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Organisational efficacy and the role of management control system in construction industry

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ABSTRACT

Management control system is putatively vital for management to resemble organisational performance.The objective of the study is to understand the role of management control system in organisational efficacy. Management control system has obtained growing attention within both academia and industry as part of OE. As works of literature grow, finding new directions by critically evaluating the research and identifying future trends has become central in advancing knowledge for the field. This paper will review some of the work done in this area of study. Applying management control system as a theoretical lens, we develop a research plan from current OE and management control system literature by offering propositions for future research where management control system may permeate contemporary OE topics. In doing so, we provide an initial foundation for organisational efficacy scholars to both incorporate the role of management control system effects into research and launch new research stream.

1. Introduction

The word efficacy has been originally introduced by Gist (1987) that stated: Self-efficacy may be thought as a superordinate judgement of performance capability that is induced by the assimilation and integration of multiple performance determinants. Bohn (2010) has modified Gist's (1987) description of Organisational Efficacy (OE) as a superordinate judgment of organisational performance capability that is induced by the assimilation and integration of multiple performance determinants including collaboration, vision and mission, focus and adaptive capacity. Outright, the ability of an organisation to know, to work together to achieve their long term objectives, and to be resilient in facing risk is a statement of its efficacy.

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The general idea of organisational theories is derived from Penrose (1959). In her study on Firm Growth Theory, Penrose (1959) highlighted two crucial factors namely; human factor and physical factor. These two factors are the competences of an organisation to grow and perform. However, the firm growth theory has been widely expanded and Albert Bandura (1988) started the Social Cognitive Theory that has three attributes; the development of people (1) cognitive, social and behavioural competencies through modelling, (2) belief in their capabilities in order to use their knowledge, skills and abilities effectively, (3) motivation through goal systems. However, throughout the evolution of theories, it failed to include the important role of management control system.

Collective efficacy is rooted from Self-efficacy Theory by Albert Bandura (1993) that derived from Social Cognitive Theory. The definition of collective efficacy is a group of people in a community whose shared belief is the group capacity to work collectively in the development of action required to produce given level of fulfilments (Albert Bandura, 1998). The definition of collective efficacy is slightly extended to as the shared belief among members of a group that their group or organisation has what it takes to cope effectively and efficiently, with demands, challenges, stressors, and opportunities they face (Bohn, 2010). Albert Bandura (2000a) and Bohn (2002) stated that a group of people with a shared belief to achieve objectives is collective-efficacy.

OE is a subcategory of collective efficacy, which has an established research base (Bandura, 1986a, 2000b). Bandura (1997) identified the construct as “collective OE”. One important distinction is that OE is not self-efficacy. Gist (1987) stated Self-efficacy may be thought as a superordinate judgement of performance capability that is induced by the assimilation and integration of multiple performance determinants. The clarification is important because self-efficacy is a commonly known construct and should not be confused with OE, and thus self-efficacy becomes a construct used for analysing divergent validity. A person may have a strong sense of self-efficacy in an organisation that is failing, and a person with weak or low self-efficacy may find himself emboldened in a company with strong OE. Therefore, this study focuses on OE as the main construct.

1.1 Evolution of OE Concept

OE can be applied to a wide variety of social situations where groups of people engage in collective activity to achieve outcomes, including OE in neighborhoods (Madigan, Wade, Plamondon, & Jenkins, 2016), politics (Pollock, 1983), sports teams (Albert Bandura, 1997).

OE is important to business and organisational settings, as when group members assess their collective efficacy to be low, individual group members come to believe that exerting effort toward a desired goal makes little sense. Thereby, the chances of a successful group accomplishment are perceived to be relatively low (Shamir, 1990). Collective efficacy of a group has been shown to predict the collective performance of that particular group (Gully, Incalcaterra, & Beaubien, 2002; Petrillo, 2015; Pope, 2015; Tasa, Taggar, & Seijts, 2007). Some studies (Kao, 2017; Ma, Long, Zhang, Zhang, & Lam, 2017) have found that high level of motivation among employees have positive effects on collective efficacy towards achieving goals and objectives. Agreeing to Kao (2017), Cheema and Javed (2017) added employees’ commitment helps to increase OE too.

