A dimensional analysis of stakeholder assessment of project outcomes

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Abstract

Driven by an interest in developing a deeper understanding of stakeholder interests, this study undertakes a dimensional analysis of how different stakeholders assess project outcomes. Most importantly, in our analysis, we take into consideration the largely unaccounted-for conceptual difference between project success and project failure. Data were collected over a two-year period (between 2013 and 2015) from 1631 project stakeholders in nine countries. We analysed the survey data using three-way Multidimensional Scaling. We found that most project stakeholders tend to be more specific in their assessment of project success than when assessing project failure. We also found that most stakeholders attached maximal and different levels of importance to different dimensions of project outcomes. In particular, we found that when assessing project "success", project stakeholders appear more focused on project effectiveness. On the other hand, when assessing project "failure", project stakeholders appear more focused on efficiency. Understanding how stakeholders assess and prioritise project outcomes is of particular interest to project managers as it enables them develop a clearer understanding of individual interests of various stakeholders. For stakeholders themselves, such an understanding helps limit possible disruptions to the project emanating from contesting decisions made by the project manager.

Keywords: Stakeholder; Project outcomes; Scale development.

1.0 INTRODUCTION

1.1 Overview

From the literature (Engwall 2003; Stal-Le Cardinal and Marle 2006; Cano and Lidon 2011), we understand that projects represent the major entity that organisations employ in delivering and structuring their operational objectives. Projects are the core means employed in the planning, control and implementation of operations and they are now widely recognised as adding value to modern operations (Rolstadas 1994; Parvan et al. 2015). Most recently, Lundin (2016) has described projects from a much wider and broader perspective, introducing the notion of the 'project society', in effect describing the evolution of a much wider role of projects within the society.

What is deemed to be a successful or a failed project is largely determined by the network of stakeholders involved in the project (Pinto and Slevin 1988; Wateridge 1995; Lim

and Mohamed 1999; Van der Panne et al. 2003; Bryde and Robinson 2005; de Vries, 2009; Chipulu et al. 2014; Davis, 2014; Ojiako et al. 2014, 2015; Kannan 2017). By stating that stakeholders possess the necessary "interests to assist or hinder the organization's objectives" (Phillips et al. 2003, p. 481), the literature offers a logical notion that there is a need for organisations to be judicious of how different stakeholders assess project outcomes (Harrington et al. 2016). Here, we draw from Liu and Walker (1998) and McLeod and MacDonell (2011) to conceptualise project 'outcomes' as 'goals'.

The reality, however, is that while the organisation "must pay attention to any group or individual who can affect or is affected by the organization's purpose, because that group may prevent [the firm's] accomplishments" (Freeman 1984, p. 52), doing so is particularly challenging because of three main factors. Firstly, project outcomes are multidimensional (Pinto and Slevin 1988; Pinto and Mantel 1990; Dvir and Shenhar 1992; Hoegl and Gemuenden 2001; Icmeli Tukel and Rom 2001; Shenhar et al. 2001; Chipulu et al. 2014) and asymmetrical in nature. Herein, by multidimensional we imply/infer the existence of a number of different assessment parameters of project outcomes, and that different project stakeholders may utilise different parameters for different projects at different times. However, by 'asymmetrical', we mean that the different parameters used to assess project outcomes do not necessarily need to correspond to each other when assessing project success on one hand and project failure on the other hand. Secondly, the range of relationships that exist between organisations and stakeholders and among stakeholders themselves because such relationships are largely framed around different strategic priorities (Bundy et al. 2018), are extremely complex (Godenhjelm and Johanson 2016; McGivern et al. 2017), involves complex managerial balancing (Tantalo and Priem 2016) and can be transformed over time (Friedman and Miles 2002). Finally, project stakeholders are heterogeneous and this heterogeneity leads to considerable differences in terms of how various stakeholders assess project outcomes (Bridoux and Stoelhorst 2014; Chipulu et al. 2014; Hall et al. 2014; Ojiako et al. 2014, 2015).

It is within these highlighted contexts that we seek to undertake a dimensional analysis of how different stakeholders assess project outcomes. Our study specifically contributes to knowledge in that it extends various works of scholarship on dimensionality of project outcomes, specifically that of Chipulu et al. (2014) and Ojiako et al. (2014, 2015). Unlike these previous studies, though, we examined project success and project failure

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factors taking into account that conceptual difference (dichotomy) is derived from the multidimensional and asymmetrical nature of project success and project failure.

1.2 Development of the research questions

It is important to facilitate such understanding because stakeholders' interest in projects is part and parcel of the collection of ethical, legal and institutional challenges that organisations face when sponsoring initiatives that constitute projects. In sum, we posit that (i) that different stakeholders define project success and project failure in different ways and thus measure them differently, (ii) that different stakeholders also define project success and project failure in a manner which is multidimensional and asymmetrical, and (iii) that these definitions impact upon project success and project failure (in terms of the traditional definition) of the project. We argue that ignorance or limited understanding of these factors may negatively impact upon efforts to reconcile stakeholder interests and deliver successful project outcomes. Thus, our research question is:

> *What dimensions do different stakeholders employ in assessing project outcomes and how does the multidimensional and asymmetrical nature of project success and project failure impact upon any congruency[1] in such assessment?*

To explore this research question, the authors conducted a quantitative survey of practicing project management professionals across eight countries. Data collection lasted for two years (between 2013 and 2015). The data obtained from 1631 project stakeholders represents a distinct opportunity for the authors to undertake a study of their (the stakeholders') priorities in projects. In doing this, our study (i) responds to calls for a broader conceptualisation of existing perspectives within the project management discipline (Svejvig and Andersen 2015), (ii) contributes to the project management body of knowledge in general and project success and failure literature in particular, and (iii) contributes to stakeholder management literature in project and operations.

[1] In this study, we utilise the term 'congruency' in its simple literal meaning which implies coinciding assessments made by individual stakeholders.

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2.0 REVIEW OF THE LITERATURE

2.1 Projects as entities for stakeholder collaboration

Projects, typically, involve diverse and complex activities (Clegg et al. 2002; Geraldi et al. 2011). Projects are managed, delivered and monitored through ephemeral and amorphous project teams (Scott-Young and Samson 2008, 2009) and, because successful delivery is largely dependent on temporary alliances between individuals and groups (Walker and Lloyd-Walker 2014; Bakker et al. 2016), they are generally perceived as strong exemplars of collaboration (Littau et al. 2010; Ollus et al. 2011). In this respect, projects represent platforms, upon which there is a constant need to balance conflicting claims by individual stakeholders and groups. Sometime this may require project managers to assess and prioritise the relative importance of individual stakeholders (Chipulu et al. 2014; Ojiako et al. 2015).

Despite substantial review of the literature on project success and project failure (see Van der Panne et al. 2003; Ika 2009; Savolainen et al. 2012; Dwivedi et al. 2015), we argue based on the works of Davis (2014) that in a project and operations context, the prevalence of predominantly generic schemes for identifying how different stakeholders define project outcomes has not necessarily been transformed into a thorough understanding of the two concepts. Ika (2009), Dwivedi et al. (2015) and Williams (2016) suggest that, over the last few years, there has been a transitional development in the literature in terms of how project success is being conceptualised. Underlying this transition appears to be developments in the literature surrounding (i) the stakeholder view of those outcomes and (ii) the dimensionality of project outcomes.

2.2. The stakeholder view of project outcomes

Arguably, the stakeholder view emerged following studies by Baker et al. (1974) who concluded that the outcome of a project could only exist in a form perceived by individuals interested in the project. This point was reiterated by Pinto and Slevin (1988) whose work focused on expanding notions of how such outcomes were assessed by incorporating the views of external parties. It was also deemed important (see Wateridge 1995) that most (if not all) stakeholders accepted the prevailing outcome dimensions. However, Lim and Mohamed (1999) asserted that, for this to occur, a balancing and negotiation of prevailing interest was required. This was because it was unlikely that all stakeholders will at any given

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time hold the same views on such dimensions. This view was reiterated by Van der Panne et al. (2003). In fact as de Vries (2009) pointed out, these views emerged following intense negotiation and opportunistic behaviour on the part of stakeholders. Other studies that have explored the stakeholder view of project success include Bryde and Robinson (2005) who found that clients do not necessarily place a stronger emphasis on meeting the needs of stakeholders when compared to contractors. More recent studies on the stakeholder view of project outcomes have been undertaken by Chipulu et al. (2014), Ojiako et al. (2014, 2015) and Kannan (2017).

In Chipulu et al. (2014), the authors took a more individual perspective of stakeholders, and found that the level of importance that stakeholders assign to project outcomes was dependent on a number of individual demographic factors such as age, gender and national cultural identity. The study by Chipulu et al. (2014) is interesting in that it draws upon data from multiple stakeholders groups. It is however limited in that it did not explicitly account for variance in measures for different stakeholders. The likely impact of this limitation is the emergence of unobserved project outcome dimensions. Adopting a similar individual stakeholder perspective, Ojiako et al. (2014) found that project role and the age of an individual impacted upon how they may, as a stakeholder, form and revise their judgements on project outcomes. Ojiako et al. (2015) found that demography also impacted upon the likelihood that individual stakeholders will perceive project outcomes similarly.

To summate, heterogeneity emerges because within project and operational contexts, individual stakeholders focus on different socially constructed parameters of outcomes (Shenhar et al. 2002; Chandrasekaran et al. 2015; Ojiako et al. 2015). This means that different project stakeholders may hold different perceptions of the outcome of projects (assessed against success and failure), depending on a number of individual factors that may include their individual perceptions of risk and the degree to which they may ascribe priority to individual project success and/or failure dimensions. In a number of cases, the importance ascribed to such factors is determined by situational attributes of specific stakeholders such as power and legitimacy. It is however acknowledged that such heterogeneity is not in reality necessarily undesirable as it reflects diversity in competency and capabilities: But heterogeneity can lead to the emergence of tensions not only between

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the organisation and its stakeholders, but also between individual stakeholders (Brooks et al., 2011).

2.3 Dimensionality of project outcomes

A review of the literature suggests that the dimensionality of project outcomes is determined against measures of project success and project failure.

Success in projects has many meanings (Van der Panne et al. 2003; Shenhar 2004; Ika 2009; Samset 2010; Muller et al. 2012; Savolainen et al. 2012; Turner and Zolin 2012; Mir and Pinnington 2014; Dwivedi et al. 2015; Williams 2016) and aspects (Pinto and Slevin 1987, 1988; Pinto and Mantel 1990; Dvir and Shenhar 1992; Dvir et al. 1998; Hoegl and Gemuenden 2001; Icmeli Tukel and Rom 2001; Shenhar et al. 2001, 2002; Chipulu et al. 2014). From this body of literature, it has become clear that project success was as described by Mir and Pinnington (2014) "…a complex, multi-dimensional concept encompassing many [more] attributes" (p. 203). These attributes appear wide and varied. Thus, as an example, Shenhar et al. (2002) found project success to encompass 13 different dimensions while Samset (2010) suggested five dimensions for project success (efficiency, effectiveness, relevance, impact and sustainability). For project success, Muller et al. (2012) adopt the "iron triangle plus nine other success criteria" (p. 78). Finally, Williams (2016) identified 17 dimensions for project success (for one specific organisation) which he categorises against four categories; these are (i) Goodness of the final product, (ii) Stakeholder satisfaction, (iii) Achievement of delivery objectives, and (iv) Success of the project management.

