They'll not leave a shabby job; they'll want to make sure it's as good as they can do it, and safely.	Majority Agreement
Is it bad to say money again? Yeah okay, it's probably other than myself there are people around you as well. I obviously look out for myself and you don't really want anyone else to get hurt around you. I guess that's why I would be committed to the health and safety in the job	Split
Too bloody committed I think. I go home at night and thinking should I do this, should I do that. So aye never switch off to be honest sometimes my wife says 'f__k sake that work home?' I think it's just the nature of your job now, that's what you are doing.	Total Agreement
I've always liked doing my job not every day you have off days and that but generally speaking I don't know if I've got a reason as to why I like doing it, I just seem to like it. And obviously safety I've not been on a site where anything nasty has happened so that's maybe got an aspect.	Largest
I am happy with the job that I do, simple as that	Largest
Well the people that I work with, its good fun at the same time if you don't enjoy the work that you're doing then there's no point in doing it	Split
I always wanted to try, I never wanted to be bad, I never wanted to be lazy, I never liked that. Maybe there was overtime coming up or you needed a bit of money or a better job coming up, one doesn't get picked for it cause he's got the lazy attitude	Majority Agreement
Well you obviously come to earn a living don't you? I enjoy it. I just enjoy eh, just enjoy being with the lads, good gang, I've always got a good gang of lads with me	Majority Agreement
I mean my personal goal is I want to be a health and safety inspector, that's what I want to be	Split
So mine is more progression of career rather than job satisfaction. I've sort of moved on from that now. Done the install bit and now I want to see the management side.	Split
At the end of the day I do like my job and there are so many challenges so you're constantly learning.	Majority Agreement

APPENDIX 7: ITERATION 3

Table 12: Final Ranking (Third) using the Delphi Technique: Empowerment, Trust, Motivation and Commitment

EMPOWERMENT STATEMENT	FINAL RANKING
There are loads of things like asbestos awareness and things like this that I never knew anything about before. And this was all brought to light when I started with [company name]. So I completely changed how I feel about health and safety.	1
To start of it's his responsibility... it's my responsibility to make sure they're given the equipment; it's his responsibility to use the equipment.	1
My contracts manager as well, has been giving me more responsibility; giving me more training.	2
Education in the sense that we have been taught or shown why not to do something. We have seen videos and pictures; whether it be at an induction, or [Company name] health and safety seminars every now and then. They're quite big on showing you bad practices and pictures of what could happen	1
I can't think of a building site I've worked on where if you feel something is going to affect your own personal safety and you raise it, they say 'shut up and get on with it'. Those days are gone	3
Even if it's something that has never really come up before, you understand why it would become a problem - you know what I mean? So when it becomes a problem, it's not an issue to get in a tower to deal with it when you can't get in with stepladders. If you need to get platforms or podiums in, that's what the company I work for will do, no issue	3
You're using their experience, health and safety-wise - not just for health and safety but quality and for methods of work, everything you are doing	3
Really it comes down to your knowledge, your understanding, and your experience. Having a wee bit of savvy about you when it comes to stuff, and knowing how it should be done. Keep yourselves right.	2
Every single person on site has some knowledge to impart. Like if they are doing a wee job and they're working beside and the bricky is like that 'no, you can't do that' 'these have to be left in because of this'. Everybody's got their own knowledge on the site so it helps impart it on everybody else.	3
Reliability, experience in what they're doing.... Diplomacy, yip. Well, because there is more than one trade on the job and we've all got to work together. I think sometimes you're not aware of other people's issues and sometimes some of the issues we have, and solutions to our issues, might affect the person next to you. A bit of diplomacy	2
I find if you know what you're doing you're going to get on well; and with [Company name] throughout the years, I'm now working for [Company name] rather than through a subcontractor	2
It's obviously going to make you better at your job, having more knowledge. Sometimes, like I say, sometimes up here and out there - you're trying to merge that - it's not always the same way	2
Well, with our own education; our own minds. Our own experiences. We then apply that to what we're doing	2
I think it's probably because it keeps getting drilled into you a lot. And it's more education with it and repetitive with it and you start understanding it. And you go on courses as well for health and safety; you get shown the horror videos and all that kind of stuff as well	1
If I go into a site and I come across a health and safety issue, which I say 'I'm not very sure about that'; I then phone our health and safety	4