There is a lack of control mechanism in Table 1 on the definitions of collective efficacy since 1986. Kerr, Rouse, and Villiers (2015) as well as Wijethilake (2017) built a literature that encourages further examination of how internal management control systems (MCS) interact with sustainability reporting in the business world. However, control mechanisms construct usually can be found in construction industry study setting. Unlike MCS, OE is least likely to be seen in construction industry comparing to financial institution or education. Therefore, this study focuses on OE and MCS in construction industry.

MCS as defined by Simons (1995), who divided the MCS into four broad categories, namely, belief, boundary, interactive and diagnostic MCS. All these four categories have different function and usage to be implemented in an organisation.

Table 1. Evolution of OE Concept

Author(s)	Definition
Bandura (1986)	Perceived collective efficacy will influence what people choose to do as a group, how much effort they put into it, and their staying power when group efforts fail to produce results
Shea & Guzzo (1987)	To perform effectively, groups also need at least a minimal belief in their own efficacy
Shamir, 1990	Group members assess their collective efficacy to be low, individual group members come to believe that exerting effort toward a desired goal makes little sense because the chances of a successful group accomplishment are perceived to be low
Riggs et al. (1994)	Collective efficacy refers to individual's assessments of their group's collective ability to perform job-related behaviours
Zaccaro, Blair, Peterson, & Zazanis, (1995)	Collective efficacy as "a sense of collective competence shared among individuals when allocating, coordinating, and integrating their resources in a successful concerted response to specific situational demands
Bandura (1997)	Perceived collective efficacy is defined as a group's shared belief in its conjoint capabilities to organise and execute courses of action required to produce given levels of attainments
Buckingham & Coffmann, 1999	People in an organisation high in efficacy would seem to demonstrate a high degree of morale, a desire to be at work, and a desire to do the work; they would be enthusiastic workers who want to be part of an organisation (employee engagement?), workers willing to take on a challenge, workers who believe they are stronger than their competition, with a track record of accomplishments, a substantial vision for the future, and significant evidence of innovation
Kozub and McDonnell (2000)	Collective efficacy is a part of the perceptions individuals hold of the group's performance capabilities
Gully, Incalcaterra, Joshi, & Beaubien, 2002; Tasa, Taggar, & Seijts, 2007	The collective efficacy of a group has been shown to predict the collective performance of that group
Bohn (2010)	OE is defined as a generative capacity within an organisation to cope effectively with the demands, challenges, stressors, and opportunities it encounters within the business environment. It exists as an aggregated judgment of an organisation's individual members' assessment of their (a) collective capacities, (b) mission or purpose, and (c) sense of resilience.

1.2 Management Control System as critical lever for change

MCS are critical levers for strategic change and renewal. They are put in place to respond to information and control needs as organisations grow, but these levers are neither static nor deterministic. They can be used in many ways to suit the agendas of individual managers in different strategic contexts.

Previous study offered a coherent and comprehensive management control theory (Simons, 1995). Management control functions can be used to achieve organisational objectives by controlling the strategy of an organisation and providing guidance to managers. Simons (1995) stressed that successful and effective implementation of an organisation's strategy depends on the understanding of certain theory which is put into perspective that organisations are created to achieve specific goals, and members of the organisation need to interact to keep the organisation's goal clear as cited in Schoch (2017) and Su, Baird, and Schoch (2015). After conducting a ten-year intensive research study on the operation of control systems in more than 100 US businesses, Simons developed a coherent model called the "levers of control". This model is used for managers to have systems for both the control and freedom to be flexible, innovative and creative. His model shows that the monitoring of plans is only one of the four dimensions; belief, boundary, interactive and diagnostic MCSs (Armesh, Salarzehi, & Kord, 2010; Bellora & Günther, 2011; Kalpana, 2013).

Simons argued that in order to be effective, the traditional monitoring of plans or diagnostic control systems must be supplemented by boundary control systems, belief control systems and interactive control systems. Simons (1995) also emphasised that managers can achieve the benefits of innovation and creativity without having to lose control by using the levers of control as supported by Fried, Götze, Möller and Pecas (2017). The levers of control model assumes that people desire to contribute, to do things the right or proper way, to achieve and to create (Peljhan & Tekavčič, 2008). However, organisation often makes it difficult for individuals to understand the purpose or mission of the organisation. Simons (1995) then suggested that, to reduce this organisational block, the core values and the mission of the organisation should be actively communicated by the senior managers to their subordinates.

