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Project governance and its role in enabling organizational strategy implementation: A systematic literature review

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ABSTRACT

Project governance is widely recognized to be among the most critical factors for successful project delivery and benefits realization. However, the literature on project governance is fragmented and, despite past efforts by researchers in the field, there is yet a lack of consensus on what project governance is and the fundamental elements it constitutes. Furthermore, although project governance occupies the prime position to ensure that projects are aligned with organizational strategic objectives, the guidelines for how project governance can enable organizational strategy implementation through projects is a crucial yet under-researched area in the literature. Accordingly, building on the insights from past reviews and an initial scoping study, a systematic literature review was conducted on project governance examining and comparing 271 publications from both academic and professional literatures. The findings of this study build upon the efforts of its predecessors to shed light on the discourse on project governance pertaining to its definition, theoretical underpinnings, forms, and role in enabling organizational strategy implementation. Furthermore, a typology of projects is proposed to help link project governance guidelines to specific project contexts. Finally, future research directions for progressing the theoretical and practical understanding of project governance are identified.

1. Introduction

Project management has traditionally been viewed by top management as an execution-oriented discipline and excluded from the strategy formulation and implementation processes altogether (Morris & Jamieson, 2005). Recently, there has been a growing recognition that projects should be viewed as both vehicles for strategy implementation (Bredillet, 2008; Serra & Kunc, 2015; Young, Young, Jordan, & O'Connor, 2012), as well as sources of emergent strategic insights (Löwstedt, Räisänen, & Leiringer, 2018; Morris & Jamieson, 2005; Young et al., 2012). However, further research is needed to clarify how organizational strategy is actually translated down to the project level and understand the factors that support two-way strategy communication and implementation in projects (Anderson & Merna, 2003; Milosevic & Srivannaboon, 2006; Morris & Jamieson, 2005). One such factor is project governance.

Project governance can be broadly defined as the management of project management (Too & Weaver, 2014), i.e. it is a system that exists at a higher level than, and provides oversight of, the project management system. Whereas project management is concerned with how project work should be organized and conducted, project governance is

concerned with defining the institutional environment within which project decisions are made and ensuring that these decisions are made in a manner that is consistent with project objectives and stakeholder interests (PMI, 2016). As such, the project governance system occupies a central position for ensuring that projects realize their business case and the target benefits stated therein, which in turn supports the implementation of organizational strategy (APM, 2011; Hjelmbrekke, Klakegg, & Lohne, 2017; Jenner, 2015; Thorp, 2001; Turner, Huemann, Anbari, & Bredillet, 2010; Zwikael & Smyrk, 2015).

Although project governance is widely practiced in one form or another and to varying degrees based on the preconceptions and capabilities of the organization in question, the concept of project governance is subject to much confusion in the literature. It is still a budding field (Locatelli, Mancini, & Romano, 2014) that has only recently become a subject of interest in the project management community (Samset & Volden, 2016), although this interest is increasing at an accelerating pace. The majority of research on project governance is conceptual or qualitative in nature (Joslin & Müller, 2016c), which suggests that the field is still developing its conceptual roots. There is a lack of a generally accepted definition of project governance (Bekker & Steyn, 2009b; Pitsis,

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Sankaran, Gudergan, & Clegg, 2014; Too & Weaver, 2014; van Marrewijk, Clegg, Pitsis, & Veenswijk, 2008; Zwikael & Smyrk, 2012, 2015) and research on project governance exhibits wide variations in definitions, interpretations, perspectives, and contexts (Bekker & Steyn, 2009b; Weill & Ross, 2004). Project governance has also been studied from a wide range of theoretical perspectives and various frameworks have emerged in the literature with no clear consensus on what elements constitute a project governance model (Levie, Burke, & Lannon, 2017; Zwikael & Smyrk, 2015). Additionally, existing project governance conceptualizations are dated and incomplete (Lechler & Cohen, 2009; Zwikael & Smyrk, 2012, 2015), and tend to conflate governance with management (PMI, 2016; Too & Weaver, 2014).