advisor. If he is a bit wary like myself, he then goes to his boss and further onto the Director of safety, so it's a chain of events	
TRUST STATEMENTS	FINAL RANKING
What I've noticed when I've been on sites and there are other contractors on site, you see things that they do that the company wouldn't allow	1
I agree with what you're saying [Supervisor's name], but as soon as you walk away - that stuff gets flung to the side because they're still money orientated. They know themselves that they're doing wrong. It's trying to convince them in their head - look, this is to your benefit	1
No health and safety at all. Nothing. You just got a job, you done it. We were hanging off lampposts, things like this. It was completely unbelievable. There was no risk or methods, no nothing. No site files, so sign-ins, no ladder checks. There was absolutely nothing.	1
We think you are a good worker. We'd like to put you into some training and put you up to supervisor level	3
I mean I worked with BXX for six months and they gained trust in my abilities, they then want to communicate with me more	2
There's a lot of trust both ways. I believe a contract can't run properly if there's no trust between contract managers and the supervisors	2
I've been on that job since April last year; I've had one visit in a year from a contracts supervisor. It's only because they trust me and the contract is running well.	2
Health and Safety is number one priority, as far as the company is concerned, and I think as far as the contractors on site and myself are concerned, there is probably nothing we couldn't take to [Company name], to the site agents and manager. He is approachable that way and he will deal with it in his own diplomatic way	4
I did work for one builder I'd rather not name, a big builder nowhere near the quality of [Company name]... but they were a joke. They were big-big company, changed names a few times, but the difference in quality.... and I actually got to the point where I handed a job back	1
The only issue I've got with the 'grassroots meeting' is when guys keep repeating themselves saying I've got this problem, see six months down the line they just stop saying, if it doesn't get solved or remedied then they just give up saying to them, and they kind of lose heart a little bit in the actual meetings and the process	1
You're there to produce a product to the best of your ability, and if you've not got somebody there that's willing to help you do that - especially if they're at management level - then why would you want to be there?	1
They do deal with anything that the guys flag up; and because of that most of the guys aren't scared to say anything, or take pictures and send it to me; the guy's do engage with them a lot more now than they did 5 years ago	4
I'd imagine that in construction it's a problem, you get a lot of people coming and going that aren't worth the paper they're printed on	1
Yes, on certain sites there is a lot more respect between the guys and the site managers. Probably there have been site managers that tune into it a bit more and action things quicker, they buy into it	3
Well if you're under 18 on a [Company name] site you can't work alone and you must work on the same floor as your tradesman. Sight and sound. Even going to the toilet. It works okay, but frustrating at times. Once they are over 18, they are deemed to be more mature and sensible	3
I think when I started health and safety was 'hush-hush', don't grass anybody in kind of thing. We would see it and just pretend it didn't happen and just get on with it	1
Nowadays the building sites are really proactive, health and safety-wise. They've got methods where if you think something's not right you go and see them and it gets dealt with. It keeps everybody safe and at the end of the day everybody's here to make money, and if everybody's working safely and well you're going to make more money because you know there is no risk in being off work weeks with a broken leg or	4

anything	
Well, me personally, I just look out for myself. I don't trust anyone. Sooner or later you're going to get stabbed in the back.	1
I don't know if there's a culture of fear to report, I guess there is a general laziness as well. If you think something is a bit dodgy you might raise it with a mate or to your own gaffer to raise it. Obviously you should go down the right methods and do a near miss report and put it in. That's better because going forward everybody is going to be safe	2
I think a lot of building sites have got better. It's not a grassing mentality as such anymore; it's not getting someone into trouble. If something's up then it's up. Even if you don't want to go through official channels, if there is something up with an exposed pipe you just point it out to the {...} and they'll sort the problem	2
MOTIVATION STATEMENTS	FINAL RANKING
I would think experience and the education	2
'I've made my money, my health and my safety comes before money'	2
They want to make money; they're not bothered about health and safety	2
I've done a whole load of training over the past 2 years, so [Company name] has been really good to me as I can see health and safety-wise	2
I strive to make the contract work as efficiently and as best as possible, and as safely for our men	2
Make an honest day's living and go home. I'm actually working to get a position within the office myself.	2
Possibility of a promotion, but also some sort of bonus scheme within the organisation or whatever	2
Job security is a big issue, especially in our trade	2
The welfare of my guys and myself	2
Especially having some authority and supervision responsibilities, you have to make sure everybody else that's working underneath you is going to be safe. Obviously your own safety as well	2
People are saying obviously health and safety is a big factor to you guys, we can go elsewhere and just crash on	1
Well obviously I've got a family and a partner. Nobody wants to come to work and get injured. If I'm not working they're not eating, it's as simple as that. That's my motivation	2
We're self-employed, our aim is to build as much and as quick as possible to the standards requested in the build. Health and safety is a variable, and other variables come into the equation	2
I'm on price work, I work to pace. They want a product out as quickly as possible to their standards, so we need to use the variables, like health and safety and we need to work with that to our advantage.	2
I think it's just the fact that being safe or working in a safe environment. Not having to worry about anything happening to you when you're down there. I think it's that pretty much	2
COMMITMENT STATEMENTS	FINAL RANKING
I'm quite big about health and safety when I've got men on site. And I think that's all down to what [Company name] has done over the last couple of years for me	2