We posit (based on Williams 2016), that the five dimensions of project success identified by Samset (2010) remain particularly influential in articulating the multidimensionality of project success in that this work focuses our attention on the need to balance project *efficiency* (which asks whether project implementation can be optimised in a manner that minimises waste and expense) as against *effectiveness* (which asks whether the intended goals of the project were actually delivered). We, however, argue that there is an important underlying differentiation between two sets of dimensions of success. A permanent or sponsoring organisation (Lundin and Soderholm 1995) seeks benefits or value from a project, so it requires a temporary or project organisation to deliver a project. The permanent organisation seeks the outcomes for which the project is designed. The project

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organisation strives to deliver the outputs it is required to deliver. The permanent organisation is thus interested in the "benefits" or "value" or "effectiveness" of the project. We observe that Samset (2010) developed this latter into the dimensions discussed above. The temporary organisation for its part is interested in delivering what it has been tasked with, in which is project *efficiency*, often abbreviated as the so-called "iron triangle", which Chih and Zwikael (2015) point out creates an "output-focused" mentality. Muller and Turner (2007) interestingly suggest that it is the particularly inexperienced project managers who focus on "iron triangle" measures. Badewi (2016) discussed the project-management-focused "efficiency" and benefits-management-focused "effectiveness" approaches; and shows how they both differ from and complement each other. Within these of course there are many nuances and facets particularly in how "benefits" are perceived by different stakeholders; these are discussed below.

Similar to project success, academic literature that has focused exclusively on reviewing project failure as a concept does exist. Jorgensen (2014) for example defined project failure as a concept that occurs when projects are "both cancelled and completed with a very poor product or process quality"… and are likely to … deliver[s] something other than what was originally specified or expected (p. 157). It is also conceptualised as an inability to reconcile both implicitly- and explicitly-stated (Anand et al. 2010; Ojiako et al., 2014) technical business project specifications of projects (Shenhar et al. 1997, 2001).

Literature on project failure includes Lyytinen and Hirschheim (1988), Pinto and Mantel (1990), Cule et al. (2000), Yeo (2002), Dwivedi et al. (2013) and Hughes et al. (2016). For example, in Lyytinen and Hirschheim (1988), four major attributes of project failure were identified that, among other outcomes, failed to achieve (i) Design goals and requirements, (ii) Budgetary and time requirements, (iii) User satisfaction, and (iv) Requirements, values or expectations of stakeholders. Pinto and Mantel (1990) found support to justify a multi-dimensional conceptualisation of project failure that was largely dependent on three contingency factors which they identified as (i) How failure is defined, (ii) Project type, and (iii) Phase of the project in which such judgement was made. Cule et al. (2000) identified four factors (construed as risk categories) likely to lead to project failure while Yeo (2002) created a broad project failure framework comprising of three sub-sets of failure factors. Perhaps, then, it is not surprising that Nixon et al. (2011) had claimed that an

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all-encompassing and overarching definition of project failure was in reality "unattainable" (p. 212).

2.4 Contradictions in project success and project failure

Taking into consideration the substantial literature on project success and project failure, what however remains of particular interest to us is that, from a dimensional stakeholder perspective, the literature either appears to be focusing exclusively on project success as in the case of Shenhar (2004), Muller et al. (2012) and Turner and Zolin (2012) or exclusively on project failure such as Pinto and Mantel (1990) and Hughes et al. (2016). So far, we have not identified any studies that have explored project success and/or project failure by taking into consideration "…the inherent contradictions of the success/failure dichotomy" (Dwivedi et al. 2015; p. 153). This is the main contribution of our study as we believe that such considerations are important in projects particularly due to the existence of multiple stakeholders that serve as the primary source of multidimensionality (see Costa and Menichini 2013). For example, in a number of studies such as Chipulu et al. (2014) and Ojiako et al. (2014, 2015), it appears that project success and project failure have been construed as "… two sides of the same coin" (Dwivedi et al. 2015; p. 153). Yet, as the literature (Wateridge 1998; Mahring and Keil 2008; Bharadwaj et al. 2009) emphasises, project success and project failure are neither "black and white" (Baccarini 1999; p. 31) nor do not represent opposite images of the other.

Attribution theory (see Heider 1958; Weiner and Kukla 1970; Frieze and Weiner 1971; Weiner et al. 1987) claims that success and failure is a task achievement that is primarily attributed to a number of parameters which includes effort, ability and task difficulty. Attribution theory also claims that these parameters will have different impacts on success and failure. Within the context of projects, the conceptual difference between success and failure is observed for example in differences in terms of the (i) impact (Lyytinen and Robey 1999) and (ii) consequences of success and failure (Myers 1994; Montealegre and Keil 2000; Mahring and Keil 2008). Ojiako et al. (2014) acknowledged the limitations of current concepts of the success/failure dichotomy by pointing to a need for a more robust assessment of project outcomes that objectively aggregates project success and project failure not into a "polarized state or outcome" (Fincham 2002; p. 1), but as a "thematic interpretation placed on a train of events" (Fincham 2002; p. 5).

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3.0 THE STUDY

Figure 1 is a diagrammatical representation of the approach adopted in the study.

Figure 1 Diagrammatical representation of research approach

STAGES	Description
STAGE 1	We organise the literature into themes that allow for the identification of stakeholder congruent project outcome dimensions. These dimensions will serve as a typology for undertaking any dimensional analysis of stakeholder assessment of project outcomes.
STAGE 2	Six outcome dimensions that will serve as a typology for undertaking any dimensional analysis of stakeholder assessment of project outcomes are identified as (i) 'Client (project sponsor) satisfaction' (ii) 'Execution and efficiency' (iii) 'Quality (conformance to standards)' (iv) 'Team Development' (v) 'Organizational Strategy' and (vi) 'Societal/community impact'.
STAGE 3	We generate and assign measures to these dimensions by (i) compiling a comprehensive list of measures from the literature on multi- multidimensionality of project outcomes (a total of 97 measures are identified) (ii) generating and assigning measures to these dimensions (this is undertaken through an expert panel which examines face validity) (iii) the results are used to reduce the number of measures to a more parsimonious set that matches the dimensions (iv) for each measure, the scores of the expert panel are then summed up across all six dimensions (v) Searching and dropping the duplicate measures (this leaves 51 measures).
STAGE 4	A pilot study is undertaken using a seven-point Likert scale. The objective being to (i) examine relatedness among constituent measures on each dimension and (ii) to obtain feedback on item clarity and user-friendliness.
STAGE 5	A general survey is conducted (i) designed against the remaining 44 measures that emerged from the pilot study (ii) the survey is administered in Brazil, Canada, China, Greece, India, Indonesia, Lebanon, the United Kingdom and the United States (iii) data is obtained from 1631 project stakeholders.
STAGE 6	Data analysis is undertaking utilising Multidimensional Scaling (MDS). This allowed for (i) the estimation of six dimensional space common to all stakeholder groups (ii) calculating the coordinates of the 44 measures on the six dimensions recovered from the MDS structure common to all 14 stakeholders (iii) highlighting of the highest loading measures on each dimension which served as our primary identifiers for each dimension (iv) interpretation of each dimension based on its similarity to the six dimensions identified a priori from the literature review(v) an analysis of the difference in the weights stakeholder groups attached to each dimension

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3.1 Identifying stakeholder-congruent project outcome dimensions

We began the study by first identifying, through the literature, project outcome dimensions that will serve as a typology for undertaking any dimensional analysis of stakeholder assessment of project outcomes. In the paragraphs that follow, we organise the literature into themes that will identify these stakeholder-congruent project outcome dimensions.

From the literature, it appears that individual stakeholders may be particularly interested in specific aspects of a project, thus limiting their influence on the wider project. For example, Fineman and Clarke (1996) suggest that external stakeholders tend to focus on human-oriented and pro-environmental activities while internal stakeholders tend to be more concerned with activities seen to be task-oriented (Beringer et al. 2013). Unger-Aviram et al. (2013) suggest a more limited role for stakeholders in that they found that stakeholder feedback only improves the *effectiveness* of project teams, not their *efficiency*. According to Unger-Aviram et al. (2013), this is likely to occur because of a perception within project environments that, unlike human-oriented activities, task-oriented activities – because they are more measureable against the "iron triangle", or at least the two dimensions 'cost' and 'time' (of the "iron triangle") are more likely to have a direct and positive impact on desired project outcomes (project success). This position, however, contradicts with extant literature that tells us that the behavioural dimension rather than the task-oriented dimension of projects is more likely to lead to project success (see for example Rudolph et al. 2008). Taking this literature into consideration, we term this emergent dimension of project outcomes '*Execution and efficiency'*.

Previous research identifies collaboration and team working as a key factor in project success (Ollus et al. 2011; Wu et al. 2011; Mishra et al. 2015; Lindsjorn et al. 2016; van Marrewijk et al. 2016). In particular, team working enables stakeholders in a project to mitigate against perceptions that other stakeholders are engaging in behaviour which is opportunistic. Without such perceptions, the need to expend considerable resources on structural controls and monitoring becomes negated (see Clegg et al. 2002). According to Guerci and Shani (2014), internal stakeholders may have considerable influence on the team's ability to create a shared purpose. Such shared purposes facilitate greater understanding of project team goals. Thus, internal stakeholders may be more likely to be interested in task-oriented activities that occur within the team. On the other hand, Marrone et al. (2007) posit that external stakeholders tend to be more involved in

boundary-spanning activities. These roles require less emphasis on team development and instead tend to focus on contractual negotiation, environmental scanning and information acquisition. We term this emergent dimension of project outcomes '*Team development'*.

The literature alludes to projects representing the major approach that organisations employ in delivering and structuring their operational objectives (Rolstadas 1994; Lovejoy 1998; Hayes 2002; Maylor et al. 2008). This arises from more expansive views of projects in the literature as articulated by scholars such as Shenhar (2004) and Srivannaboon and Milosevic (2006), which suggests that, rather than simply being conduits for organisations to execute strategy, projects are integral to organisational strategy. The relationship between projects and strategy is best elucidated by Longman and Mullins (2004) who suggest that "…any strategy session that is worth its salt ultimately distils vision [statements] into critical business issues, and if the organization is really serious, these issues get distilled into projects" (p. 54). In effect, organisational strategy is primarily implemented through projects (Lord 1993; Pellegrinelli and Bowman 1994). We term this emergent dimension of project outcomes '*Organisational strategy'*.

A central premise of stakeholder literature which is of interest to the project management discipline is that by focusing on stakeholders' interests, project organisations are able to firstly resolve stakeholder incongruence through clearer understanding of these interests (de Vries 2009; Gattiker and Carter 2010; Kannan 2017) and secondly, reduce stakeholder-related conflicts which remain one of the most underestimated risks in projects (Aaltonen and Sivonen 2009). It is important to highlight that very recent stakeholder literature is beginning to counter the idea that complex managerial balancing – arguably an essential element of stakeholder management must involve either managerial trade-offs of competing stakeholder interests or the prioritization of individual stakeholder interests above those of others. Tantalo and Priem (2016) for example offers an alternative perspective to the dominant stakeholder competition interest assumption which allows for organisations to be able to simultaneously address the interest of multiple stakeholders. Although being the case, the literature contends that resolving stakeholder incongruence enhances the possibility that the delivery of projects will be successful (Aaltonen et al. 2008; Aaltonen and Sivonen 2009; Pan and Pan 2011; Beringer et al. 2013; Davis 2014; Kloppenborg et al. 2014). Given the dependence of projects on the resources that stakeholders control, stakeholders may have considerable leverage in projects (Davis 2014).

