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Published in:
Proceedings of ARCOM Conference 2021: Recover, Rebuild and Renew

Publication date:
2021

Document Version
Publisher's PDF, also known as Version of record

Link to publication in ResearchOnline

Citation for published version (Harvard):
Lawani, K, Hare, B & Cameron, I 2021, Conceptualising self-determination theory as an indicator for improving construction worker motivation. in L Scott & CJ Neilson (eds), *Proceedings of ARCOM Conference 2021: Recover, Rebuild and Renew.* ARCOM, ARCOM Conference 2021: Recover, Rebuild and Renew: 37th Conference and Annual General Meeting, 6/09/21.

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CONCEPTUALISING SELF-DETERMINATION THEORY AS AN INDICATOR FOR IMPROVING CONSTRUCTION WORKER MOTIVATION

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The construction industry is one of UK's most important economic sectors and assessing the motivation of construction workers involves systematic application of psychological research on human behaviour to the problems of workplace H&S. This paper presents the 'bottom-up' approach to worker motivation with emphasis on construction operatives and supervisors regarding the H&S motivation for their roles. The study depicted the types of motivation using the Self-Determination Theory (SDT) as a reliable framework to conceptualise operatives and supervisors' motivation using the traffic light system. The phenomenological research conducted 22 semi-structured, open-ended interviews focusing on the theme of motivation in relation to H&S and the data was thematically analysed. The result reveals that no worker showed signs of lack of motivation (red) but rather, there were variations amongst workers undertaking their roles for either extrinsic (amber) or intrinsic (green) factors. Twelve workers discussed issues of intrinsic motivation e.g., happiness, enjoyment and satisfaction at work while 10 workers discussed issues considered as extrinsic motivation e.g., family, money, career progression, and project delivery. This study adds to existing body of knowledge around the antecedents of motivation for construction workers.

Keywords: motivation; safety; self-determination theory; intrinsic; extrinsic

INTRODUCTION

The construction industry is one of UK's most important economic sectors and the management of construction operatives and their behaviours is fundamental to the success for better work-related performance and improved productivity. The construction operatives constitute the base of every construction project activity and, the process of motivating them and managing their safe behaviour at work is essential for the success of the industry (Bakker and Demerouti, 2008; MacLeod and Clarke, 2009; Baucus *et al.,* 2008). Assessing the motivation of construction operatives involves systematic application of psychological research on human behaviour to the issues of health and safety (H&S) in the workplace. Although behavioural safety initiatives are designed to encourage continuous improvement, it often tends to be interpreted as management 'top-down' imposing behaviours on workers and what managers think is safe behaviour. Workers at the same time view such initiatives as a

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Lawani, K, Billy, H and Cameron, I (2021) Conceptualising Self-Determination Theory as an Indicator for Improving Construction Worker Motivation *In:* Scott, L and Neilson, C J (Eds) *Proceedings of the 37th Annual ARCOM Conference,* 6-7 September 2021, UK, Association of Researchers in Construction Management, 239-248

convenient way for management to transfer their H&S responsibilities and apportion blame to the workforce (Cooper, 2001). In the real sense, motivating the workers would mean engaging the workers towards increasing their passion, enthusiasm, absorption, dedication, workforce meaningful discussions, commitment, empowerment, trust, and energy in the safe execution of tasks the workers undertake, see (Schaufeli, 2013; Lawani *et al.,* 2017; Lawani *et al.,* 2018). This paper reflects on the 'bottom-up' approach on what motivates workers to work safely and adopt the H&S initiatives based on the perception of construction operatives regarding their roles. Research continues to highlight the significance of managing H&S within the workplace and improving workforce motivation, and businesses are turning to enhancing levels of engagement within their influence towards achieving this aim (van Tuin *et al.,* 2020; Wollard and Shuck, 2011). The importance of characterising the motivation of construction operatives by adopting the Self-Determination Theory (SDT) (Gagne and Deci, 2005) lies in the perception of its applicability in predicting positive performance at work and the opportunity of improving construction Safety and Health (Lawani *et al.,* 2019). For construction workers to be motivated and to successfully engage with the principles of safety, health, and wellbeing within the workplace, the effectiveness of existing corporate OSH engagement programmes should help in characterising the types and levels of motivation using the SDT as a valid and reliable framework. Since worker engagement is linked to performance improvement and workplace productivity (Shuck and Herd, 2012; van Tuin *et al.,* 2020), it is vital to understand how all these impact on workers' motivation at work. This is important because motivation is a function of the workers' belief in what they will obtain in expending the effort. As a result of the effort, workers that are highly motivated and high in self-efficacy are intrinsically motivated to perform their jobs (Hudson, 2007).