I just worked through to make sure that contract was actually up and running perfectly; and that's basically what I worked for last year. And I was proud of what I did at the end of the year.	3
Our operatives out there are on a target basis, so they've got to work for their money. They're not on an hourly rate.	1
For me I'm kind of loyal, I've built up a relationship with both the East and the West	3
My commitment to health and safety has changed - it has. Again, for me personally it's about me being more mature, getting older, and having more guys. Looking at the guys and thinking 'you've got to look after yourselves'	2
We're all self-employed, so if you're not out working you're not getting any money. That's how it hits you - in the pocket	1
Because we're getting marked down and assessed on every visit, we always have to stay on top of our health and safety stuff. We honestly don't do anything dodgy. We don't do anything if we think there's going to be a risk there. One, we don't want to hurt ourselves. Two we don't want to get caught. That's what it comes down to. We don't want to be reprimanded	1
For [Company name] it works out that per subcontractor at the end of the month you get a leader board, and every 6 months you want to be top of the leader board. We got £100 in vouchers for tools and stuff. It's an incentive.	2
[Company name] are quite kind in that sense - they have provided me with moving and handling courses, silica dust, I've just not long done my SSSTS with them	2
I started as an apprentice in the company I'm in just now. I've gradually worked up, became a plumber, and became a foreman plumber and now a supervisor for the same company	2
Well you've got to be committed. You know, the lads out there take pride in their work as well. They'll not leave a shabby job; they'll want to make sure it's as good as they can do it, and safely.	3
Is it bad to say money again? Yeah okay, it's probably other than myself there are people around you as well. I obviously look out for myself and you don't really want anyone else to get hurt around you. I guess that's why I would be committed to the health and safety in the job	1
Too bloody committed I think. I go home at night and thinking should I do this, should I do that. So aye never switch off to be honest sometimes my wife says 'f__k sake that work home?' I think it's just the nature of your job now, that's what you are doing.	3
I've always liked doing my job not every day you have off days and that but generally speaking I don't know if I've got a reason as to why I like doing it, I just seem to like it. And obviously safety I've not been on a site where anything nasty has happened so that's maybe got an aspect.	3
I am happy with the job that I do, simple as that	3
Well the people that I work with, its good fun at the same time if you don't enjoy the work that you're doing then there's no point in doing it	1
I always wanted to try, I never wanted to be bad, I never wanted to be lazy, I never liked that. Maybe there was overtime coming up or you needed a bit of money or a better job coming up, one doesn't get picked for it cause he's got the lazy attitude	2
Well you obviously come to earn a living don't you? I enjoy it. I just enjoy eh, just enjoy being with the lads, good gang, I've always got a good gang of lads with me	2
I mean my personal goal is I want to be a health and safety inspector, that's what I want to be	2
So mine is more progression of career rather than job satisfaction. I've sort of moved on from that now. Done the install bit and now I want to see the management side.	2
At the end of the day I do like my job and there are so many challenges so you're constantly learning.	3

APPENDIX 8: VALIDATION ASSESSMENT EXERCISE

Table 13: Criteria for Worker Selection: Worker Engagement Validation Questionnaire

HIGHLY ENGAGED WORKER	AVERAGELY ENGAGED WORKER
1. Minimum of two (2) workers	1. Minimum of two (2) workers
2. Worker in this category: someone who has won health and safety awards; (or) actively contributes to health and safety discussions, committees or initiatives; (or) a health and safety champion; (or) shows enthusiasm for health and safety matters when you speak to them.	2. Any other worker
3. Information for Researcher Name/location of site: Name of Site Manager/Contact: Name of Workers: Date of Interview: Time of Interview: Venue e.g. canteen, welfare:	3. Information for Researcher Name/location of site: Name of Site Manager/Contact: Name of Workers: Date of Interview: Time of Interview: Venue e.g. canteen, welfare:
4. Information for Independent Reviewer Prof Iain Cameron Email: I.Cameron@gcu.ac.uk Same information as (3) above and please kindly identify as “highly engaged” worker. Do not send this information to the Researcher.	4. Information for Independent Reviewer Prof Iain Cameron Email: I.Cameron@gcu.ac.uk Same information as (3) above and please kindly identify as “averagely engaged” worker. Do not send this information to the Researcher.

INDICATORS	QUESTIONS	ACTIVATORS	LIKELY RESPONSE	DIAGNOSTIC TOOL
MEANINGFUL DISCUSSIONS	<p>Are you able to communicate with your manager/supervisor about H&S?</p> <p>Describe what H&S issues you discuss with your manager/supervisor</p>	<p>Is English your first language?</p> <p>Housekeeping, welfare, rules, planning, policy, design</p>	<p>Yes or No</p> <p>Housekeeping e.g. untidy work area No running water in canteen PPE rules not adhered Lifting operations with feedback on all lifting plans Health and safety policy or design issue</p>	


INDICATORS	QUESTIONS	ACTIVATORS	LIKELY RESPONSE	DIAGNOSTIC TOOL
EMPOWERMENT	<p>Can you describe what is needed for you to carry out your task safely?</p> <p>Can you describe how you are supposed to do your work safely (for a specific task)?</p> <p>Can you describe what training you have had that helps you work safely?</p> <p>Can you describe when you had to solve a safety</p>	<p>What information, tools and equipment</p> <p>Working at height</p> <p>Technical and H&S training</p> <p>If you see a trip hazard</p>	<p>To be trained and competent and able to complete the task safely with correct equipment</p> <p>Planning and carrying out all risk assessment/method statements related to task</p> <p>Involved in several training such as SSSTS, WAH, Manual Handling, asbestos awareness, Prefabricated Access Suppliers' & Manufacturers' Association (PASMA) ticket for Scaffolding etc.</p> <p>Materials in designated waste collection area blocking vehicle access routes moved to different location</p>	

	problem?		
	Describe how you plan your work with H&S in mind	Pre-start briefing	Pre-start meetings to identify any hazards associated with task and plan and risk assess the task
	What opportunities do you have to influence decision making in terms of H&S?	PPE, tools and equipment, methods	Involved in inspections, audits, and accident investigation Freedom to advise and recommend correct PPE and tools most suitable for the task
	What opportunities do you have to influence decision making in terms of H&S?	Policies, design, work-life-balance	Confidently raise health and safety issues about work methods and policies
	Describe how senior management support your suggestions?	Are you or your representative consulted on H&S policies before they are put in place?	Grassroots meetings, H&S committee meetings, Safety Rep meetings, Stand down days