According to Kistruck et al. (2015), of primary interest to managers when dealing with operational (and by implication, project) challenges is the degree of heterogeneity among clients. Managers tend to be particularly concerned about their ability to forge relationships with clients, and manage their varying goal objectives, demands, delivery schedules and decision-making processes. We term this emergent dimension of project outcomes '*Client (project sponsor) satisfaction'*.

Although project management literature is rooted in the notion of a singular projects, Engwall (2003) reminds us that projects do not occur in a vacuum. In fact, more recent studies by Lundin (2016) discuss the wider impact of projects at societal level. Projects are no longer representative of organisationally-embedded approaches to task structuring (the so-called 'Project-Based Organization') but are now representative of the way in which the society is organised. We term this emergent dimension of project outcomes '*Societal/community impact'*.

Forming one side of the so-called iron triangle (see Atkinson 1999), *quality* – which we conceptualise as conformance to standards (Sousa and Voss 2002) – has remained one of the core dimensions in the assessment of project outcomes; however, both Ojanen et al. (2002) and Jung and Wang (2006) claim that the quest for precise quality measures in projects remains elusive and challenging. Su et al. (2014) point out that operations strategy literature has, for a considerable period of time, highlighted the need to set out competitive advantage in terms of quality. In fact Roth and Miller (1992) and Rosenzweig and Roth (2004) provide empirical evidence to support the argument that quality serves as the core foundation for other competitive dimensions within operations. In our study, because the quality dimension we propose is similar to the subscales of 'meeting design goals' (Shenhar et al. 2002) and 'meeting technical specifications (Tukel and Rom 2001), we term this emergent dimension of project outcomes '*Quality (Conformance to standards)'.*

3.2 Measures and data: Generating and assigning measures to dimensions

Following our identification from the literature of the six project outcome dimensions that will serve as a typology for the dimensional analysis of stakeholder assessment of project outcomes, we then set out to generate and assign measures to these dimensions. Thus, paradigmatically, the approach we now describe seeks to confirm our literature-derived dimensions rather than to derive new ones.

We commenced this process by first compiling a comprehensive list of measures from earlier highlighted literature which had explicitly modelled the multidimensionality of project outcomes (Pinto and Mantel 1990; Tukel and Rom 2001; Shenhar et al. 2002; Collins and Baccarini 2004; Muller et al. 2012; Chipulu et al. 2014). Each of these studies had introduced additional or, *prima facia*, new measures for assessing project failure and project success. We identified a total of 97 measures from the seven key studies on multidimensional assessments of project outcomes (i.e. Pinto and Mantel 1990; Hoegl and Gemuenden 2001; Icmeli Tukel and Rom 2001; Shenhar et al. 2002; Collins and Baccarini 2004; Muller et al. 2012; Chipulu et al. 2014). However, since from these seven studies only a few of the measures represented *Societal/community impact* and *Organisational Strategy*, we created three additional measures for each dimension, leading to 103 measures.

Next we began to generate and assign measures to dimensions which involved examining face validity. This was undertaken through consultation with an expert panel. This panel comprised eight academics who have each published on the topic of interest (project success-failure outcome assessments) and as a result were familiar with project assessment scales. We requested the panel members to state how well they thought each of the 103 measures matched against each of the six deduced project assessment dimensions. Responses could be '0' = 'not at all', '1' = 'somewhat matches this dimension' or 2 = 'very closely matches this dimension'.

We used the panel results, first, to reduce the number of measures to a more parsimonious set that matches the dimensions well. For each measure, we summed the scores of the panel across *all* six dimensions. Although the theoretical range of the overall total is 0-16, the actual minimum was seven and the maximum was 16. The mean was 12.9 and the median was 12.4. We dropped all the measures with a total score less than 12, i.e. less than both the mean and the median. Secondly, we use the panel results to decide the dimension that was the best fit for each of the remaining measures. For each measure, we calculated the total score across panel members on each dimension. We then allocated each measure to the dimension where measure's total score across the panel was maximum. There were no ties, indicating a high degree of consensus among the panel on the best-fitting dimension for each measure. Finally, we searched for and dropped duplicate measures such as 'cost' and 'budget', leaving 51 measures, which we then turned into pilot survey items using a seven-point, agree-disagree Likert-type scale.

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3.3 Pilot study and measure refinement

We conducted the pilot to examine relatedness among constituent measures on each dimension and also to obtain feedback on item clarity and user-friendliness. Drawing upon individual professional networks and contacts, two of the researchers based in the United Kingdom collected the pilot data from project practitioners in the United Kingdom. Two versions of the pilot survey were created based on the experimental framing of projects earlier developed by Pinto and Mantel (1990): The 'failure' version of the survey questionnaire asked respondents to rate an ongoing or a recently completed project that they would classify as a 'failure' because 'knowing what you know now, you would NOT fund, develop or support the project.' The 'success' version of the survey questionnaire on the other hand asked respondents to rate a project they would fund, develop or support. We randomly allocated 50% of the respondents to each version. Respondent data were valid only if the respondent confirmed familiarity with an ongoing or a recently completed project fitting their version. In total, we obtained 116 valid 'success' cases and 100 valid 'failure' cases. We calculated the Cronbach's alpha for each dimension within each sample. We dropped seven measures because alpha results suggested they were not sufficiently consistent with other measures on the same dimension because the alpha value increased when we deleted the measure from the scale, or the measure had a very low item-total correlation.

3.4 Survey data collection

Utilising the remaining 44 measures using the qualitative pilot feedback, we developed a survey instrument (in English). The questionnaires were administered to respondents across nine countries; Brazil, Canada, China, Greece, India, Indonesia, Lebanon, the United Kingdom and the United States. The questionnaires disseminated in Brazil, China, Greece, Indonesia and Lebanon were first translated into predominant local language of each country (Portuguese, Mandarin, Greek, Bahasa and Arabic) using standard translation and back-translation techniques (e.g., Brislin 1970). The questionnaires disseminated in Canada, the United Kingdom and United States were in English.

To collect data, each researcher based in Brazil, Canada, China, Greece, India, Indonesia, Lebanon, the United Kingdom and the United States approached individuals in

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their own professional networks to complete the survey, in person or online. In effect, data were collected utilising non-random purposive sampling. Aiming to gather a large dataset of $N \geq 1000$ whilst maximising respondent heterogeneity, each researcher was given a target of 200 projects to have assessed by as many different project participants as possible within their network. Following the snowballing strategy, we then asked each participant to forward the survey on to practitioners in their own professional network. Although, as in the pilot we randomly assigned respondents to 'success' or 'failure' surveys following pilot feedback, during data gathering we allowed respondents to switch versions if they did not have experience of a recent project in their randomly assigned category. We collected data from 2013 for 24 months.

3.5 Overview of survey data

Altogether, we gathered valid data from 1631 project stakeholders. It is common for researchers (Turner and Zolin 2012, Ojiako et al. 2014, 2015) to classify project stakeholders by role. Likewise, as an initial classifier, we asked respondents to select the option that best described their role based on categories that we adopted from recent studies by Ojiako and his colleagues (Ojiako et al. 2014; Ojiako et al. 2015) who had examined project role as a main effect and found it significant. With the exception of project consultants who may be external to the project organisation (but consult with it), we then further categorised the declared roles into 'internal' and 'external'. As observed in Table 1, most respondents were internal, having acted as manager, director or team member. Of the projects they assessed, project managers considered 68% of these 'successes', the largest proportion of 'successes' in any group. Project directors were similar, having assessed 65% as 'successes'. In contrast, with 54% of 'failures', 'members of the community where the project was conducted' was the only group to assess a larger of proportion of 'failures'.

Table 1: Distribution of stakeholders by role and success-failure type

Internal-External Category	**Stakeholder Classification by Role**	**Type Frequency (Per cent) by Type**		
		Success	Failure	**Total**
Internal	Project team member	342 (21.43%)	246 (15.41%)	588 (36.84%)
	Project manager	242 (15.16%)	116 (7.27%)	358 (22.43%)
	Member of project steering	46 (2.88%)	27 (1.69%)	73 (4.57%)

	group or Board of Directors			
	Project director	103 (6.45%)	56 (3.51%)	159 (9.96%)
External	End user, client, sponsor or customer	65 (4.07%)	60 (3.76%)	125 (7.83%)
	Member of the Community where project was conducted	31 (1.94%)	37 (2.32%)	68 (4.26%)
Unclassified	Project consultant	111 (6.95%)	103 (6.45%)	214 (13.41%)
	Others	6 (0.38%)	5 (0.31%)	11 (0.69%)
Total		946 (59.27%)	650 (40.73%)	1596 (100%)
Frequency Missing = 41				

3.6 MDS Analysis of Project Success-failure Measures

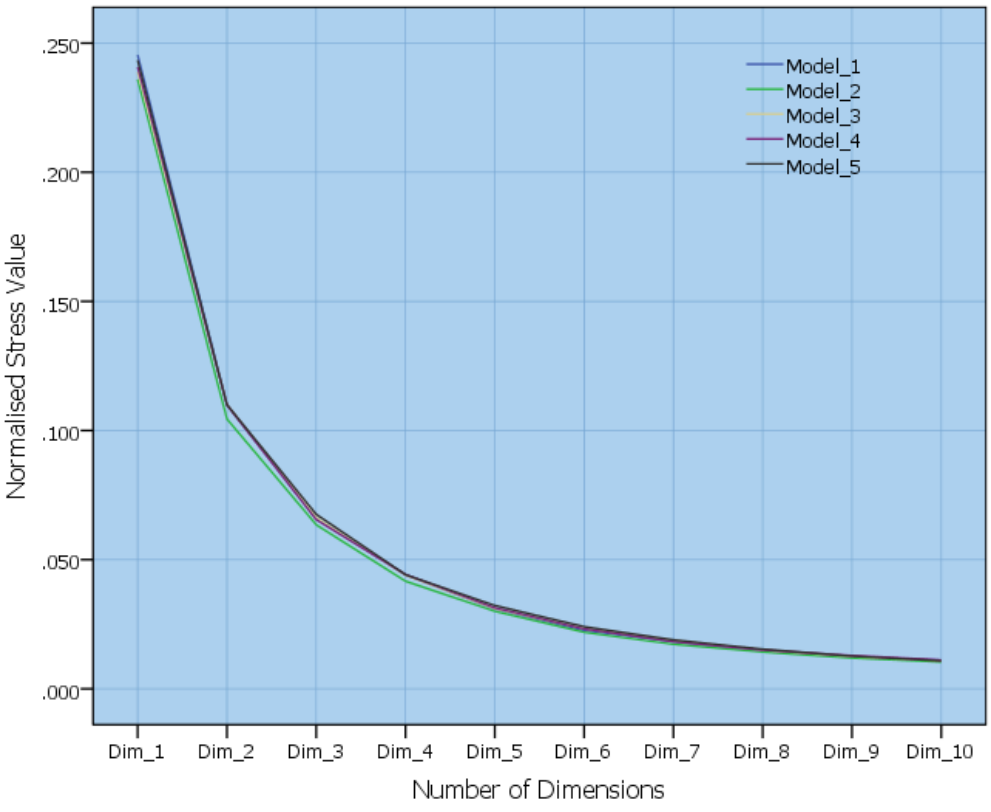
We analysed the data using Multidimensional Scaling (Borg and Groenen 2005). Typically, Multidimensional Scaling (MDS) begins with a dataset containing a large number of entities, which could be variables or cases. Based on how similar entities are to one another, MDS then reduces the entities to a small number of dimensions, which capture the majority of the structure within the data. Three-way MDS (Carroll and Green 1997) submits that proximity data from different data stakeholder groups may simultaneously have a common structure, e.g., among variables or cases, but also different structures pertinent to each data stakeholder group. Thus, we can undertake a three-way study the data structure; that is, across cases, variables and stakeholder groups. It is because of its ability to combine different types of data and represent them in the same space (Carroll and Green 1997) that we chose 3-way MDS as our primary analysis tool. Three-way MDS enables us to simultaneously examine not only the common dimensions that all stakeholders may use to assess project outcomes but also differences across stakeholder groups through the subjective lens of 'success' or 'failure'.