There is a need to address these shortcomings in the literature, especially considering the significance of project governance for project-related activities at all organizational levels (Hjelmbrekke, Lædre, & Lohne, 2014; McGrath & Whitty, 2015; Pitsis, Sankaran, Gudergan, & Clegg, 2012). To make sense of the extant literature and understand how project governance facilitates the implementation of organizational strategic objectives through projects, a systematic literature review (SLR) study of project governance was undertaken. As compared to conventional literature reviews, SLRs are more effective because they reduce the likelihood of bias by using a pre-defined, transparent, and replicable methodology (Kitchenham & Charters, 2007). Considering the multitude of viewpoints and definitions that exist in the project governance literature, a systematic methodology serves to mitigate selection bias in choosing primary publications, which in turn helps improve the validity and justifiability of the findings. Hence, the primary motivation for conducting the SLR is to synthesize existing literature on project governance “in a manner that is fair and seen to be fair” (Kitchenham & Charters, 2007, p. 3). Furthermore, unlike traditional literature reviews, SLRs possess the advantage of applying a defined quality criteria to evaluating primary publications (Harden et al., 2004; Kitchenham & Charters, 2007), which helps ensure that only the most theoretically and methodologically robust publications are included.

The present SLR examines relevant academic publications from the three key project management journals and the Web of Science database; relevant professional publications from three prominent professional organizations; as well as relevant and influential ancillary literature including books and practice standards. In total, 271 primary publications were selected, coded, and analyzed to identify themes in the literature pertaining to definitions, theoretical foundations, and forms of project governance as well as the role of project governance in enabling strategy implementation.

1.1. Purpose and potential contribution of the present study

This study builds upon and updates the previous reviews (Ahola, Ruuska, Artto, & Kujala, 2014; Biesenthal & Wilden, 2014; Derakhshan, Turner, & Mancini, 2019; Lappi, Karvonen, Lwakatere, Aaltonen, & Kuvaja, 2018; Müller, Pemsel, & Shao, 2014) by examining the definitions, theoretical foundations, and forms of governance that have been studied in the context of projects. Also, this SLR adds another dimension to the previous reviews by including publications from the professional literature that have and continue to influence how project governance is conducted in practice. In doing so, it attempts to shed light on the disparity, if it exists, between project governance theory and practice (Morris, 2016). A large part of the literature on project management exists in the form of practitioner guidelines and professional standards developed and disseminated by leading industry organizations, which are widely influential in the field. Therefore, a thorough review of the project governance literature must include the concepts and practices outlined in these publications. Additionally, a criticism of systematic reviews relying solely on journals and databases is their tendency to miss contributions from books (Winch & Leiringer, 2016). To address this, influential books and best practice standards on project governance were also included in the present review.

This SLR further distinguishes itself from the previous reviews by examining the role of project governance in realizing organizational strategic objectives through projects. Recent trends have prompted a rethinking of project management research and practice (Winter & Szczepanek, 2008). As the emphasis of project management shifts towards value creation and, consequently, on the alignment of projects with organizational strategy, so too must the emphasis of project governance shift towards enabling organizational strategy implementation and the stewardship of project benefits from conception to realization (Musawir, Serra, Zwikael & Ali, 2017). Recent research by PMI indicates that only 65% of organizations report a somewhat high or very high level of alignment of projects to organizational strategy and only 33% of organizations report a high benefits realization maturity (PMI, 2018). The present SLR seeks to address this gap by examining the role of project governance in enabling organizational strategy implementation as described in academic and professional literatures. Accordingly, this study aims to answer the following research questions:

RQ1: How is project governance defined in the literature?

RQ2: What are major theoretical perspectives that have been used to study project governance in the literature?

RQ3: What are the different forms of governance that have been studied in the project governance literature?

RQ4: How can project governance enable the realization of organizational strategy through projects?

2. Methodology

This study adopts the philosophical position of critical realism, the groundwork of which was laid down by Bhaskar (1975). Critical realism views the nature of reality as objective and existing independently of the mind, but subject to interpretation based on the social conditioning of the observer (Saunders, Lewis, & Thornhill, 2016). Accordingly, it requires researchers to acknowledge their biases and to make a concerted effort towards minimizing these biases and staying as objective as possible (Saunders et al., 2016). Indeed, research on project governance is often dependent upon the perspective and past experiences of the researchers (Bekker & Steyn, 2009b; Weill & Ross, 2004), and thus susceptible to their personal values and biases. We attempted to mitigate this bias by using a pre-defined, systematic method of identifying and selecting publications.

The concept of governance, particularly in the context of projects and project management, lends itself to the critical realism philosophical position. While an optimal form of governance for each individual project does theoretically exist, in practice the choice of governance structures and processes relies on the subjective assessment of these contextual factors by individuals involved in the governance system. By combining objective facts, contextual factors, and subjective experiences, critical realism offers a robust philosophical framework for studying project governance (Müller, Zhai, Wang, & Shao, 2016b).