The Concept of Motivation

One of the key conceptual characterisations of motivation is the SDT which is based on human motivation, development and wellness and it focuses on type and amount of motivation (Deci and Ryan, 1985; Ryan and Deci, 2000; Deci and Ryan, 2008; Gagne and Deci, 2005). It posits three universal psychological needs which are - competence, autonomy, and relatedness, and suggests that work climates that allow satisfaction of these needs facilitate both engagement in the workplace and psychological wellbeing which impacts on workplace H&S. Competence means excelling at challenging tasks and achieving desired outcomes (Skinner 1995); autonomy involves experiencing choice and feeling like initiating one's own actions (Martela and Pessi, 2018; Parmar *et al.,* 2017); and relatedness requires a sense of mutual respect, caring, and reliance on others (Baumeister and Leary 1995) within the workplace.

Motivation is the act of being stimulated to do something and it can be grouped into two subcategories: 'lack of motivation or amotivation' whereby a worker shows no desire or inspiration to act and 'motivated' where a worker is full of enthusiasm or activated towards a desired outcome (Ryan and Deci, 2000). There are theories of motivation that depict motivation as a 'unitary phenomenon' that varies from very little motivation to act to a great deal of motivation, but Ryan and Deci (2000) and Deci and Ryan (2008) clearly suggest that motivation is hardly a unitary phenomenon because people tend to have different amounts and different kinds. For example, a worker varies not only in their levels of motivation (how much motivation), but also in their orientation of that motivation (what type of motivation). The orientation of

the workers' motivation reflects their underlying attitudes and goals that give rise to the 'why' of actions. Deci and Ryan (1985; 2008) therefore clearly illustrated the different types of motivation in the SDT based on the different reasons or goals that gives rise to an action. The most basic difference identifies 'intrinsic motivation' as the doing of something because it is inherently interesting or enjoyable, while 'extrinsic motivation' signifies undertaking a course of action because it leads to a separable outcome (Ryan and Deci, 2000). Therefore, the quality of experience and performance can differ when a worker is behaving for intrinsic or an extrinsic reason.

Theoretical Framework of Motivation

Construction work can be considered as one of the most absorbing activities and it takes up a greater part of the worker's waking day. However, for some, the idea of work is associated with the cause of grief (workplace accidents) while for others it brings a great sense of satisfaction (Herzberg, *et al.,* 2011). There is the notion that workers that have the opportunity to play a role in H&S goal setting and decision-making that affect their work tend to accept changes more readily compared to those experiencing change without any opportunity for them to make any form of contributions (lack of engagement) or exercise their free choice (Deci and Ryan, 2000).

Therefore, studies that have been carried out regarding issues of motivation have more or less focused on job attitudes i.e., job satisfaction; worker's morale; effect of group pressures and supervisory behaviour and organisational competence on the worker (often associated with higher productivity and lower turnover) (Herzberg, *et al.,* 2011; Emelander, 2013), but not specifically on the potential benefits of what motivates construction operatives and supervisors to work safely. The framework depicts how workers in general tend to be motivated in their role; from lacking motivation which this study considers as unacceptable whatever the benefits of their role or task might be to the organisation, to the extrinsic (tolerable) and intrinsic (broadly acceptable) types of motivation in relation to workplace H&S.

Lack of Motivation - Red

This is when the operative or supervisor lacks any intention or drive to do things or accomplish their set task safely. When a worker lacks motivation, their behaviour also lacks intentionality and a sense of personal connection with the task i.e. not valuing an activity, feelings of incompetence, or not believing it will yield a desired outcome (Ryan, 1995; Deci and Ryan, 2000; Gagne *et al.,* 2014). An operative or supervisor that fits this description is considered to be within the unacceptable phase because they will exhibit unsafe characteristics that are undesirable within the jobsite.