In this study we identified 14 data sources (which we show in Appendix A), comprising the different stakeholder groups differentiated by the lens of assessment – i.e. 'success' or 'failure'. We excluded 'other' stakeholders, whose stake is unclear, and all cases with missing values on project role, reducing the number of respondents available for MDS analysis to 1585.

3.7 Number of MDS dimensions to retain

It is usual to specify the number of dimensions to retain in the 3-way MDS model *a priori*. As in the case of prior studies such as Chipulu et al. (2013) and Khoja et al. (2016), we employed a separate, independent model to aid this decision. First, we extracted five samples from the dataset using bootstrapping. Each sample was the same size as the original dataset and stratified so that it contained 59% 'successes' and 41% 'failures'. Next, for each sample, we calculated the proximity between each pair of the 44 measures using the Euclidian metric. We then entered the proximity-matrix of each sample for MDS analysis using the *Proxscal* algorithm. Figure 2 shows the *scree plots* of the five models based on normalised stress. The results converge, indicating a stable solution.

Figure 2 Normalised Stress per MDS dimension



All curves turn slowly and lack clear 'elbows'. Between dimensions one and six, each additional dimension improves model fit, particularly between one and two; but after six dimensions, stress drops to 0.02 and, thereafter, there is no appreciable improvement. This

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suggests that the six dimensions explain a substantial amount of the structure in the data and any additional dimension will add very little substance while increasing complexity. Based on this, we specified*, a priori*, a six-dimensional 3-way MDS solution.

3.8 The 3-Way MDS Procedure

We began the 3-way MDS by calculating the proximities among the variables for each data source using the squared Euclidean metric, producing 14 proximity matrices, one for each source. We rescaled the proximity values in each matrix to a range of 0 to 1. This was a critical analytical step in that it helped us mitigate the problem of unequal sample sizes across the data sources: we calculated the proximity matrix for each source using only the data for that source, whereas, subsequently, when we used the rescaled proximity matrices, *all proximity matrices carried equal weight*.

Using the 14 matrices as input data, we then conducted the 3-way MDS using the *Prefscal* algorithm (Busing et al. 2005) specifying a six-dimensional solution. The *Prefscal* algorithm began by estimating a six-dimensional space common to all 14 stakeholder groups. It then estimated a six-dimensional space pertinent to each source by shrinking (or extending) the common space along each of the six dimensions based on the weight each source attaches to the dimension.

To obtain a distribution of the values of the weight that each source attaches to the dimensions, and to better understand weight differences, we took 100 samples of the data using bootstrapping. Each sample was of equal size to the original dataset and stratified by source. We then re-ran the 3-way MDS for each sample, generating 100 weight values for each source on the six dimensions. We then used general linear models (GLM) to analyse the differences in the weights that stakeholder groups attach to each dimension, while controlling for the effect of the assessment frame of 'success' or 'failure'.

4.0 FINDINGS

4.1 MDS Model Fit for original expert panel-assigned dimension

The 3-way MDS model was a very good fit for the data. Normalised Stress was .08 and the model accounted for 70% of the variance. The Sum-of-Squares of DeSarbo's Intermixedness Indices was 0.12 and Shepard's Rough Non-degeneracy Index was 0.76, indicating a non-degenerate solution (Busing et al. 2005).

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In Table 2 (below), which was derived from the original expert panel-assigned dimension for each measure, we show the coordinates of the 44 measures on the six dimensions recovered from the 3-way MDS structure common to all 14 stakeholder groups.

Table 2: Coordinates of Measures on Common MDS Success-failure Dimensions

Final Description	Expert panel-assigned dimension	Dim1	Dim2	Dim3	Dim4	Dim5	Dim6
This project will have a positive impact for the client.	*'Client (project sponsor) satisfaction'*	1.12	-0.13	1.17	-0.66	0.66	1.10
The project will be used.	*'Client (project sponsor) satisfaction'*	1.02	-0.31	0.65	0.02	0.49	1.01
This project solves the problems for which it was created.	*'Client (project sponsor) satisfaction'*	1.20	0.94	0.08	0.20	0.01	0.90
This project is a definite improvement.	*'Client (project sponsor) satisfaction'*	0.58	0.73	0.35	0.66	-0.74	0.90
The project has satisfied all customer demands.	*'Client (project sponsor) satisfaction'*	1.09	0.36	-0.62	-0.14	0.85	0.74
The project will benefit its users.	*'Client (project sponsor) satisfaction'*	1.22	0.87	0.70	0.51	0.23	0.64
This project will lead to improved performance for the client.	*'Client (project sponsor) satisfaction'*	1.10	0.22	1.06	-0.72	1.01	0.63
All stakeholders were satisfied with the project outcomes.	*'Client (project sponsor) satisfaction'*	1.20	-0.05	-1.69	0.07	-0.85	-0.52
Important clients will use the project.	*'Client (project sponsor) satisfaction'*	0.94	0.55	0.35	1.51	-1.13	0.44
From the client's perspective, all project goals were achieved.	*'Client (project sponsor) satisfaction'*	1.28	-0.08	-1.53	0.89	-0.14	-0.24
The project satisfied all user needs.	*'Client (project sponsor) satisfaction'*	1.14	0.09	-1.71	0.38	-0.61	0.01
The project will contribute to the local and national economies.	*'Societal/community impact'*	-0.37	0.38	0.42	0.45	-2.05	-2.47
The project will benefit the local community.	*'Societal/community impact'*	0.36	0.61	0.39	0.60	-0.70	-1.86
The local community was satisfied with the project process.	*'Societal/community impact'*	0.88	0.36	-1.52	1.91	-1.70	-1.64
From the local community's perspective, all project goals were achieved.	*'Societal/community impact'*	0.79	0.43	-1.26	0.45	0.08	0.15

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The project has been accepted by the local community.	*'Societal/community impact'*	0.68	0.78	-0.38	1.74	0.15	0.12
Project leadership was satisfactory.	*'Execution and efficiency'*	1.18	-1.23	-1.24	-0.14	-1.12	-1.46
The project management process was satisfactory.	*'Execution and efficiency'*	1.11	-1.51	-0.90	-0.31	-1.05	-1.24
The agreed project scope was achieved.	*'Execution and efficiency'*	1.05	-0.32	-1.11	0.03	-0.85	-0.85
The project was within schedule.	*'Execution and efficiency'*	0.26	-1.71	-0.23	-0.42	-1.13	-0.76
Project risk management was satisfactory.	*'Execution and efficiency'*	1.01	-0.99	-1.45	0.11	-1.23	-0.42
The project was within budget.	*'Execution and efficiency'*	0.03	-1.61	0.31	-0.68	-0.04	0.05
The project improved our relations with external suppliers and contractors.	*'Organisational Strategy'*	0.52	0.57	-0.90	0.98	0.12	-1.56
The project improved our organisational image.	*'Organisational Strategy'*	1.11	0.94	-1.22	0.51	-0.36	-1.51
From our organization's perspective, the project progressed well.	*'Organisational Strategy'*	1.17	-1.41	-0.83	-0.67	0.01	-1.28
The product(s) from the project will be commercially successful.	*'Organisational Strategy'*	0.16	0.82	-0.49	1.65	1.00	0.89
The product(s) from the project will create a new market.	*'Organisational Strategy'*	-0.87	-1.14	-0.06	0.92	0.18	0.76
The project developed a new technology.	*'Organisational Strategy'*	-0.89	-1.25	-0.25	0.26	-0.07	0.68
The project contributed positively to our business objectives (e.g., sales, costs).	*'Organisational Strategy'*	1.06	0.01	0.86	-0.67	1.37	-0.62
From our organisation's perspective, all project goals were achieved.	*'Organisational Strategy'*	1.19	-0.75	-1.22	-0.26	-0.16	-0.58
The product(s) from the project will increase our market share.	*'Organisational Strategy'*	-0.30	-0.82	0.70	-0.06	3.77	0.35
The project created a new product-line.	*'Organisational Strategy'*	-0.92	-0.96	-0.73	0.20	-0.20	0.30
The project will result in repeat business or repeat work for our organization.	*'Organisational Strategy'*	0.80	0.73	0.65	1.61	-0.21	0.27
The project will contribute to our organisational strategy (e.g., increasing competitiveness or effectiveness).	*'Organisational Strategy'*	1.01	-1.38	0.48	0.60	1.53	0.11
From the client's perspective, the project achieved the technical specifications.	*'Quality (conformance to standards)'*	1.19	0.01	-0.58	-0.38	1.24	0.99
The project has achieved the standards expected in the industry.	*'Quality (conformance to standards)'*	1.15	0.39	-1.73	1.60	-0.72	-0.83
The project achieved the performance criteria set by the client.	*'Quality (conformance to standards)'*	1.23	0.17	-1.55	0.61	0.15	0.63
The product(s) from the project proved to be robust in operation.	*'Quality (conformance to standards)'*	1.06	0.32	-1.05	1.02	-1.01	0.42

The product(s) from the project proved to be stable in operation.	*'Quality (conformance to standards)'*	1.21	-0.01	-1.60	1.32	-0.25	-0.23
Project team members were satisfied with the project process.	*'Team Development'*	1.19	-1.02	-0.95	-0.42	0.80	-1.41
Project team members forged good relationships.	*'Team Development'*	1.05	-1.13	0.82	1.75	-1.02	-1.16
The project team was satisfied with the project result.	*'Team Development'*	1.02	-0.26	-1.22	0.33	-0.54	-1.08
The project team learned important lessons from the project.	*'Team Development'*	1.08	-1.32	0.76	2.47	0.37	0.56
The project team members would like to do this type of collaborative work again.	*'Team Development'*	1.12	0.31	0.76	2.08	0.25	-0.17

We have highlighted the five highest-loading measures on each dimension. These served as our primary identifiers for each dimension. Researchers such as Carroll and Green (1997) and Khoja et al. (2016) tend to either use adjunct techniques such as clustering or theory to help them interpret the dimensions. We interpreted each dimension based on its similarity to the six dimensions we had earlier identified *a priori* from the literature. As in the case of other data reduction techniques such as Principal Component Analysis (PCA), scholars such as Chipulu et al. (2013) and Khoja et al. (2016) tend to use high-loading variables to identify MDS dimensions. We have only highlighted 24 of the 44 measures. Some measures are not discriminating enough for stakeholders to use when assessing a specific project outcome and so do not exhibit any notable loading on any dimension to testify to the outcome represented. We interpreted the dimensions as shown in Figure 3, below.

Figure 3 MDS Project success-Project failure dimensions

Dimension No.	Description
Dimension 1: Client (project sponsor) Satisfaction	Dimension 1 strongly correlates with three measures that the expert panel originally assigned to client satisfaction: whether 'all project goals are achieved from the client's perspective', the extent 'the project benefits its users' and 'solves the problems for which it was created'. Although the measures the project 'achieved outcome criteria set by the client' and product(s) from the project 'proved stable in operation', which the expert panel originally assigned to the quality dimension, also load highly on dimension 1, they will as will be shown below load more strongly on dimension 3 (This will indicate that both measures are stronger identifiers of dimension 3 than 1 and that dimension 3 is strongly linked to quality of stakeholders).