To understand the complex and multi-faceted concept of project governance, an abductive approach was used in this study. This approach is often used in management research (Saunders et al., 2016), especially when dealing with complex phenomena. Abduction involves moving back and forth between deductive and inductive approaches to theorize about the phenomenon under study (Suddaby, 2006). An initial scoping study was used to acquire an overview of the project governance literature and identify the main academic and professional sources contributing the literature (Musawir, Abd-Karim, & Mohd Danuri, 2016). Also, the research questions for the present study were developed based on the findings of the scoping study.

2.1. Literature search strategy

In line with the recommendations of Kitchenham and Charters (2007), multiple electronic sources were used to search for relevant primary publications. The search strategy for academic literature involved two steps. First, search queries for relevant primary publications

were conducted in the three key project management journals identified by Ahola et al. (2014), namely (i) *International Journal of Project Management*, (ii) *Project Management Journal*, and (iii) *International Journal of Managing Projects in Business*. Second, a search query was conducted in the Web of Science database, which is widely recognized to be amongst the best and most comprehensive academic databases for a wide range of subjects, including project management (Ahola et al., 2014). The search strategy for professional literature involved identifying relevant publications from three prominent professional organizations, namely (i) the *Project Management Institute (PMI)*, (ii) the *Association for Project Management (APM)*, and the *International Project Management Association (IPMA)*.

For both academic and professional literatures, all publications from the time records began until January 2019 were included. Various search strings were tested and the relevance of the results was assessed. After several iterations of this process, a draft set of search strings was developed. Subsequently, feedback from a prominent expert on project governance was elicited and the keywords were updated based on their recommendations. The following search strings were finally used:

- Key project management journals: “governance” OR “project sponsor” OR “project owner” OR “steering committee” OR “steering group” OR “program management” OR “portfolio management” OR “project board” OR “management board” OR “PMO” OR “project management office”. The search was conducted within the title, abstract, and keywords fields.
- Web of Science database: “project governance” OR “governance of projects” OR “governance of project management” OR “project management governance” OR “OPM governance” OR “program governance” OR “portfolio governance”. The search was conducted within the topic field which checks the string against title, abstract, and keywords sections of publications.
- Professional organizations: “governance” was used to search the respective websites of each organization for relevant publications.

2.2. Literature selection procedure

The number of results found through each search query was recorded. Among these results, the candidates for primary publications were identified based on their relevance, which was judged by examining their title, abstract, and keywords sections. From these candidates, the primary publications to be included in the SLR were selected based on the inclusion, exclusion, and quality criteria outlined by Kitchenham and Charters (2007). For the professional literature, the search queries produced a very large and unmanageable number of results. For reasons of parsimony and practicality, only the flagship standards of each organization, i.e. PMI’s Guide to the Project Management Body of Knowledge (PMBOK Guide), APM’s Body of Knowledge, and IPMA’s individual, project, and organization baselines were included, along with any standards or best practices guide specifically pertaining to project governance developed by these organizations. A second-wave search was conducted within the selected publications to identify additional influential literature on project governance (Kitchenham & Charters, 2007). This led to the addition of forty one papers, two books (Garland, 2009; Müller, 2009), and one project management standard: Projects in Controlled Environments 2 (PRINCE2) (Office of Government Commerce, 2009). The flow diagram of the selected primary publications is presented as Fig. 1.

In line with the method used by Ahola et al. (2014), a candidate publication was included if the central topic of discussion was related to the research questions of the study. Papers published in sources that were not subject to peer-review were excluded. This criterion did not invalidate industry standards or best practices as it is assumed that these are developed and reviewed by multiple experts in the field. To assess the quality of each candidate publication, the quality assessment criteria developed by Kitchenham and Charters (2007, pp. 25–28) were used. Furthermore, in cases of multiple candidate publications of the same core paper, the most complete version was used. For practical reasons, publications in languages other than English were excluded.