INDICATORS	QUESTIONS	ACTIVATORS	LIKELY RESPONSE	DIAGNOSTIC TOOL
TRUST	Who on site do you think is competent when it comes to H&S?	Team, gang, other workers, management	My gang have the right experience and training and they observe all safety rules	
	Which workers on site do you think work to the same H&S standards as you?		All contractors work to the same standards	
	How fair do you think you are treated?	Provided right conditions and equipment	My manager/supervisor treats me with respect and always looks after me	
	Why do you think management wants to keep you safe and healthy?	Legislation or moral/ethical reasons	Because they genuinely care about my safety	
	How confident are you to raise H&S issues with your managers	Is reporting near misses encouraged?	It is encouraged and praised. I can speak directly to my manager and I'll be given advice on any	

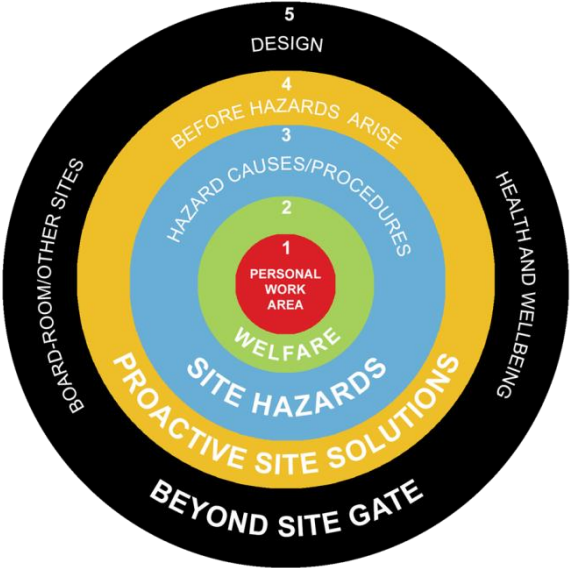
	<p>or supervisors?</p> <p>How often do management do what they say regarding H&S?</p>	<p>Do they follow through on promises about H&S?</p>	<p>health and safety issues The contracts manager understands that any safety issue raised is a genuine point</p> <p>The management are really proactive, health and safety-wise e.g. leading by example</p>	
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INDICATORS	QUESTIONS	ACTIVATORS	LIKELY RESPONSE	DIAGNOSTIC TOOL
MOTIVATION	<p>Is there anything you would put before H&S?</p>	<p>Productivity or earning more money</p>	<p>We'll go elsewhere and crash on since H&S is important. I'm here to make money; not bothered about H&S. I'm on price work, I need to work to pace.</p>	
	<p>Describe the reasons why you might work safely</p>	<p>Enjoyment; it's the right thing to do; rewards or incentives; avoid discipline</p>	<p>I work safely because the law requires me to I work safely because I enjoy my job The welfare of my guys and myself makes me work safely Working to get a position within the office Possibility of a promotion, and also some sort of bonus scheme</p>	
	<p>How does working safely make you feel?</p>	<p>Happy, sense of achievement</p>	<p>It makes me happy knowing there is no incident Make an honest day's living and go home</p>	

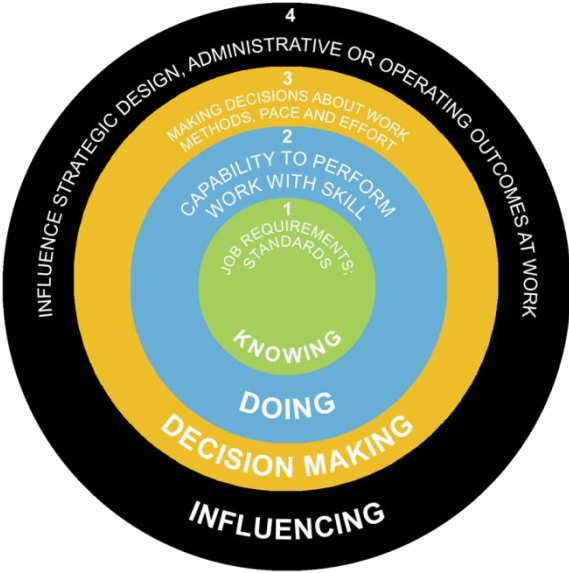
INDICATORS	QUESTIONS	ACTIVATORS	LIKELY RESPONSE	DIAGNOSTIC TOOL
COMMITMENT	Describe anything that has prevented you working safely on this site and what you did	Handover targets, keeping your job	Stopped the work immediately Continued with the work unsafely	
	Describe what you do when you see something unsafe?	Report it or fix it	Report – Compliance Fix it - Citizenship	
	How vocal are you about H&S? Describe something you have done recently to improve H&S	Attending safety committee meetings Recommendation to your manager	Obligated to discuss H&S as part of my job I'm quite big about H&S Advised manager to provide a work platform that prevents falls (e.g. scaffolds, MEWPs)for work at height activities instead of ladders	