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Dimension 2: Execution and efficiency	Dimension 2 strongly relates to the extent the project was 'within schedule and budget', and how satisfactory the 'project management process' was, which the expert panel assigned to execution and efficiency. Two measures from the organisational strategy dimension on how well the 'project progressed from the organisation's perspective' and the extent it will 'contribute to organisational strategy' also load highly on dimension 2, which suggests overlap between organisational strategy and execution and efficiency.
Dimension 3: Quality (conformance to standards)	Apart from the project 'achieved outcome criteria set by the client' (project sponsor) and product(s) from the project 'proved stable in operation', which also load highly on dimension 1, the high load of how well the project 'achieved the standards expected' in the industry supports the idea that dimension 3 represents quality. Further inspection reveals that, besides the two quality measures that load highly on dimensions 1 and 3, the client satisfaction measures, the 'project satisfied all user needs and all stakeholders were satisfied with the project outcomes' also load highly on dimension 3; but the measures load oppositely on the two dimensions. This pattern of loadings suggests stakeholders may use the client (project sponsor) satisfaction and quality (conformance to standards) dimensions in contrasting ways.
Dimension 4: Team Development	Dimension 4 correlates strongly with three measures that the expert panel matched to team development. These includes whether the 'project team learned important lessons from the project', 'would do this type of collaborative work again and forged good relationships'. The high loadings of the 'local community was satisfied with the project process' and 'accepted by the local community', suggest team development overlaps some aspects of Societal/community impact.
Dimension 5: Organisational Strategy	'Projects are likely to perform well on dimension 5 if they 'increase market share', contribute to 'organisational strategy' or 'business goals'. According to the expert panel, these aspects represent organisational strategy. We also note that the measures of the project's contribution to the 'local and national economy' and the satisfaction of the 'local community' also strongly, but negatively, load on dimension 5. This suggests stakeholders may trade-off how well a project contributes to organisational strategy against some aspects of its impact on community.
Dimension 6: Societal/community Impact	Dimension 6 strongly correlates with 'contribution to the local and national economy', 'benefit to the local community' and 'satisfaction of the local community with the project process'. Hence, we suggest that this represents community impact. We note that two measures, namely the 'project improved relations with external suppliers' and 'contractors and organisational image', that the expert panel matched to organisational strategy, also load highly on dimension 6. We argue that this is because both the measures, while clearly assessing how well a project contributes to organisational strategy, are also clearly indicative of ability to manage relationships and reputation, requisites for managing community impact. Therefore, the commonality. Projects that do perform well on Society/community impact may also do well on aspects of organisational strategy that rely on relationship and image building.

4.2 How stakeholders weight dimensions across the success-failure boundary

In Table 3 (below), we show results of rescaling the six MDS dimensions to fit the characteristics of the 14 data sources/stakeholder groups (which we show in Appendix A). The rescaling contains three key aspects. The first is the **importance** of each dimension based on variance-accounted-for (VAF). Dimensions 1 ('*Client (project sponsor) Satisfaction'*) is the most important as it accounts for 51% of the variance. Dimension 2 ('*Execution and efficiency'*) and dimension 3 (*'Quality (conformance to standards)*'), respectively, account for 20% and 13%. Dimensions 4 ('*Team Development'*), 5 ('*Organizational Strategy'*) and 6 (*'Societal/community impact'*) each accounts for around 5%. The second aspect is the **specificity** of each source. Specificity measures how a source apportions importance among the dimensions. There are two extremes. A source with zero specificity is wholly nonspecific and will attach equal importance to all six dimensions. By contrast a source with specificity of one will cognise one dimension only and ignore the others. Here, sources range from low specificity (0.37, project consultants) to high (0.77, project directors). Except for project consultants and team members, we found that most stakeholder groups were more specific when assessing success than when assessing failure.

Table 3: Stakeholder Specificity; Dimensional Importance and Weight

Source	**LENS**	**Dimensional Weight**						**Specificity**
		Dim_1	Dim_2	Dim_3	Dim_4	Dim_5	Dim_6	
Project team member	**SUCCESS**	**9275**	4650	1600	2057	3030	225	**0.41**
Project manager		**9087**	2700	302	1030	1458	57	**0.60**
Project consultant		**8715**	2820	754	1346	1995	1355	**0.37**
Project director		**9525**	2174	33	132	395	391	**0.77**
End user, client, sponsor or customer		**7416**	1912	52	3373	3455	2	**0.62**
Project steering group or Board of Directors		**8916**	4587	252	155	3500	181	**0.65**
Member of Community where project was conducted		**8962**	3481	6	104	2	3515	**0.74**

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Project team member	FAILURE	1773	**5778**	4795	1045	50	1575	**0.53**
Project manager		1578	**5926**	5471	252	1556	1101	**0.53**
Project consultant		358	**4575**	4282	2767	1536	1492	**0.40**
Project director		348	**5023**	3309	2457	16	0	**0.67**
End user, client, sponsor or customer		838	3561	**3703**	1983	773	0	**0.57**
Project steering group or Board of Directors		8	2890	4146	**5503**	3715	5506	**0.54**
Member of Community where project was conducted		2836	3056	**4977**	39	1064	2000	**0.54**
Importance		**0.51**	**0.20**	**0.13**	**0.06**	**0.05**	**0.05**	

The final aspect is the **weights** that stakeholders attach to each dimension, which exhibits two broad patterns. The first is stakeholder congruence; as we have highlighted, all stakeholders attached maximal weight to dimension 1 ('*Client (project sponsor) Satisfaction'*), when assessing success. However, when assessing failure, they appeared to place maximal weight mostly on dimension 2 ('*Execution and efficiency'*) or dimension 3 (*'Quality (conformance to standards)*'). Average Euclidean distance, as we illustrate in Figure 4 (below), suggest that distances are typically greater among the weights a stakeholder group attaches to different dimensions than they are among the weights different stakeholder groups attach to each dimension. In particular, inter-stakeholder weight distances were in ascending order, smallest on dimension 3 (*'Quality (conformance to standards)*'), dimension 1 ('*Client (project sponsor) Satisfaction'*), and dimension 2 ('*Execution and efficiency'*).

Figure 4 Average Inter-stakeholder and Inter-dimensional Weight Distances

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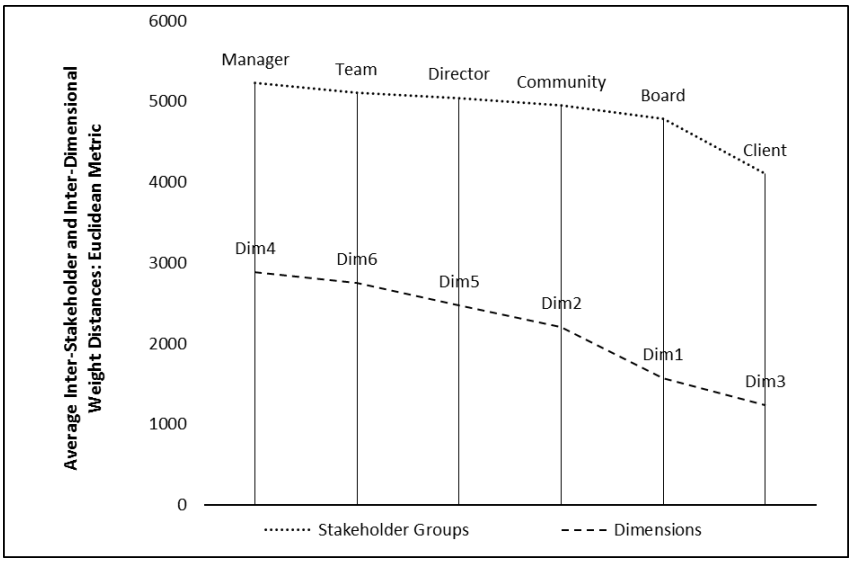

We also observed that the assessment lens significantly influences dimensional weighting of, particularly, dimensions 1 ('*Client (project sponsor) Satisfaction'*), 2 ('*Execution and efficiency'*) and 3 (*'Quality (conformance to standards)*'). All stakeholder groups appeared to attach much more weight to dimension 1 '*Client (project sponsor) satisfaction*' when assessing project success as against when judging project failure. We also observed how unequally steering group or board members apportion weight to '*Client (project sponsor) satisfaction*'. In contrast, *nearly all* stakeholder groups attached more weight to dimension 2 ('*Execution and efficiency'*) and dimension 3 (*'Quality (conformance to standards)*') when assessing project failure than when assessing project success. Notably, in comparison to how dimension 3 (*'Quality (conformance to standards)*') was weighted when assessing project failure, stakeholders all but overlooked it when assessing project successes. We did not observe clear differences in the weighting of dimensions 4 ('*Team Development'*), 5 ('*Organizational Strategy'*) or 6 (*'Societal/community impact'*) across the project failure-project success boundary but, as we summarise in Table 4 (below), GLM results based on the bootstrapping samples show that, similar to dimensions 2 ('*Execution and efficiency*') and 3 (*'Quality (conformance to standards)*'), stakeholders ascribed significantly more weight to dimensions 4 ('*Team Development'*) and 6 (*'Societal/community impact'*) when assessing project failure than when assessing project success.

Table 4: Comparison of dimensional mean weights success vs failure

Dimension	Details	Least Squares Means	Type III Test of Mean

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					Difference	
		Success	Failure	Mean Difference	F Value (*DF* = 1)	Pr > F
Dim_1	*'Client (project sponsor) satisfaction'*	8034.0	1006.3	7027.7	10765.0	<.0001
Dim_2	*'Execution and efficiency'*	2232.6	4247.1	-2014.4	588.8	<.0001
Dim_3	*'Quality (conformance to standards)'*	1472.4	3726.7	-2254.3	684.5	<.0001
Dim_4	*'Team Development'*	1994.0	2266.3	-272.3	6.9	0.0086
Dim_5	*'Organisational Strategy'*	1660.5	1825.6	-165.1	3.0	0.0857
Dim_6	*'Societal/community impact'*	997.8	1696.8	-699.0	60.2	<.0001

4.3 Level of support tests

The GLM results supports the notion that internal stakeholders place significantly more weight on '*Execution and efficiency*' than external stakeholders do (F = 74.19, DF = 1, *p-value* <.0001). Members of the community ascribe more weight to *'Societal/community impact' than* other stakeholders do (F = 36.30, DF = 1, *p-value* <.0001.). The results did not support the notions that (i) internal stakeholders will place more weight on *'Team development'* than external stakeholders do, (ii) internal stakeholders will place more weight on *'Organizational strategy'* than external stakeholders do, or that (iii) *Client (project sponsor)* will place more weight on their own satisfaction than other stakeholders will. We also found that internal stakeholders attach *less* weight to '*Team development'* (F = 5.28, DF = 1, *p-value* <.0217) and to *'Organisational strategy'* than external stakeholders do (F = 20.74, DF =1, *p-value* <.0001); and clients attach *less* weight to '*Client (project sponsor) Satisfaction*' than other stakeholders do (F = 132.9, DF = 1, *p-value* <.0001).