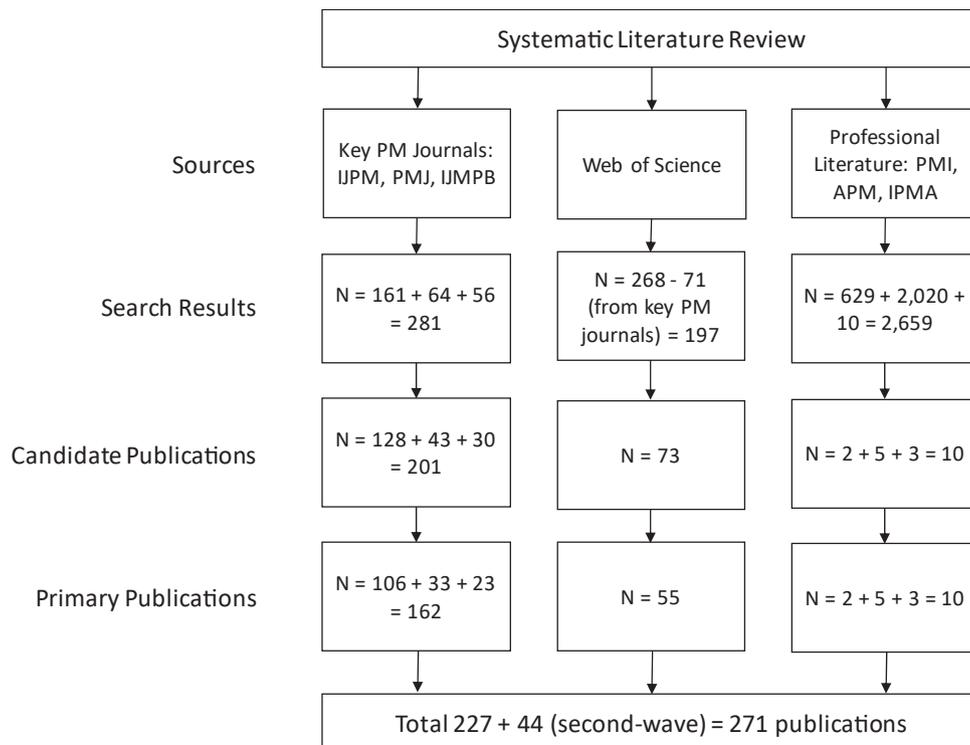


Fig. 1. Systematic literature review search and selection breakdown.

2.3. Data extraction and analysis

All primary publications were uploaded into the Atlas.TI 7 software. Relevant sections of the publications were stored as quotations under various codes that represent key points of enquiry in the SLR. Professional publications were coded separately from academic publications to enable a comparative analysis of themes. Codes were developed in line with the topics of interest pertaining to the research questions and used primarily as ‘containers’ to hold relevant quotations, e.g. ‘PG Theory-Institutional’. Subsequently, we examined all quotations pertaining to the topic concurrently to identify key insights and recurring themes for that specific topic. The second purpose of the codes was to identify the range of topics being discussed in the literature pertaining to each research question, as well as the frequency of occurrence of that topic as indicated by the number of quotations in that code. We used this information to identify the higher-level themes and trends for each research question. This multi-level approach allowed for the identification of micro as well as macro themes in the literature.

3. Findings

Although the field is still at an early conceptual stage, interest in project governance has been increasing at an accelerating pace over the past few years. For example, two SLRs related to different aspects of project governance were published just in 2018 (Derakhshan et al., 2019; Lappi et al., 2018), while PMI published a comprehensive practice guide on multi-level project governance in 2016 (PMI, 2016). Although the majority of the literature is still qualitative, there has been increasing interest in quantitative research on project governance (e.g. Benítez-Ávila, Hartmann, Dewulf, & Henseler, 2018; Chen, Manley, Lewis, Helfer, & Widen, 2018; Musawir et al., 2017; Ning, 2018; You, Chen, Wang, & Shi, 2018). However, most quantitative research remains focused on contractual and relational governance. Furthermore, the results indicate that project governance is gaining increasing representation in outlets beyond project management journals, in disciplines such as organization studies (e.g. Loch, Mahring, & Sommer, 2017), engineering management (e.g. Hu, Le, Gao, Li, & Liu, 2018), information technology (e.g. Too, Le, & Yap, 2017), and sustainable development (e.g. Herrera-Reyes, Carmenado, & Martínez-Almela, 2018).

The remainder of this section summarizes the findings of the SLR from both academic and professional literatures.