Extrinsic motivation - Amber

When a worker engages in an activity or task to obtain an outcome that is discrete from the activity itself, it is referred to as 'extrinsic motivational' behaviour (Vansteenkiste *et al.,* 2006; Ryan and Deci, 2000). Using the SDT framework, extrinsic motives are not only partially internalised but controlled by conditions (van Tuin *et al.,* 2020). A worker does not have to progress through the continuum with respect to a particular regulation but can initially adopt a new behavioural regulation at any point and this is also dependent upon their previous experiences and situational factors (Ryan, 1995). This study refers to this continuum as the tolerable phase where construction workers are motivated to undertake their task safely because of certain conditions e.g., Health and Safety legislations (compliance).

Intrinsic Motivation - Green

Intrinsic motivation is related to having positive experiences that gives pleasure, support growth, and satisfy needs (Emelander, 2013). The sources for these type of motivation for construction workers include skills attainment, intellectual challenge, relationship development with others, confirming or building a positive self-image, and autonomy thus making the worker self-determined (Martela and Pessi, 2018). This study considers intrinsic motivation as the most broadly acceptable form of motivation which should be the desired goal by individuals and the construction industry towards attaining a higher level of health and safety at work. This is when the operative or supervisor is motivated to go above and beyond compliance by displaying citizenship behaviour because of the inherent satisfaction the worker derives from performing their role safely, i.e., 'wanting to' rather than 'having to'.

METHOD

This study used already existent knowledge of motivation theory by applying it directly to construction H&S. Phenomenological research inquiry which allow participants describe their lived experiences of the phenomenon was adopted, (Creswell, 2014; Creswell, 2013; Creswell and Poth, 2017; Marshall and Rossman, 2016). The participants were construction operatives and supervisors willing to share their H&S experiences of what motivates them relative to their work. The eligibility for participation was for construction operatives and supervisors to demonstrate at least one of these qualities: someone who has knowledge of health and safety; (or) actively contributes to health and safety discussions, committees or initiatives; (or) a health and safety champion; (or) a worker who is keen about health and safety matters.

The study implemented semi-structured open-ended interviews to allow for the emergence of themes from the operatives and supervisors. Access to construction workers was facilitated by contractors whose senior personnel were involved as expert Steering Group for a wider study and participation was voluntary. The interviews assessed the operatives' description and perception of their workplace H&S initiatives and their motivation for their roles, and these were mapped into the SDT continuum by adopting the traffic light RAG system (Fig 1).

The continuum starts from lack of motivation and 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 (Deci and Ryan, 2000). The SDT reflects the variation not only in the level of motivation (i.e., how much), but also in the orientation of that motivation (i.e., what type) based on workplace H&S experiences. Research has shown that the quality of experience and performance can be very different when a worker is behaving for intrinsic or extrinsic reasons (Gagné and Deci, 2005).

To assess the motivation of workers regarding their role in relation to H&S within the workplace, the feedback from the operatives and supervisors were used in assigning the worker's motivation based on the framework (Fig 1). Feedback that reflects only 'lack of motivation' are grouped in the red zone (unacceptable or non-self-determined). Feedback that reflects strong emphasis on 'extrinsic motivation' but does not go beyond compliance are grouped in the amber zone (tolerable). Lastly, feedback that strongly emphasises issues of 'intrinsic motivation' and more are grouped in the green zone (broadly acceptable or self-determined). The findings

however revealed that none of the 22 workers showed any signs of lack of motivation but rather, there were discrepancies amongst workers undertaking their roles for either extrinsic or intrinsic H&S-related factors. Hence, grouping the workers along the motivation continuum based on their feedback showed that 12 workers discussed issues of intrinsic motivation (green) related to happiness, enjoyment and satisfaction at work in relation to their workplace H&S experiences while 10 workers discussed issues considered as extrinsic motivation (amber) related to issues of family, money, promotion etc.