APPENDIX 9: MANAGERIAL GUIDANCE FOR WORKERS

Table 14: Managerial Guidance for Operatives

INDICATOR: MEANINGFUL DISCUSSIONS	QUESTIONS	GUIDANCE FOR MANAGERS TO IMPROVE MEANINGFUL DISCUSSIONS
	<p>Are you able to communicate with manager/supervisor about H&S</p>	<p>1. Procedures should include setting out of equipment, site layout and methods of work (Understanding human failure – Step 2 http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>1. Adequate resources should be provided for health and safety (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>1. Give workers clear, regular health and safety updates (Leadership check tool –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Encourage workers to look out for each other as well as themselves (Leadership check tool –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Give praise straightaway when you see a worker wearing PPE (The ‘ABC’ analysis – Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>1. It is important that everyone is aware of their surroundings and the potential hazards they face (Situational awareness – Step 6_ http://www.hse.gov.uk/construction/lwit/step6.htm)</p>
	<p>Describe what H&S issues you discuss with your manager/supervisor</p>	<p>2. Care about the workers safety and welfare (Leadership check tool –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Listen to your workers (Leadership check tool –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Make decisions with workers wellbeing in mind rather than just for the good of the business (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p>
		<p>3. Adequately assess, control and monitor health and safety (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>3. Identify workplace health and safety hazards; inform workers, sub-contractors and stakeholders of these workplace hazards (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>3. Talk to workers about what health and safety issues they think are important (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Work jointly with workers on health and safety matters by discussing issues on a regular basis, e.g. toolbox talks and safety briefings (Leadership check tool –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p>
		<p>4. Enforce the rule immediately when you see a worker not wearing PPE (The ‘ABC’ analysis – Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>4. Make instant improvements, e.g. installing additional safety measures like new signs or barriers – (Acting on worker engagement Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>4. Make all workers aware that slips and lapses do happen (Understanding human failure – Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>4. Use checklists to help confirm that all actions have been completed (Understanding human failure – Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>4. Make sure checks are in place for complicated tasks (Understanding human failure – Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p>

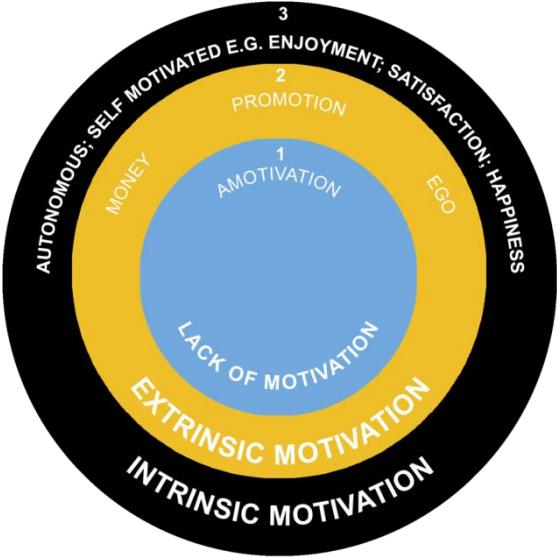
		<p>4. Increase worker situational awareness of high-risk tasks on site and provide procedures for predictable non-routine, high-risk tasks (Understanding human failure – Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>4. Ensure proper supervision for inexperienced workers and provide job aids and diagrams to explain procedures (Understanding human failure – Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>4. Actively communicate and openly consult between all workers, sub-contractors and stakeholders (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>4. All workers should be informed of the health and safety hazards and risks that affect their work (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>4. Actively and openly review and report health and safety performance against published objectives and targets (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>4. Consult workforce to identify and set clear health and safety goals e.g. inductions, pre-start briefing</p> <p>4. Update workers on developments and performance in health and safety and encourage feedback (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Introduce a STOP work procedure to prevent accidents, incidents and ill health, and show workers that you are serious about health and safety (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Keep the workers informed about health and safety issues using toolbox talks, informal pre-work chats, safety briefings, daily site briefings (Leadership check tool –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p>
		<p>5. Transfer the knowledge both around the site and (if applicable) beyond the site gate (Acting on worker engagement Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>5. Develop or review the company’s health and safety policy by consulting supervisors and workers to consider any changes and make sure all the workers are aware of it. (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>5. Involve workers in the decision-making process; communicate with workers about decisions or changes that have been made; explain why the decision were made (Leadership check tool –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>5. Make time for face-to-face conversations with peers and team members around items beyond immediate business (Better Together eBook, pg 54)</p> <p>5. Consider the work-life balance, wellbeing and mental health of workers e.g. being aware of early signs of depression, anxiety (***)see document for mental health first aid training, Mates in construction, Mates in mind)</p>