Leadership should protect against organisational drift and misguided behaviours by establishing direction, aligning, motivating, and inspiring people, and defending institutional integrity (Lo, Ramayah, & Wang, 2015). MCSs revolutionise limitless opportunity range into a focused sphere that leaders and organisational members are inspired to accomplish (Su & Baird, 2017a). Two key variable score values and business risks must be analyzed to understand how these systems can be designed and used to support business strategy.

In addition to providing momentum and commitment (Cheema & Javed, 2017), by having robust belief and crystal boundary MCSs, it could assist managers to deal with employees who are unpleasant in activities (Crutzen, Zvezdov, & Schaltegger, 2017). This is because unpleasant employees could imperil the integrity of the business and deplete organisational resources and thereby not contributing to organisation's competitive strengths. This guarantees managers to focus on setting the organisation in confronting the competitive challenges in the industry.

1.3 Belief and Boundary Control System

Belief systems are explicit sets of organisational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organisation (Peljhan & Tekavčič, 2011). The definitions espouse the values and directions that senior managers require subordinates to adopt (Bellora & Günther, 2011). These core values are linked to the business strategy of the firm. Formal belief systems are created and communicated through such documents as credos, mission statements, and statements of purpose. In construction industry such communication is done within the organisation and related parties especially in a project.

The primary purpose of belief systems is to inspire and guide organisational search and discovery. When problems arise in implementing strategy, belief systems help participants to determine the types of problems and to search for the solutions. Most importantly, in the absence of problems, belief systems motivate individuals to seek new ways of creating value. Organisational belief systems are created by the symbolic use of information. Great leaders and competent managers understand the power of symbolism and inspiration (Westley & Mintzberg, 1989). As Feldman and March (1981) noted, at individual level, symbols produce belief and belief stimulates the discovery of new realities. Effective managers actively communicate core values and mission throughout their organisations in order to inspire people.

An organisation relies on both the formal and informal belief systems to inspire employees' commitments (Peljhan & Tekavčič, 2011). However, temptations and pressures always exist in an organisation. This may lead to cutting corners, diverting assets or otherwise choosing courses of action that are against the ethical code of conduct. This is because some behaviours cannot be tolerated, and thereby boundary systems are needed to ensure that individuals are aware of the consequences of crossing ethical boundaries (Simons, 1995).

Belief and boundary systems are the formal, information-based cycles and procedures assisting decision makers to control orderliness in organisational activities (Bellora & Günther, 2011). These procurements have been converted into systems by managers and control specialists to communicate information on beliefs and boundaries, inside and outside the organisation through education programmes, documents, awareness surveys and feedback sessions (Crombie & Geekie, 2010). Beliefs and boundaries, if they are to be living systems, must be reinforced continually within the organisation (Tessier & Otley, 2012). Working together, these two levers create forces of yin and yang. The warm, positive, inspirational beliefs are a foil to dark and cold constraints. The result is a dynamic tension between commitment and punishment. Senior managers drive both processes.

Boundary systems, the second lever of control, delineate the acceptable domain of activity for organisational participants. Boundary systems do not specify positive ideals preferably, they establish limits, based on defined business risks, to opportunity-seeking (Simons, 1995). On the one hand, then, the use of imprecise belief systems inspires unfocused search behaviours that risk dissipating the resources and energies of the firm. In addition, it is inappropriate for senior managers to specify in detail how participants should search for opportunity in the conduct of their work. Senior managers solve this dilemma by dictating what subordinates should not do and relying on individual's creativity to search for ways of creating values within these boundaries. Thus, boundary systems are usually stated in negative terms or as minimum standards. Codes of conduct, operational guidelines, asset acquisition regulations and predefined strategic planning methods are all controlled by boundary systems. Relating to construction industry, every year there is new act and guideline the industry need to comply with to ensure this industry will bloom and leads Malaysia to be a developed nation.