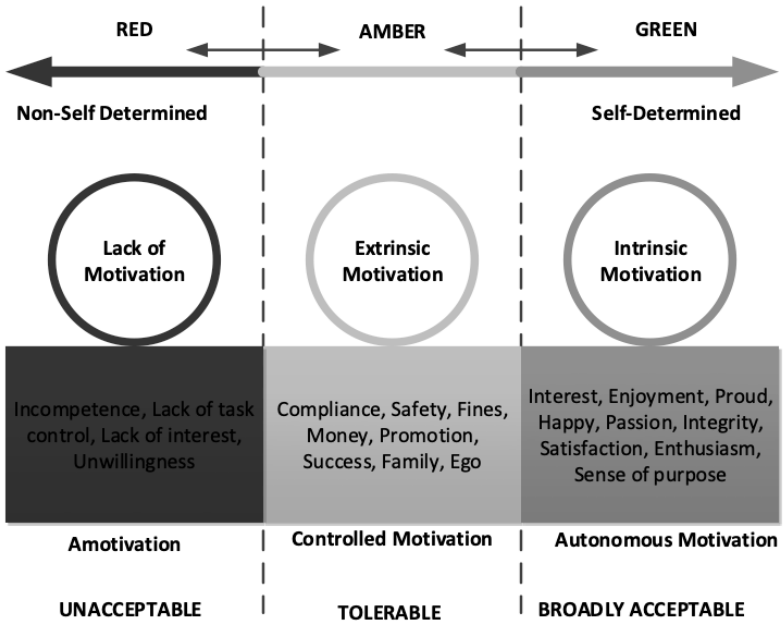

Fig 1: The RAG H&S motivation continuum; adapted from (Ryan and Deci, 2000)

The traffic light system was used to group the workers as follows:

Red: Signifies lack of motivation which predicates an unacceptable worker behaviour.

Amber: Signifies extrinsic motivation which is a form of tolerable behaviour regarding their work because of certain conditions e.g., H&S legislations.

Green: Signifies intrinsic motivation which is a broadly acceptable behaviour because of inherent satisfaction and their citizenship safety behaviour.

Table 1 shows some extracts from the interviews related to extrinsic and intrinsic motivational statements.

Extrinsic Motivation (Amber): The findings indicate that participants that have witnessed unsafe acts within the workplace tend to demonstrate improved safety compliance, and this motivates them to work safely. The participants indicated that working away from home over an extended period of time and knowing that their loved ones are expectant to see them return home safely makes them motivated to adhere to workplace H&S rules. The workers were also wary of being involved in work-related accidents that could result in disablement, fines and prosecutions or even imprisonment. There is a general assumption that some operatives do not regard H&S as a priority when undertaking their tasks because of price work (self-employed).

However, the findings indicate that the operatives were relatively motivated to comply with H&S rules because of their awareness of the current prosecutions in relation to health and safety breaches. The workers within the extrinsic continuum also indicated

that any break in their ability to consistently earn money as a result of workplace accidents would negatively impact on them providing for their families, keeping up with their mortgages and other financial commitments. Therefore, issues of price work associated with wanting to get the job done quicker to earn more money was not considered a priority or a motivational driver.

Table 1: Extrinsic and intrinsic motivational comments by participants

Extrinsic Motivation	Intrinsic Motivation
"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."	"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"
"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 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 work for my kids, that's why I work away; I live in Belfast, 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"	"It makes me feel good knowing that I am doing the job safely. I turn up to work put in a solid day's 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"
"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"	"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"
"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."	"No…. you can't work if you're not healthy or safe. 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"

Aside the psychological and physical trauma associated with workplace accidents, these workers understand the significance of H&S as part of their roles and are keen to keep a steady income stream, free from any form of disruption because their ability to consistently earn is the key factor that keeps them motivated. The workers also indicated that their motivation and reliance on their work teams to work safely and the integration of health and safety in their work activities mitigates dangerous working practices e.g., not taking shortcuts to get the work completed ahead of schedule. However, the absence or lack of onsite supervision can sometimes inadvertently lead to breaches of site H&S rules leading to work-related incidents. Using this framework, the feedback from the 10 workers within the controlled motivation

continuum were founded on their experiences and situational factors (Deci and Ryan, 2000), by exhibiting these extrinsic characteristics as rationale behind their motivation. Workers were extrinsically motivated for various reasons e.g., families and money, career progression, safely 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 safety 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 (Ryan and Deci, 2017).

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 (Gagné and Deci, 2005), and this could lead to reduced engagement, work-related strain and burnout (Van den Broeck *et al.,* 2013; Lawani *et al.,* 2017). The attitudes of the workers could also be associated with the different types of extrinsic motivation e.g., the more controlling factors are in place, the lesser interest, value or effort the workers will display. This is where the bottom-up behavioural safety change and top-down cultural change merge to drive the motivation of workers towards becoming more intrinsic because of the management commitment, leadership and workforce engagement.