5.0 DISCUSSIONS

In undertaking a dimensional analysis of stakeholder assessment of project outcomes, we identified six dimensions of project outcomes. Our analysis suggested that three of these six dimensions – that is, '*Team Development'*, '*Organisational Strategy*' and '*Societal/community Impact*' – were neither strongly endorsed nor congruently applied by project stakeholders. Our findings on the relative ranking of the outcome dimensions (as

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articulated in sections 4.2 and 4.3) is instructive in that it delineates the relative foci of stakeholders in projects. Stakeholders consider '*Client (project sponsor) Satisfaction'* at least twice as important as '*Execution and efficiency'* and '*Quality (conformance to standards)'*.

Notably, three dimensions ('*Team Development'*, '*Organisational Strategy*' and '*Societal/community Impact*') accounted for 86% of the variance in stakeholder assessments of project outcomes. We can then assert that these three dimensions represent key dimensions for assessing project outcomes. By contrast, '*Team Development'*, '*Organisational Strategy'* and '*Societal/community Impact'* appear to be minor considerations. Hence, it seems stakeholders are more concerned with dimensions that may have a more direct impact (and, by implication, a shorter impact) on project outcomes. This finding is in line with earlier works of Shenhar et al. (2001) which suggest that incorporating wider (perhaps a dimension such as '*Organisational Strategy*') and longer-term perspectives of projects remains a struggle in project management practice. We also highlight that, consistent with earlier findings by Tukel and Rom (2001), our analysis suggests that all internal stakeholders place a great deal of weight on '*Client (project sponsor) Satisfaction'*, a point supported by Kistruck et al. (2015).

The results of the dimensional analysis of stakeholder assessment of project outcomes also suggest that project stakeholders assessed project outcomes asymmetrically. Thus, stakeholders placed maximum weight on '*Client (project sponsor) Satisfaction'* when assessing success, whereas when assessing failure they placed maximal weight mostly on two task-oriented activities; that is '*Execution and efficiency'* and '*Quality (conformance to standards)'*. In effect, it is safe to posit that when assessing project "success", project stakeholders appear more focused on *effectiveness* (particularly exploring whether the project sponsor is satisfied that the intended goals of the project were actually delivered). On the other hand, when assessing project "failure", project stakeholders appear more focused on *efficiency* (particularly focusing on optimised project execution through the conformance to quality standards.

These findings are in line with extant literature. Firstly, we recall Samset's (2010) emphasis on the balancing of efficiency against effectiveness. In the same vein, Beringer et al. (2013) and Unger-Aviram et al. (2013) had also suggested that in project environments, stakeholders appear more focused on task-oriented activities as against activities that emphasise the enhancement of inter-personal relationships. It is safe to assume task-

oriented activities in this context as tasks that are focused on project *efficiency*. The emphasis on task-oriented activities occurs because of misconceptions that such activities, which are usually precisely defined, have a more direct and positive impact on desired project outcomes than activities such as '*Team Development'* do, which emphasise more personal (and hence softer) relationships. Inter-stakeholder distances on the weighting of certain dimensions – particularly on '*Client (project sponsor) Satisfaction*', '*Execution and efficiency*' and '*Quality (conformance to standards)*' – were found to be less than the inter-dimensional distances on weightings of stakeholders. This suggests that exact specification of a framework of project success and failure dimensions could spur stakeholder congruity. This view is shared for example by Milis and Mercken (2002) who point out that the creation of a comprehensive definition of project outcomes at the commencement of any project will ensure that goal congruency – in effect, a joint stakeholder vision – is created.

In terms of our finding that '*Organizational Strategy'* was not strongly endorsed or congruently applied by project stakeholders in their assessment of project outcomes, the literature (Cohen and Ebbesen 1979) had found that the orientation of goals/outcomes of individuals tended to not only shape, but also guide the way information was processed. Similarly, stakeholders within specific strategic groups will be expected to emphasise congruent (similar) views of the strategy that an organisation should pursue (see Peng et al. 2004; Desarbo and Grewal 2008). They may also assess project outcomes in a similar manner mainly because they have access to similar information (Ojiako et al. 2014). In terms of '*Societal/community impact*', irrespective of the recent work of Lundin (2016) which advances the notion of the 'project society', there are studies, such as that of Hillman and Keim (2001) which suggest that when organisations pursue social/community-focused agendas that are not perceived by stakeholders as directly related to their relationship with the organisation, competitive advantage is unlikely to be created (see Hillman and Keim 2001). Extant literature (Engwall 2003; Tharp 2012) also suggests that, traditionally, projects have been conceptualised as if they are not related to community interests.

Our study also identified findings related to explicit conceptual differences between project success and project failure. The respondents were found to be much more explicit when making a determination that a project was a success than when making such a determination in relation to failure. This finding is in line with attribution theory (see Heider 1958; Frieze and Weiner 1971; Weiner and Kukla 1970; Weiner et al. 1987). More

specifically, attribution theory suggests (i) that it is generally easier to understand the causes of success than the causes of failure (Frieze and Weiner 1971) and (ii) that individuals have higher expectancies of success than of failure (Parducci 1968; Harvey et al. 1974; Zuckerman 1979).

6.0 CONCLUSIONS

This paper, which is the outcome of a three-year study, reports on the conduct of a dimensional analysis of stakeholder assessments of project outcomes. Data for the study were collected between 2013 and 2015 and involved a survey of 1631 project stakeholders categorised into 14 stakeholder groups. For global relevance, the stakeholders were drawn from projects being implemented in nine different countries. Data analysis was undertaken using 3-way Multidimensional Scaling. Taking into consideration the research question, we identified success and failure dimensions that represented a multidimensional and asymmetrical typology for project outcomes. We also found the existence of explicit conceptual differences between how project success and project failure was assessed. We argue that a deep understanding of how these assessment dimensions arise provides substantial information that potentially mitigates against the risk that ambiguities may arise between the project delivery team and stakeholders, or between stakeholders, on their expectations of the project. In effect, an understanding of these dimensions enhances much desired trade-offs among various stakeholders.

This study makes both theoretical and practical contributions. In terms of theoretical contribution, the findings from our study help advance an understanding of the differences that exist in terms of how individual stakeholders construe success and failure in projects. Such understanding is particularly important because it can be inferred from Clegg et al. (2002) that the achievement of a collective perspective of outcomes is particularly challenging in project environments where there is a very low degree of unity of purpose or coherence. We observe that Stinchcombe and Heimer (1985) suggest that, despite projects' emphasis on strict contractual obligations, because of the multiplicity of interests among stakeholders, congruence remains a key challenge in projects. We also posit that since our study was contextualised within projects known for their 'temporality' and evolving nature (Bakker et al. 2016; Ligthart et al. 2016), it may be deemed a starting point for further studies into how success and failure may be construed within other emergent organisational

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forms whether they be virtual, boundaryless, modular self-managing, or cellular (Palmer et al. 2007; Annosi and Brunetta 2017; Smith et al. 2017). Projects primarily represent administrative routes along which organisations tend to undertake a range of cross-functional activities without the need to engage permanent resources. In fact, Sydow et al. (2004) construe projects as a convenient way for organisations to "circumvent traditional barriers to organizational change" (p. 1475). Stjerne and Svejenova (2016) suggest that, under such circumstances, tensions are likely to emerge between the project organisation and the sponsoring organisation. Thus, if we are to accept the general thesis that project stakeholders appear more focused on *effectiveness* when assessing project success and more focused on *efficiency* when assessing project failure, then there are interesting implications for reporting and governance. This is because, when undertaking project implementation reviews (or when engaged in project reporting), it is more likely that when 'searching' for success which implies some form of *positiveness*, then individual stakeholders are more likely to emphasise project benefits. Arguably, this approach is important for '*Client (project sponsor) Satisfaction'*. Conversely, it is more likely that when 'searching' for failure, which implies some form of *negativeness*, an individual stakeholder is more likely to emphasise '*Execution and efficiency*'.

Future studies may therefore progress in two directions. First, is to seek to examine not only whether the concepts of project success and project failure are polarized or not, but also examine how different stakeholders influence the attainment of organisational, operational or project goals, taking into consideration the inherent tensions between these two organisational forms because the likelihood of stakeholder congruency of success and failure at project and organisational level is less likely to occur. Insights into these dimensionalities provide a number of practical guidelines for managers. For example, these will facilitate a clearer appreciation of individual interests of various stakeholders, thus enhancing shared goals and collaboration. Such an understanding may be best enhanced through the development of stakeholder assessment frameworks that are augmented with dimensional typologies, allowing for a more effective and proactive balancing and reconciliation of different stakeholder expectations. Second, is to seek in light of the work of Tantalo and Priem (2016) to examine how different stakeholders may *simultaneously* influence the attainment of organisational, operational or project goals. Doing so requires shared interests to be created by managers. It also requires noting that stakeholders are

likely to maintain incompatible interests (Bundy et al. 2018), an emphasis on the complementary nature of *such* interest.

As expected, the study does have a number of limitations. First, we did not take into account the effect of variations in project lifecycle on the dimensionality of stakeholder assessment even though studies by Chipulu et al. (2014) and Ojiako et al. (2014, 2015) allude to the fact that project outcome assessment varies and evolves over the project lifecycle. Secondly, we did not consider possible individual demographic factors such as age (Reno 1979), gender (Zuckerman 1979; Wong 1982), role (Bar-Tal and Frieze 1976; Standing et al. 2006) and national culture (Betancourt and Weiner 1982) on these assessments. Neither did we test for respondent bias. There is substantial attribution-related literature which alludes to success and failure assessments being attributed to such demographic factors. These limitations however serve as the basis for future studies.

References

Aaltonen, K., Jaakko, K. and Tuomas, O. 2008. "Stakeholder salience in global projects." *International Journal of Project Management* 26 (5): 509-516.

Aaltonen, K. and Sivonen, R. 2009. "Response strategies to stakeholder pressures in global projects." *International Journal of Project Management* 27(2): 131-141.

Anand, G., Ward, P. and Tatikonda, M. 2010. "Role of explicit and tacit knowledge in Six Sigma projects: An empirical examination of differential project success." *Journal of Operations Management* 28(4): 303-315.

Annosi, M., and Brunetta, F. 2017. New Organizational Forms. In New Organizational Forms, Controls, and Institutions (pp. 45-70). Palgrave Macmillan, Cham.

Atkinson, R. 1999. "Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria." *International Journal of Project Management* 17 (6): 337-342.

Baccarini, D. 1999. "The logical framework method for defining project success." *Project Management Journal* 30(4): 25–32.

Baker, B., Murphy, D. and Fisher, D. 1974. *Factors affecting project success*. In D. I. Cleland & W. R. King (Eds.), Project management handbook (pp. 902–919). New York: Van Nostrand Reinhold.

This is an Accepted Manuscript of an article published by Taylor & Francis in Production Planning and Control on 11 June 2019, available online: https://www.tandfonline.com/doi/full/10.1080/09537287.2019.1567859.

Bakker, R., DeFillippi, R., Schwab, A. and Sydow, J. 2016. “Temporary organizing: Promises, processes, problems.” *Organization Studies* 37(12): 1703-1719.

Barnes, M. 1988. “Construction project management.” *International Journal of Project Management* 6 (2): 69 – 79.

Bar-Tal, D. and Frieze, I. 1976. “Attributions of success and failure for actors and observers.” *Journal of Research in Personality* 10(3): 256-265.

Badewi A. 2016. “The impact of project management (PM) and benefits management (BM) practices on project success: towards developing a project benefits governance framework.” *International Journal of Project Management* 34: 761-778.

Beringer, C., Jonas, D. and Kock, A. 2013. “Behaviour of internal stakeholders in project portfolio management and its impact on success.” *International Journal of Project Management* 31(6): 830-846.