INDICATOR: EMPOWERMENT	QUESTIONS	GUIDANCE FOR MANAGERS TO IMPROVE EMPOWERMENT
	<p>Can you describe what is needed for you to carry out your task safely?</p> <p>Can you describe how you are supposed to do your work safely (for a specific task)?</p>	<p>1. The real causes of accidents on site can often be traced back to managers' decisions (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Make your toolbox talks and safety briefings engaging and interactive to have a positive impact on worker behaviour (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Ensure rich safety culture is woven into every peer-to-peer interaction (Better Together eBook, pg 16)</p> <p>1. All workers share a common vision and are fully empowered to behave in alignment with that vision (Better Together eBook, pg 16)</p> <p>1. Express confidence in workers accompanied by high performance expectations (Burke, 1986; Conger, 1986)</p>
	<p>Can you describe what training you have had that helps you work safely?</p> <p>Can you describe when you had to solve a safety problem?</p>	<p>2. All workers and stakeholders have the competence to undertake their work with minimum risks to health and safety (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>2. All workers should be adequately instructed and trained on the health and safety issues that affect them, and the safe working practices that should be followed (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>2. Ensure the health and safety competence of sub-contractors and stakeholders (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>2. Any lessons learned from events should be used to take corrective action to prevent recurrences (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>2. Make sure every worker has the skills, abilities and resources they need to do their jobs safely - (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Tap into the knowledge and expertise of front line workers as they can generate good ideas, suggest less expensive and timeous approaches to safe working (Better Together eBook, pg 20)</p> <p>2. Provide autonomy from excessive bureaucratic constraint (Block, 1987; Kanter, 1979)</p>
	<p>Describe how you plan your work with H&S in mind</p> <p>What opportunities do you have to influence decision making in terms of H&S?</p>	<p>3. Empower workers to help redesign the job or substitute a substance so that the hazard is removed or eliminated e.g. avoid working at height where possible or use a small MEWP to access work at height instead of step ladders (Management of risk when planning work: The right priorities – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>3. Assign health and safety tasks to competent workers, giving them the opportunity to make decisions about their working methods(Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Give feedback that is not personal; but one that improves performance and safety at work (How to receive feedback - Step 6_ http://www.hse.gov.uk/construction/lwit/step6.htm)</p> <p>3. Make sure workers situational awareness are not further reduced in times of high workload or when under pressure to get a job done to time (Situational awareness – Step 6_ http://www.hse.gov.uk/construction/lwit/step6.htm)</p> <p>3. Foster opportunities for workers to participate in decision making (Block, 1987; Conger, 1986)</p>
	<p>What opportunities do you have to influence decision making in terms of H&S?</p> <p>Describe how senior management support your suggestions?</p>	<p>4. Senior management should undertake tours to ensure that health and safety issues are identified, assessed and managed (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>4. Systems should be in place and workers empowered to raise 'strategic or design' health and safety concerns with management e.g. H&S policy (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>4. Encourage workers to commit to the vision (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Involve workers (or their representatives) in planning and boardroom decision making (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Share your expertise to help workers overcome barriers (Good health and safety leadership – Step 4_</p>

		<p>http://www.hse.gov.uk/construction/lwit/step4.htm</p> <p>4. Encourage positive behaviours, discourage negative behaviours. Act immediately when you see negative behaviours. Deal with it in a private and non-threatening way positively reinforcing the importance of health and safety. Together, come up with a safer way of working, and communicate this to others (Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Seek out and listen to the views of workers and give them feedback on what is or is not possible (and why), especially when making health and safety decisions e.g. 'You said' 'We did' board(Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Ensure workers feel part of a team and take responsibility for their own and others' safety (Better Together eBook, pg 16)</p> <p>4. Ensure workers receive regular and effective communications regarding health and safety figures and initiatives, and their impact on the wider organisation (Better Together eBook, pg 43)</p> <p>4. Set an example for influencing worker behaviour, e.g. share your own values and describe how they were identified as this will strongly encourage workers to do the same (Stan Emelander, Building Genuine Motivation, Feb. 2013, Pg 58)</p> <p>4. Set inspirational and meaningful goals for workers (Block, 1987; Burke, 1986)</p>
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INDICATOR: TRUST	QUESTIONS	GUIDANCE FOR MANAGERS TO IMPROVE TRUST
	<p>Who on site do you think is competent when it comes to H&S?</p>	<p>1. The behaviour of the manager on site sends a powerful message to workers about how seriously they should take health and safety (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Tell your workers that you want them to go home safe every day (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Take a personal interest in each individual’s health and safety (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Act in a respectful way towards your workers e.g., show that you respect their views -(Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Treat and speak to workers in the same way that you expect to be treated and spoken to yourself - (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p>
	<p>Which workers on site do you think work to the same H&S standards as you?</p>	<p>2. Make sure everyone knows what they need to do (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Make sure everyone has the skills, abilities and resources they need to do their jobs safely (Good health and safety leadership –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Treat each worker as an individual (Good health and safety leadership –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Provide training, job specifications, inductions and appraisals so workers know exactly what is expected of them (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Ask good questions, but remember to mostly listen (AWE skills -Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>2. All workers and stakeholders have an awareness and understanding of health and safety hazards and risks that affect our business (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>2. Be fair, trust and respect workers when making health and safety decisions (Good health and safety leadership –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p>
	<p>How fair do you think you are treated?</p> <p>Why do you think management wants to keep you safe and healthy?</p>	<p>3. Show personal concern for workers safety and well-being (Good health and safety leadership –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Put workers health and safety above everything else</p> <p>3. Make decisions with workers wellbeing in mind rather than just for the good of the business (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Behave and act in the same way to all your workers (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Give praise for good performance (AWE skills -Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>3. Get to know workers and respect their opinions (Good health and safety leadership –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Be approachable and receptive to your workers’ ideas (Good health and safety leadership –Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Treat everyone’s health and safety concerns and ideas in the same way (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Give workers feedback on their performance; praise them for safe behaviours and clearly explain to them why they should stop any unsafe behaviours (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p>