Intrinsic Motivation (Green): The workers with intrinsic motivational characteristics were those on more permanent roles and they considered H&S as a priority in their day-to-day activities. The intrinsically motivated workers think that involvement of their colleagues in determining how a job could be performed safely gives them that sense of purpose because it allows everyone to use their skills and their knowledge of construction tasks towards managing risks. These workers were passionate about their role, and they exude enthusiasm in the safe delivery of projects because of their cognitive qualities and their capability to successfully integrate their H&S initiatives. The workers indicated that management goal setting and involvement tends to bring about improved site safety while management commitment brings a sense of purpose and integrity which ultimately encourages the bottom-up safety initiatives.

However, to sustain autonomous motivation within the workplace, the workers suggested that there must be a robust and developed safety infrastructure in place that embrace the workers and management safety initiatives towards maximising worker motivation. Furthermore, workers within the intrinsic continuum are more likely to be offered increased levels of training within the workplace to boost their safety performance, and they have a greater chance of influencing others to act safely. 12 workers displayed intrinsic motivational characteristics based on their feedback by alluding to their level of job satisfaction e.g., feedback and engagement within the workplace, the safe systems of work in place, enjoying their jobs, finding their job interesting due to the positive relationship with other workers, pride, and the autonomy they derive while undertaking their roles safely rather than for some separable outcomes.

These workers described their passion and enthusiasm to safely accomplish their roles above and beyond the legal requirements (exhibiting citizenship behaviour) and all these align with self-determined qualities as shown in Fig 1. The workers however indicated that experiences related to work-related threats, poor safety culture and practices, deadlines, and task completion pressures could sometimes diminish autonomous motivation as they see it as controlling their behaviours (Van den Broeck *et al.,* 2013). Feedback from participants indicated that although many construction

work activities are not intrinsically interesting, devising strategies such as monetary rewards as a central motivational strategy might seem more practical and appealing to workers but this will only mean controlling their motivation. Alternatively, long-term initiatives that could improve workplace H&S, empowerment and engagement of workers towards becoming more self-determined will be more beneficial for workers to sustain intrinsic motivation. Furthermore, the basic psychological needs of the workers in terms of their needs for competence, autonomy and relatedness (Parmar *et al.,* 2017) need to be adequately addressed. Workers that are self-determined demonstrate broadly acceptable qualities and traits in the execution of their tasks, and also embrace the bottom-up and top-down management initiatives. However, sustaining this level of autonomous motivation within the workplace requires everyone to consistently influence others and to attain superior safety performance.

CONCLUSION

Studies that consider the mediating role of motivational characteristics of construction workers in relation to workplace H&S are not that common. The eligibility for involvement in this study indicated the significance of participants being involved or aware of workplace H&S. Therefore, there was no indication of lack of motivation, unacceptable characteristics or a non-self-determined worker amongst the participants. Although this study identified that no participants demonstrated qualities in the red or unacceptable side of the framework, some construction workers however undertake some tasks despite evidence of their lack of competence or lack of motivation based on their behaviours in relation to H&S. Also, a worker that has been identified as showing positive attitude to the task and H&S values needs to be fully supported and engaged or they might end up losing that sense of value under a controlling supervisor or manager and move along the continuum into amotivation. For example, the more the workers feel they are being controlled the less interest, value or effort they will show regarding their roles, and the more the tendency to become less motivated in successfully delivering on their roles.

Workers that demonstrate extrinsic motivational qualities should be engaged and empowered in their roles to achieve a sense of purpose, have personal interest in their roles, are enthusiastic and enjoy their work towards becoming autonomously motivated or self-determined. Many work-related activities undertaken by operatives and supervisors are not intrinsically stimulating and the use of participation and engagement within the workplace to improve the bottom-up and top-down management strategies could enhance intrinsic motivation and yield positive results. Although, the use of monetary rewards as an instrument of social control is a central motivational strategy that seems practical and appealing to most workers, over a long term, this might be unsustainable for the organisation and also prevent the need for workers to aim towards autonomy.

Incentivising workers' motivation for objectives such as productivity and safety might not necessarily lead to enhanced motivation or an improvement in OSH practices. This is because workers with autonomous motivational qualities will naturally undertake their workplace roles as it aligns with what the workers find interesting, exciting and engaging. This RAG framework therefore shows the variability of what makes construction workers motivated to safely undertake their roles and the importance of management ensuring that workers with intrinsic tendencies sustain such qualities whilst workers within the extrinsic continuum are empowered,

challenged and engaged to move along the sliding scale towards becoming more self-determined or autonomously motivated.

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