Betancourt, H. and Weiner, B. 1982. “Attributions for achievement-related events, expectancy, and sentiments: A study of success and failure in Chile and the United States.” *Journal of Cross-Cultural Psychology* 13(3), 362-374.

Bharadwaj, A., Keil, M. and Mahring, M. 2009. “Effects of information technology failures on the market value of firms.” *Journal of Strategic Information Systems* 18(2): 66-79.

Borg, I. and Groenen, P. 2005. *Modern multidimensional scaling: Theory and applications*. Springer Science & Business Media.

Bridoux, F. and Stoelhorst, J. 2014. “Microfoundations for stakeholder theory: Managing stakeholders with heterogeneous motives.” *Strategic Management Journal* 35 (1): 107-125.

Brislin, R. 1970. “Back-translation for cross-cultural research.” *Journal of Cross-Cultural Psychology* 1(3): 185-216.

Brooks, J., Carroll, J. and Beard, J. 2011. “Duelling stakeholders and dual-hatted systems engineers: Engineering challenges, capabilities, and skills in government infrastructure technology projects.” *IEEE Transactions on Engineering Management* 58 (3): 589-601.

Bryde, D. and Robinson, L. 2005. “Client versus contractor perspectives on project success criteria.” *International Journal of Project Management* 23(8): pp.622-629.

Bundy, J., Vogel, R. and Zachary, M. 2018. “Organization – stakeholder fit: A dynamic theory of cooperation, compromise, and conflict between an organization and its stakeholders.” *Strategic Management Journal* 39(2): 476-501.

Busing, F., Groenen, P. and Heiser, W. 2005. “Avoiding degeneracy in multidimensional unfolding by penalizing on the coefficient of variation.” *Psycometrika* 70 (1): 71-98.

Cano, J. and Lidon, I., 2011. “Guided reflection on project definition.” *International Journal of Project Management* 29(5): 525-536.

Carroll, J. and Green, P. 1997. “Psychometric methods in marketing research: Part II, multidimensional scaling.” *Journal of Marketing Research* 34 (2): 193-204.

Chandrasekaran, A., Linderman, K. and Schroeder, R. 2015. “The role of project and organizational context in managing high-tech R&D projects.” *Production and Operations Management* 24(4): 560-586.

Chih, Y. and Zwikael, O. 2015. “Project benefit management: a conceptual framework of target benefit formulation.” *International Journal of Project Management,* 13, 2, 352-362.

Chipulu, M., Neoh, J. G., Ojiako, U. and Williams, T. 2013. “A Multidimensional Analysis of Project Manager Competences.” *IEEE Transactions on Engineering Management* 60 (7): 506-517.

Chipulu, M., Ojiako, U., Gardiner, P., Williams, T., Mota, C., Maguire, S., Shou, Y., Stamati, T. and Marshall, A. 2014. “Exploring the impact of cultural values on project performance: The effects of cultural values, age and gender on the perceived importance of project success/failure factors.” *International Journal of Operations & Production Management* 34 (3): 364-389.

Clegg, S., Pitsis, T., Rura-Polley, T. and Marosszeky, M. 2002. “Governmentality matters: designing an alliance culture of inter-organizational collaboration for managing projects.” *Organization Studies* 23 (3): 317-337.

Cohen, C. and Ebbesen, E. 1979. “Observational goals and schema activation: A theoretical framework for behaviour perception.” *Journal of Experimental Social Psychology* 15(4): 305-329.

Collins, A. and Baccarini, D. 2004. “Project success—a survey.” *Journal of Construction Research* 5 (2): 211-231.

Costa, R. and Menichini, T. 2013. “A multidimensional approach for CSR assessment: the importance of the stakeholder perception.” *Expert Systems with Applications* 40 (1): 150-161.

Cule, P., Schmidt, R., Lyytinen, K. and Keil, M. 2000. “Strategies for heading off is project failure.” *Information Systems Management* 17(2): 65-73.

Davis, K. 2014. “Different stakeholder groups and their perceptions of project success.” *International Journal of Project Management* 32 (2): 189-201.

Desarbo, W. and Grewal, R. 2008. “Hybrid strategic groups.” *Strategic Management Journal* 29 (3): 293-317.

de Vries, J. 2009. “Assessing inventory projects from a stakeholder perspective: Results of an empirical study.” *International Journal of Production Economics* 118(1): 136-145.

Dvir, D. and Shenhar, A. 1992. “Measuring the success of technology based strategic business units.” *Engineering Management Journal* 4 (4): 33-38.

Dvir, D., Lipovetsky, S., Shenhar, A. and Tishler, A. 1998. “In search of project classification: a non-universal approach to project success factors.” *Research Policy* 27(9):915-935.

Dwivedi, Y., Wastell, D., Laumer, S., Henriksen, H., Myers, M., Bunker, D., Elbanna, A., Ravishankar, M. and Srivastava, S. 2015. “Research on information systems failures and successes: Status update and future directions.” *Information Systems Frontiers* 17(1):143-157.

Dwivedi, Y., Ravichandran, K., Williams, M., Miller, S., Lal, B., Antony, G. and Kartik, M. 2013. “IS/IT project failures: a review of the extant literature for deriving a taxonomy of failure factors.” *International Working Conference on Transfer and Diffusion of IT*. Pub. Springer, Berlin, Heidelberg, 73-88.

Engwall, M. 2003. “No project is an island: linking projects to history and context.” *Research Policy* 32(5):789-808.

Fincham, R. 2002. “Narratives of Success and Failure in Systems Development.” *British Journal of Management* 13: 1-14.

Fineman, S. and Clarke, K. 1996. “Green stakeholders: Industry interpretations and response.” *Journal of Management Studies* 33(6): 715-730.

Freeman, R. 1984. *Strategic Management: A stakeholder approach*, Boston: Pitman.

Friedman, A. and Miles, S. 2002. Developing stakeholder theory. *Journal of Management Studies* 39(1):1-21.

Frieze, I. and Weiner, B. 1971. “Cue utilization and attributional judgments for success and failure.” *Journal of Personality* 39(4): 591-605.

Gattiker, T. and Carter, C. 2010. “Understanding project champions’ ability to gain intra-organizational commitment for environmental projects.” *Journal of Operations Management* 28(1): 72-85.

Geraldi, J., Maylor, H. and Williams, T. 2011. “Now, let's make it really complex (complicated) A systematic review of the complexities of projects.” *International Journal of Operations & Production Management* 31 (9): 966-990.

Godenhjelm, S. and Johanson, J. 2016. “The effect of stakeholder inclusion on public sector project innovation.” *International Review of Administrative Sciences*, p.0020852315620291.

Guerci, M. and Shani, A. 2014. “Stakeholder involvement in human resource management practices: Evidence from Italy.” *Management Revue* 25 (2): 80-102.

Hall, J., Bachor, V. and Matos, S. 2014. “The impact of stakeholder heterogeneity on risk perceptions in technological innovation.” *Technovation* 34(8):410-419.

Hall, M., Millo, Y. and Barman, E. 2015. ‘Who and what really counts? Stakeholder prioritization and accounting for social value.’ *Journal of Management Studies* 52(7):907-934.

Harrington, T., Singh Srai, J., Kumar, M. and Wohlrab, J. 2016. “Identifying design criteria for urban system ‘last-mile’ solutions – a multi-stakeholder perspective.” *Production Planning & Control* 27(6): 456-476.

Harvey, J., Arkin, R., Gleason, J. and Johnston, S. 1974. “Effects of expected and observed outcome of an action on the differential causal attributions of actor and observer.” *Journal of Personality* 42: 62-77.

Hayes, R. 2002. “Challenges posed to operations management by the new economy.” *Production and Operations Management* 11 (1): 21-32.

Heider, F. 1958. The psychology of interpersonal relations. Pub. Wiley, New York.

Hillman, A. and Keim, G. 2001. “Shareholder value, stakeholder management, and social issues: what's the bottom line?.” *Strategic Management Journal* 22 (2): 125-139.

Hoegl, M. and Gemuenden, H. 2001. “Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence.” *Organization Science* 12(4):435-449.

Hughes, D., Dwivedi, Y., Rana, N. and Simintiras, A. 2016. “Information systems project failure–analysis of causal links using interpretive structural modelling.” *Production Planning & Control* 27(16):1313-1333.

Icmeli Tukel, O. and Rom, W. 2001. “An empirical investigation of project evaluation criteria.” *International Journal of Operations & Production Management* 21(3):400-416.

Ika, L. 2009. “Project success as a topic in project management journals.” *Project Management Journal* 40(4):6-19.

Jung, J. and Wang, Y. 2006. “Relationship between total quality management (TQM) and continuous improvement of international project management (CIIPM).” *Technovation* 26(5):716-722.

Kannan, D. 2017. “Role of multiple stakeholders and the critical success factor theory for the sustainable supplier selection process.” *International Journal of Production Economics* 195:301-418.

Khoja, L., Chipulu, M. and Jayasekera, R. 2016. “Analysing corporate insolvency in the Gulf Cooperation Council using logistic regression and multidimensional scaling.” *Review of Quantitative Finance and Accounting* 46(3): 483-518.

Kistruck, G., Morris, S., Webb, J. and Stevens, C. 2015. “The importance of client heterogeneity in predicting make-or-buy decisions.” *Journal of Operations Management* 33: 97-110.

Kloppenborg, T.J., Tesch, D. and Manolis, C. 2014. “Project success and executive sponsor behaviours: Empirical life cycle stage investigations.” *Project Management Journal* 45(1):9-20.

Ligthart, R., Oerlemans, L. and Noorderhaven, N. 2016. “In the shadows of time: A case study of flexibility behaviors in an interorganizational project.” *Organization Studies* 37(12): 1721-1743.

Lim, C. and Mohamed, M. 1999. “Criteria of project success: An explanatory re-examination.” *International Journal of Project Management* 17, 243–248.

Lindsjorn, Y., Sjoberg, D., Dingsoyr, T., Bergersen, G. and Dyba, T. 2016. “Teamwork quality and project success in software development: A survey of agile development teams.” *Journal of Systems and Software* 122: 274-286.

Littau, P., Jujagiri, N. and Adlbrecht, G. 2010. “25 years of stakeholder theory in project management literature (1984–2009).” *Project Management Journal* 41(4): 17-29.

Liu, A. and Walker, A. 1998. “Evaluation of project outcomes.” *Construction Management and Economics* 16(2): 209-219.

Longman, A. and Mullins, J. 2004. “Project management: key tool for implementing strategy.” *Journal of Business Strategy* 25(5): 54-60.

Lord, M. 1993. “Implementing strategy through project management.” *Long Range Planning* 26(1):76-85.

Lovejoy, W. 1998. “Integrated operations: a proposal for operations management teaching and research”, *Production and Operations Management* 7 (2): 106-124.

Lundin, R. 2016. “Project society: paths and challenges.” *Project Management Journal* 47(4): 7–15.

Lundin, R. and Söderholm A. 1995. “A theory of temporary organisation.” *Scandinavian Journal of Management* 11: 437-455

Lyytinen, K. and Hirschheim, R. 1988. *Information systems failures—a survey and classification of the empirical literature*. In Oxford surveys in information technology (pp. 257-309). Oxford University Press, Inc.

Lyytinen, K. and Robey, D. 1999. “Learning failure in information systems development.” *Information Systems Journal* 9(2):85-101.

Mahring, M. and Keil, M. 2008. “Information technology project escalation: A process model.” *Decision Sciences* 39(2):239-272.