	<p>How confident are you to raise H&S issues with your managers or supervisors or co-workers?</p> <p>How often do management do what they say regarding H&S?</p>	<p>4. Constantly encourage, develop, review and share health and safety good practice both internally and externally (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>4. Generate a culture that does not tolerate threats to health and safety (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>4. Ensure the real involvement of all workers, the sub-contractors and stakeholders</p> <p>4. Good two-way communication should be at the heart of health and safety e.g. responding to safety issues quickly before accidents happen (Effective communication and gaining co-operation – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Feedback should be a two-way exchange, e.g. ask the worker what health and safety measures they've followed in doing their task (How to give feedback – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm).</p> <p>4. Develop mutual trust (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Develop a team spirit where health and safety comes first and everyone looks out for one another (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Respond to concerns immediately and discuss the actions you will take (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Managers to make expectations clear when it comes to health and safety (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Managers should be approachable, open and honest when it comes to talking about health and safety (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Show your support and acceptance of workers stopping work when they feel unsafe (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Have an open door approach and encourage them to talk to you about health and safety matters and deal with problems as quickly as you can (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>4. Reinforce the emotional drivers of front line workers by encouraging interdependence among workers through shared understanding and empathy (Better Together eBook, pg 42)</p>
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INDICATOR: MOTIVATION	QUESTIONS	GUIDANCE FOR MANAGERS TO IMPROVE MOTIVATION
	<p>Is there anything you would put before H&S?</p>	<p>1. Understand how the influence of motivational factors co-vary and interact (enforcement/regulation, reputational risk, the moral case, avoiding cost of accidents) – HSE RR334_ http://www.hse.gov.uk/research/rrpdf/rr334.pdf</p> <p>1. Inspire the workers to be safe and healthy, acting as a good role model (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>1. Understand the challenges front line workers face in reality, and remove unnecessary obstacles to them doing their jobs (Better Together eBook, pg 29)</p>
	<p>Describe the reasons why you might work safely</p>	<p>2. Reward the workers where a job has been done well (Acting on worker engagement Step 2_ http://www.hse.gov.uk/construction/lwit/step2.htm)</p> <p>2. Motivate workers to be aware of their organisation’s vision (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Recognise and reward workers who successfully work safely (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Implement reward systems for safe and healthy working practices, include subcontractors, as well as employees (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Give workers feedback on their performance; praise them for safe behaviours and clearly explain to them why they should stop any unsafe behaviours (Leadership check tool Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Encourage participation in safety initiatives such as surveys (Incentives and rewards for health and safety – Step 5_ http://www.hse.gov.uk/construction/lwit/step5.htm)</p> <p>2. Motivate workers to reach their full potential by challenging themselves (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>2. Use workers in the development of any health and safety materials (Leadership check tool Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p>
	<p>How does working safely make you feel?</p>	<p>3. Motivate workers to view their work from different perspectives (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Motivate workers to work to benefit the team rather than just themselves (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Motivate and inspire workers to overcome barriers and encourage innovation (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Promote safe work behaviour and practices – encourage the attitude: ‘I do it because I want to, not because I have to’ (Good health and safety leadership – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Encourage workers to explore and understand their own drives and how they might be fulfilled at work (Stan Emelander, Building Genuine Motivation, Feb. 2013, Pg 58)</p> <p>3. Recognise the values of the workers such as a sense of adventure, prizing stability, or dedication to family which can obviously affect career decisions and attitudes toward worker’s job (Stan Emelander, Building Genuine Motivation, Feb. 2013, Pg 58)</p>

INDICATOR: COMMITMENT	QUESTIONS	GUIDANCE FOR MANAGERS TO IMPROVE COMMITMENT
	<p>Describe anything that has prevented you working safely on this site and what you did</p>	<p>1. Demonstrate an overall behavioural pattern that seeks to discover risks rather than avoid them (Better Together eBook, pg 11)</p> <p>1. Understand issues of power, status, rivalry, insecurity, resistance to change and confusion about roles which can also create conflicts (Better Together eBook, pg 52)</p>
	<p>Describe what you do when you see something unsafe?</p>	<p>2. Comply with the requirements of health and safety legislation (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>2. Work activities should achieve compliance with legislation, and workers empowered to take action to minimise health and safety risks (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>2. Match compliance tactics to the attitudes of the organisations, rather than adopt a “one size fits all approach” – HSE RR334_ http://www.hse.gov.uk/research/rrpdf/rr334.pdf</p> <p>2. Increased education and awareness should remain significant for risks and appropriate preventive actions - HSE RR334_ http://www.hse.gov.uk/research/rrpdf/rr334.pdf</p> <p>2. Provide evidence of the productivity benefits of health and safety as well as highlighting the reputational risk of serious incidents - HSE RR334_ http://www.hse.gov.uk/research/rrpdf/rr334.pdf</p>
	<p>How vocal are you about H&S?</p> <p>Describe something you have done recently to improve H&S</p>	<p>3. Demonstrate an ongoing and determined commitment to improving health and safety at work throughout the organisation (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>3. Promote best practice and exceed the guidance of the Health and Safety Executive and other regulatory bodies (Health and Safety Policy – Step 3_ http://www.hse.gov.uk/construction/lwit/step3.htm)</p> <p>3. All workers, sub-contractors and stakeholders should be aware of the policy and committed to its effective implementation</p> <p>3. Good two-way communication to improve worker co-operation and commitment to the business (Effective communication and gaining co-operation – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Focus feedback on issues that have been the subject of recent toolbox talks (How to give feedback – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Monitor health and safety performance by carrying out audits (e.g., weekly site walkabouts) and observations, to see whether set goals are being achieved (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Attend health and safety events to show continued commitment (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Delegate health and safety tasks to workers where you can, give workers the responsibility to make decisions (Leadership check tool – Step 4_ http://www.hse.gov.uk/construction/lwit/step4.htm)</p> <p>3. Commitment to health and safety as a core value of the organisation; have an accurate picture of the risk profile of the organisation; and demonstrate leadership integrity (Better Together eBook, pg 43)</p> <p>3. Understand the common causes of disagreement such as differences over goals, interests or values (Better Together eBook, pg 52)</p>

APPENDIX 10: INTRODUCTORY LETTER TO RESEARCH PARTICIPANTS



Improving Safety: Developing a Worker Engagement Maturity Model

You are being invited to voluntarily participate in an ongoing research. It is important that you understand why the study is being embarked upon and what will be involved. Please take time to read the following guidelines carefully. For any clarification, please contact us on the addresses provided.