Although boundary systems are essentially proscriptive or negative systems, they allow managers to delegate decision making and thereby allow the organisation to achieve maximum flexibility and creativity. In many ways, boundary systems are prerequisites for organisational freedom and entrepreneurial behaviour. Ask yourself why there are brakes in a car. Is their function to slow down the car or to allow it to go faster? Boundary systems are like brakes of a car: without them, cars (or organisations) cannot operate at high speeds.

1.4 Interactive and Diagnostic Control System

Interactive control systems are formal information systems managers use to involve themselves regularly and personally in the decision activities of subordinates (Peljhan & Tekavčič, 2011). Interactive control systems focus on attention and force dialogues throughout the organisation. They provide frameworks, or agendas, for debate, and motivate information gathering outside of routine channels. An interactive system is not a unique type of control system: many types of control systems can be used interactively by senior managers. Interactive control systems involve incorporating process data into management interaction, questioning and challenging data, assumptions and action plans of subordinates and in person meetings with employees. It also provides strategic feedback to update and redirect strategy such as market feedback reports and competitve analysis.

Interactive control systems are used to guide the bottom-up emergence of strategy. In the emergent model, individuals throughout the organisation act on their own initiative to seize unexpected opportunities and deal with problems (Schoch, 2017; Su & Baird, 2017b). Some of these actions will be tactically important; others will not. Successful experiments will be repeated and expanded. Over time, the organisation will adjust its strategies to capitalize on the learning that resulted from testing these new ideas (Su & Baird, 2017b). To encapsulate the contradistinctive aspects of interactive control systems and how they are managed, a comparison with the attributes of diagnostic control systems (Mohamed, Shu Hui, Kamal Abdul Rahman, & Abdul Aziz, 2008). The common denominator for all interactive control systems is continuous re-estimation of future states and consideration of how to best react (Fried et al., 2017; Schoch, 2017; Su & Baird, 2017b). Interactive systems are not only concerned with forecasting but, most

importantly, with linking forecasts to action. Attention to process, rather than to predetermined outcomes, is the critical ingredient of success.

The last lever of control, the diagnostic systems, that focus on rule compliance, support management on an important basis such as accounting data, milestones, budget and project timelines (Bellora & Günther, 2011; Schoch, 2017). Variables controlled by diagnostic control systems are performance or output measurement, valuation standards, compensation systems and incentive systems (Schoch, 2017; Strauß & Zecher, 2013). They are used by the managers of effective organisations to monitor organisational outcomes, correct errors or deviations and set standard for desired performance (Kerr et al., 2015; Strauß & Zecher, 2013). The diagnostic use of organisational information can help achieve organisational goals by motivating the employees and make goals more attainable and predictable (de Villiers, Rouse, & Kerr, 2016; Domingo, Canet-Giner, & Redondo-Cano, 2011).

The diagnostic use of performance with the focus of organisational actions on critical performance variables (Schoch, 2017), drives the compliance with goals and boosts OE for the whole organisation (Gurd, Lim, & Thorne, 2012). This takes away the management attention which is both time and cost consuming for OE. According to Hanafi & Fatma (2015) and Widener (2007), there is a positive correlation of both interactive and diagnostic use of performance measurement and organisational performance.

1.5 Construction Industry in Malaysia

Construction is a process that concists of building or assembling of infrastructure. In Malaysia, this industry is divided into two broad categories; general construction and special trade works. Construction industry is one of the contributing industry in Malaysia's GDP that makes it an important part of Malaysian economy (Construction Industry Development Board (CIDB) Malaysia, 2015). This is also due to the amount of other related industry linked to construction such as basic metals products and electrical machinery. In 2016, the construction industry experienced the lowest productivity level when compared to other industries. The Malaysian Productivity Report 2016/17 showed the sector achieving a productivity level of RM40,018 per worker compared to the agriculture (RM55,485), services (RM68,166) and manufacturing sector (RM106,647) (Malaysia Productivity Corporation, 2017). Hence, the construction industry is a substantial economic driver for Malaysia. There are several factors contributing to this issue, one of it is mismanagement in the organisation of construction industry (Hadi, Salleh, & Mei, 2015). Unable to be efficacious and lacking in control mechanism in managing the organisation might lead to the unsustainable industry. Therefore, this study will give awareness to practitioners the importance of organisational efficacy and the four levers of control mechanisms as discussed in earlier section.