Marrone, J., Tesluk, P. and Carson, J. 2007. “A multilevel investigation of antecedents and consequences of team member boundary-spanning behaviour.” *Academy of Management Journal* 50(6):1423-1439.

Maylor, H., Vidgen, R. and Carver, S. 2008. “Managerial complexity in project-based operations: A grounded model and its implications for practice.” *Project Management Journal* 39 (S1): S15-S26.

McGivern, G., Dopson, S., Ferlie, E., Fischer, M., Fitzgerald, L., Ledger, J. and Bennett, C. 2017. “The silent politics of temporal work: a case study of a management consultancy project to redesign public health care.” *Organization Studies*, p.0170840617708004.

McLeod, L. and MacDonell, S. 2011. “Factors that affect software systems development project outcomes: A survey of research.” *ACM Computing Surveys (CSUR)* 43(4): p.24.

Milis, K. and Mercken, R. 2002. “Success factors regarding the implementation of ICT investment projects.” International Journal of Production Economics, 80(1), pp.105-117.

Mir, F. and Pinnington, A. 2014. “Exploring the value of project management: Linking project management performance and project success.” *International Journal of Project Management* 32 (2): 202 - 217.

Montealegre, R. and Keil, M. 2000. “De-escalating information technology projects: lessons from the Denver international airport.” *MIS Quarterly* 24 (3): 417– 447

Muller, R. and Turner, R. 2007. “The influence of project managers on project success criteria and project success by type of project.” *European Management Journal* 25(4):298-309.

Muller, R., Geraldi, J. and Turner, J. 2012. “Relationships between Leadership and Success in different types of project complexities.”, *IEEE Transactions in Engineering Management* 59(1): 77-90.

Myers, M. 1994. “A disaster for everyone to see: an interpretive analysis of a failed IS project.” *Accounting Management and Information Technologies* 4(4): 185–201.

Nixon, P., Harrington, M. and Parker, D. 2011. “Leadership performance is significant to project success or failure: A critical analysis.” *International Journal of Productivity and Performance Management* 61 (2), 204 – 216.

Ojanen, V., Piippo, P. and Tuominen, M. 2002. “Applying quality award criteria in R&D project assessment.” *International Journal of Production Economics* 80(1):119-128.

Ojiako, U., Chipulu, M., Gardiner, P., Williams, T., Mota, C., Maguire, S., Shou, Y. and Stamati, T. 2014. “Effect of project role, age and gender differences on the formation and revision of project decision judgements.” *International Journal of Project Management* 32(4): 556-567.

Ojiako, U., Chipulu, M., Marshall, A., Ashleigh, M., Maguire, S., Williams, T. and Obokoh, L. 2015. “Heterogeneity and perception congruence of project outcomes. *Production Planning & Control* 26(11): 858-873.

Ollus, M., Jansson, K., Karvonen, I., Uoti, M. and Riikonen, H. 2011. “Supporting collaborative project management.” *Production Planning & Control* 22 (5-6): 538-553.

Palmer, I., Benveniste, J. and Dunford, R. 2007. “New organizational forms: Towards a generative dialogue.” *Organization Studies* 28(12):1829-1847.

Pan, G. and Pan, S., 2011. “Transition to IS project de-escalation: An exploration into management executives’ influence behaviours.” *IEEE Transactions on Engineering Management* 58(1): 109-123.

Parducci, A. 1968. “The relativism of absolute judgments.” *Scientific American* 219: 84- 90.

Parvan, K., Rahmandad, H. and Haghani, A. 2015. “Inter-phase feedbacks in construction projects.” *Journal of Operations Management* 39: 48-62.

Pellegrinelli, S. and Bowman, C. 1994. “Implementing strategy through projects.” *Long Range Planning* 27(4): 125-132.

Peng, M., Tan, J. and Tong, T., 2004. “Ownership types and strategic groups in an emerging economy.” *Journal of Management Studies* 41(7): 1105-1129.

Phillips, R., Freeman, R. and Wicks, A. 2003. “What stakeholder theory is not.” *Business Ethics Quarterly* 13(4): 479-502.

Pinto, J. and Mantel, J. 1990. “The causes of project failure.” *IEEE Transactions on Engineering Management* 37(4): 269-276.

Pinto, J. and Slevin, D. 1987. “Critical Factors in Successful Project Implementation.” *IEEE Transactions on Engineering Management* 34(1): 22-27.

Pinto, J. and Slevin, D. 1988. “Project success: definitions and measurement techniques”. *Project Management Journal* 19(1): 67-72.

Rolstadas, A. 1994. “Editorial Project management.” *Production Planning & Control* 5 (1): p. 1.

Reno, R. 1979. “Attribution for success and failure as a function of perceived age.” *Journal of Gerontology* 34(5): 709-715.

Rosenzweig, E. and Roth, A. 2004. “Towards a theory of competitive progression: evidence from high-tech manufacturing.” *Production and Operations Management* 13(4):354-368.

Roth, A. and Miller, J. 1992. “Success factors in manufacturing.” *Business Horizons* 35(4): 73-81.

Rudolph, T., Wagner, T. and Fawcett, S. 2008. “Project management in retailing: integrating the behavioural dimension.” *International Review of Retail, Distribution and Consumer Research* 18(3): 325-341.

Samset, K. 2010. *Early project appraisal*. Basingstoke, England: Palgrave Macmillan.

Savolainen, P., Ahonen, J. and Richardson, I. 2012. "Software development project success and failure from the supplier's perspective: A systematic literature review." *International Journal of Project Management* 30(4): 458-469.

Scott-Young, C. and Samson, D., 2008. "Project success and project team management: Evidence from capital projects in the process industries." *Journal of Operations Management* 26 (6): 749-766.

Scott-Young, C. and Samson, D. 2009. "Team management for fast projects: an empirical study of process industries." *International Journal of Operations & Production Management* 29 (6): 612-635.

Shenhar, A., Dvir, D., Levy, O. and Maltz, A. 2001. "Project success: a multidimensional strategic concept." *Long Range Planning* 34(6): 699-725.

Shenhar, A., Tishler, A., Dvir, D., Lipovetsky, S. and Lechler, T. 2002. "Refining the search for project success factors: a multivariate, typological approach." *R&D Management* 32(2): 111-126.

Shenhar, A. 2004. "Strategic Project Leadership: Toward a strategic approach to project management." *R&D Management* 34(5): 569-578.

Smith, A, Sutherland, F. and Gilbert, D., 2017. Changing Forms of Organizing. In Reinventing Innovation. Pub. Springer International Publishing, 19-33.

Sousa, R. and Voss, C., 2002. "Quality management re-visited: a reflective review and agenda for future research." *Journal of Operations Management* 20(1): 91-109.

Srivannaboon, S. and Milosevic, D. 2006. "A two-way influence between business strategy and project management." *International Journal of Project Management* 24(6): 493-505.

Stal-Le Cardinal, J. and Marle, F., 2006. "Project: The just necessary structure to reach your goals." *International Journal of Project Management* 24(3): 226-233.

Standing, C., Guilfoyle, A., Lin, C. and Love, P. 2006. "The attribution of success and failure in IT projects." *Industrial Management & Data Systems* 106(8): 1148-1165.

Stinchcombe, A. and Heimer, C., 1985. Organization theory and project management: Administering uncertainty in Norwegian offshore oil. Oxford University Press, USA.

Stjerne, I. and Svejenova, S. 2016. “Connecting temporary and permanent organizing: Tensions and boundary work in sequential film projects.” *Organization Studies* 37(12): 1771-1792.

Su, H., Linderman, K., Schroeder, R. and Van de Ven, A. 2014. “A comparative case study of sustaining quality as a competitive advantage.” *Journal of Operations Management* 32(7): 429-445.

Svejvig, P. and Andersen, P., 2015. “Rethinking project management: A structured literature review with a critical look at the brave new world.” *International Journal of Project Management* 33(2): 278-290.

Sydow J., Lindkvist L. and DeFillippi R. 2004. “Project-based organizations, embeddedness and repositories of knowledge.” *Organization Studies* 25: 1475–1489.

Tantalo, C. and Priem, R. 2016. “Value creation through stakeholder synergy.” *Strategic Management Journal*, 37(2): 314-329.

Tharp, J. 2012. *Project management and global sustainability*. Paper presented at PMI Global Congress 2012—EMEA, Marsailles, France. Newtown Square, PA: Project Management Institute.

Turner, R., and Zolin, R. 2012. “Forecasting success on large projects: developing reliable scales to predict multiple perspectives by multiple stakeholders over multiple time frames.” *Project Management Journal* 43(5): 87-99.

Unger-Aviram, E., Zwikael, O. and Restubog, S. 2013. “Revisiting goals, feedback, recognition, and performance success: the case of project teams.” *Group & Organization Management* 38 (5): 570-600.

Van der Panne, G., Van Beers, C. and Kleinknecht, A. 2003. “Success and failure of innovation: a literature review.” *International Journal of Innovation Management* 7(03): 309-338.

van Marrewijk, A., Ybema, S., Smits, K., Clegg, S. and Pitsis, T., 2016. “Clash of the Titans: Temporal organizing and collaborative dynamics in the Panama Canal Megaproject.” *Organization Studies* 37(12):1745-1769

Walker, D. and Lloyd-Walker, B. 2014. “The ambience of a project alliance in Australia. *Engineering Project Organization Journal* 4(1):2-16.

Wateridge, J. 1998. “How can IS/IT projects be measured for success?.” *International Journal of Project Management* 16: 59–63.

Weiner, B. and Kukla, A. 1970. “An attributional analysis of achievement motivation.” *Journal of personality and Social Psychology* 15(1): 1-20.

Weiner, B., Frieze, I., Ku Weiner, B. and Kukla, A. 1970. “An attributional analysis of achievement motivation.” *Journal of personality and Social Psychology*, 15(1), pp.1-20.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S. and Rosenbaum, R. 1987. *Perceiving the causes of success and failure*. In E. Jones, D. Kanouse, H. Kelley, R. Nisbett, S. Valins, and B. Weiner (Eds.), Attribution: Perceiving the causes of behaviour (pp. 95-120). Hillsdale, NJ: Lawrence Erlbaum Associates.

Williams, T. 2016. “Identifying success factors in construction projects: A case study.” *Project Management Journal* 47(1): pp.97-112.

Wong, P. 1982. “Sex differences in performance attribution and contingency judgment.” *Sex Roles* 8(4): 381-388.

Wu, Y., Loch, C. and Ahmad, G. 2011. “Status and relationships in social dilemmas of teams.” *Journal of Operations Management* 29(7): 650-662.

Yeo, K. 2002. Critical failure factors in information system projects. *International Journal of Project Management* 20(3): 241-246.

Zuckerman, M. 1979. “Attribution of success and failure revisited, or: The motivational bias is alive and well in attribution theory.” *Journal of Personality* 47(2): 245-287.

Appendix

Appendix A: Data sources from 3-way MDS

Source Code	Success-Failure Category	Stakeholder Group	Frequency
11	Success	Project team member	342
12	Success	Project manager	242
13	Success	Project consultant	111
14	Success	Project director	103
15	Success	End user, client, sponsor or customer	65
16	Success	Project steering group or Board of Directors	46
17	Success	Member of Community where project was conducted	31
21	Failure	Project team member	246
22	Failure	Project manager	116

23	Failure	Project consultant	103
24	Failure	Project director	56
25	Failure	End user, client, sponsor or customer	60
26	Failure	Project steering group or Board of Directors	27
27	Failure	Member of Community where project was conducted	37
Total			1585