Why is this study being done?

The aim is to improve construction industry occupational safety and health through the development of a worker engagement maturity model.

Why have you been approached?

Your organisation has identified you as one of their engaged workers/operatives or supervisors with the requisite capability.

Do you have to participate?

Participation is absolutely voluntary. No individual participant or organisation will be identified in the final report.

What happens if you decide to participate?

A researcher from the School of Engineering and Built Environment, Glasgow Caledonian University will facilitate the interview on a mutually agreed date.

How long will the interview be?

The interview will be non-invasive and open-ended. It will take 30-40 minutes within your site location and audio recorded.

What happens to the information?

The interview will be transcribed and analysed towards developing the maturity model.

What is the benefit of the research?

To improve the working relationships and opportunity for development between workers and management and to further improve workplace safety.

Further information:

Kenneth.Lawani@gcu.ac.uk; 0141 331 8958

APPENDIX 11: INTRODUCTORY LETTER TO INDUSTRY ASSOCIATES21st August 2017

Dear Industry Associate,

Re: Improving Safety: Developing a Worker Engagement Maturity Model

We are writing with regard to the ongoing Worker Engagement research being carried out at Glasgow Caledonian University. We are now in the final phase of the project and are soliciting support from contractors to assist in involving their workforce to partake in our forthcoming 'validation stage' interviews.

The workers being sought for the interviews are 'highly engaged' and 'averagely engaged' workers; direct employees or subcontractors.

The aim is to interview two workers each from at least ten (10) sites which employers will identify to an independent reviewer as 'highly' or 'averagely' engaged workers. Each employer should identify **two highly engaged workers from one site**, and **two average workers from a separate site**. These workers identified as highly and averagely engaged will not be known to the researcher conducting the interviews but to the independent reviewer. Please kindly identify if any of these workers are trade union safety representatives or safety champions to the independent reviewer. Please note that we are not targeting supervisors or managers.

The framework aims to study individual, organisational and project level characteristics, based on descriptive questions derived from the literature, previous interview analysis and Steering Group feedback.

The workers will be guaranteed confidentiality and anonymity and any information collected will be stored securely in compliance with the Data Protection Act. The interviews will be conducted on-site and will last on average 30 minutes per individual worker.

If you can assist, please contact either myself or Kenneth Lawani by email kennth.lawani@gcu.ac.uk or phone 0141 331 8958 by the end of this week. Kenneth will then liaise with you to agree dates etc.

Kind regards,

Billy Hare

APPENDIX 12: INSTRUCTIONS FOR INTERVIEWER

AGENDA: INTERVIEW DESIGN

RECORD DATE, PLACE, INTERVIEWER, INTERVIEWEE

INSTRUCTIONS FOR INTERVIEWER TO ENSURE STANDARD PROCEDURES

Explanatory notes to interviewee: As a worker or operative, being asked about your opinion or your say in relation to Health and Safety matters and how they are managed.

Example 1: Attending a H&S committee or part of a H&S briefing before the start of a shift

Example 2: An informal meeting with supervisor/manager discussing H&S issues with you and asking for your opinions or recommendations.

We should be able to assess a worker on how they have evolved over time with H&S issues by looking at the past and relating it with the present (continuum) either past-present; then-now; bad-good.

OPENING QUESTION: ICE BREAKER

- ✓ From your experience, describe how your input in managing Health and Safety issues has changed over the years that you have worked in construction? Give examples.
- ✓ Presently, are there Good/Bad examples from project to project or employer to employer that you know of? Describe these examples.

General Issues (potential follow up questions):

- A. **Personal/demographic attributes:** Tell me about yourself (**trade/background**, age, experience, education)
- B. **Workers perceptions and attitudes:** What motivates you in terms of Health and Safety?
- C. **Culture:** Describe the general feeling or attitude in relation to Health and Safety in your workplace. Do you feel you can raise any H&S issues (fear, openness, transparency)? Does the culture change from project to project?
- D. **Organisational Structure:** What is the chain of command in terms of making Health and Safety decisions? **Who** do you just take instructions from (Supervisors/Line Managers)? What other people do you engage with? What do you think influences engagement and non-engagement of workers?
- E. **Management/Line Manager:** What do you think of your line Supervisor/Foreman/Manager (General and H&S)
- F. **Other Workers (support):** What do you think of engagement of other workers, their level of engagement and differences in their engagement?

Additional Prompt Questions:

1. How was engagement done? How did it come about?
2. Where does worker engagement take place? Location
3. What are the outcomes of worker engagement? What happens?
4. Continuum process - capture and document the interviewees Worker Engagement development over time

Final: Is there anything else you will want to discuss?

THANK YOU VERY MUCH FOR YOUR TIME