2. Discussion and Conclusion

The evolution of MCSs is inevitable, by integrating new ways and different control systems emerge as combined strategy or to complement each other, to maximize the performance and enhance competition of organisation especially in increasing productivity of construction industry (Malaysia Productivity Corporation, 2017). Simons' four levers of control is one of the innovative control systems to drive the strategic renewal for OE, which all managers should learn firsthand.

Simons' levers of control have a deeper and more thoughtful approach. According to Simons (1995), MCSs are information-based procedures and routines managers use to maintain or alter the patterns in the organisational activities. The four levers of control is especially powerful when it is used to monitor performance and change the behaviour in an effort to achieve the desired results. Boundary and diagnostic control systems help constrain opportunistic or self-interested behaviour; Belief and interactive control systems help encourage pro-active and pro-orgnisational behaviour. They are summed up as integrated systems for collective information to motivate and evaluate management's and employee's behaviours.

Simons' levers of control can not only moderate top managers' behaviour and maximise OE, it also helps minimise agency cost with the behaviour changes over time. Top managers will understand how to balance the competing roles by managing the tension between the self-serving and collective-serving behaviour. Control mechanism starts from phenomenological approach to human behavior (Chandiramani, 2014; McPherson & Martin, 2017). Previously, in clinical academic studies mentioned that efficacy is correlated with control that is related to the power of an individual's thinking in improving health state (McPherson & Martin, 2017; Myers, Theiveyanathan, O'Brien, & Bond, 1996).

In addition, the levers of control framework provides researchers and organisation to assess the effectiveness of the board of directors. Belief, boundary, interactive control and diagnostic control systems should all work together and are necessary for the assessment and effective management (Ferreira & Otley, 2009; Simons, 1995). With the interview of directors and managers, a further understanding of issues for greater efficacy and information can be obtained for researchers and organisation.

Though complementing each other to achieve optimal results, certain system is favoured over another due to their differences. For instance, interactive control requires ongoing both formal and informal discussion and debate with meetings, phone calls and emails among boards of directors and managers. On the other hand, diagnostic control needs periodical investigation and monitoring with boards and directors receiving reports with wide range of information, from managers before formal meetings (Crombie & Geekie, 2010). Therefore, boundary and diagnostic systems from the four levers fit better for traditional organisations, compared to belief and interactive control systems.

OE is employees' beliefs of organisational capacity to be effective (Shea & Guzzo, 1987; Zaccaro et al., 1995) and are considered from two perspectives, i.e. orgnisational effectiveness and collective OE. Organisational effectiveness is competing values approach, according to Cameron, Dutton, and Quinn (2003), while Albert Bandura (1997) coined the theory of OE. The literature review suggests that a multifaceted measurement of employees' beliefs of OE to be provided with the instruments of competing values and collective OE.

Based on the study by Chaudhary, Rangnekar, and Barua (2012) cited by Kravchenko (2014), OE is able to predict collective work engagement, such as vigor and dedication, and the result is consistent with the effect of self-efficacy on individual work engagement. Collective work engagement is the perception and judgement by employees regarding how effective their group is, and their level of involvement and concentration on work that drives performance (Fearon et al., 2013).

Collective efficacy within an organisation is stated by Patras and Klest (2011) cited by Pope (2015) to be "an important predictor of group behaviour and outcomes for organisational tasks", with organisations possessing high degree of collective efficacy also demonstrate better organisastion performance. However, other forms of collective efficacy to problem solving, organisational decision making, commitment and movitvation still remains as areas that lacks research (Kravchenko, 2014; Pope, 2015; Tasa & Whyte, 2005).

In conclusion, it is found that both self-efficacy and collective efficacy in organisation are important predictors of successful OE and performance. However, there is also a lack of research in relation to levers of control in OE. Therefore, this paper advocates the stimulation of further discussion and debate, and the need for further research using boundary, belief, interactive and diagnostic control mechanisms. Ultimately, these four levers of control can be better understood for their roles in OE and its effectiveness.

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