3.1. Definitions of governance in the realm of projects

The word “governance” was derived from the Latin word “gubernare” which translates to “steering” (Müller, 2009). Governance as a term became popularly used in social sciences research only about two decades ago (Chang, 2015). Although the term can take on several meanings across various contexts (Klakegg, Williams, Magnussen, & Glasspool, 2008), it broadly refers to the direction and control of activities within a specific domain, e.g. national governance, institutional governance, public governance, corporate governance, IT governance etc. In the context of organizations, Müller (2009) describes governance as a self-regulatory system wherein the regulator is a part of the organization being regulated. When governance is applied to the domain of projects, it is referred to as project governance.

There is a tendency in the literature to conflate project governance with project management (PMI, 2016; Too & Weaver, 2014). Project management involves the execution and control of day-to-day project operations at the project level (Biesenthal & Wilden, 2014). In contrast, project governance operates at a higher level and involves the creation and implementation of a system of checks and balances designed to align project decision-making with the objectives of the funding organization (Biesenthal & Wilden, 2014). Project governance is also distinct from project control in that the latter is only concerned with the validation and verification of completed activities and operates within the internal

environment of the project (Bekker & Steyn, 2008), whereas the former has a much broader scope that extends the full length of the project life cycle and beyond. Hence, project control is a subset of project governance (Bekker & Steyn, 2009a).

3.1.1. Project governance at different organizational levels

Project-related governance occurs at multiple levels within an organization, with each level varying in its objectives and the breadth of its scope (Terlizzi, Meirelles, & de Moraes, 2016). At the highest level, corporate governance is concerned with the direction and control of all activities within an organization, which naturally includes project activities (Levie et al., 2017). From the corporate level, governance cascades down to the portfolio, program, and project levels (sometimes referred to as P3 governance) with the scope becoming narrower at each step (Hyvari, 2016). While governance structures, processes, and even objectives vary considerably by organizational level, the overarching purpose of governance at each level remains the same: “to define the objectives of organizational projects, provide the means to achieve those objectives, and control progress” (Müller et al., 2016b, p. 958). The phrase ‘governance in the realm of projects’ as defined by Müller and colleagues is an effective umbrella term for grouping together project-related governance at various levels in the organization.

In the professional literature, both PMI (2016) and APM (2012) segregate governance at the portfolio, program, and project levels with the former also including an Organizational Project Management (OPM) level. Also, APM (2011) defined the concept of governance of project management (GoPM), which is based on UK and US corporate governance guidelines, and outlines principles and guidelines aimed at directors and others with corporate governance roles for the effective governance of program and project management activities within an organization (APM, 2011).

3.1.2. Definitions of project governance

There are wide variations in how project governance is defined in the literature, most notably pertaining to the scope and temporality of project governance (Ahola et al., 2014) among other factors (Joslin & Müller, 2015). For example, some project researchers and practitioners view project governance as an all-encompassing term that spans all aspects of project management while others view it more narrowly as contractual control (Bekker & Steyn, 2009a). This indicates that there is a lack of a mainstream understanding of, and agreement on, what constitutes project governance (Ahola et al., 2014; Biesenthal & Wilden, 2014; McGrath & Whitty, 2015). A list of the key definitions of project governance is provided in Table 1, along with the respective contexts of the source publications.

Some common themes exist among the definitions, such as project governance being a framework for project decision-making, addressing interests of stakeholders, monitoring and controlling project progress, defining and ensuring successful project delivery, and aligning projects with organizational strategy. However, the definitions do not agree on what actually comprises project governance. For example, Müller (2009) suggests it consists of a value system, responsibilities, processes, and policies whereas Turner (2009) suggests it involves a set of relationships, while Renz (2007) describes project governance as simply a process-oriented system. Definitions from professional literature are also similarly varied. A second point of difference between definitions is the scope of project governance in terms of organizational level. Some definitions describe project governance as an overall framework that includes the governance of projects, programs, and portfolios (APM, 2012; Müller, 2009), while others limit its scope specifically to project-level activities (Pinto, 2014; PMI, 2016).

3.2. Theories applied in the project governance literature

A summary of the most prominent theories that have greatly influenced the project governance literature, as well as their applications in

Table 1
Definitions of project governance.

Citation	Definition	Context
Academic Literature		
Müller (2009, p. 4)	“Governance, as it applies to portfolios, programs, projects, and project management, coexists within the corporate governance framework. It comprises the value system, responsibilities, processes and policies that allow projects to achieve organizational objectives and foster implementation that is in the best interests of all the stakeholders, internal and external, and the corporation itself.”	General
Garland (2009, p. x)	“Project governance is the framework within which project decisions are made. It incorporates the structures that are established along with the terms of reference of the various governance bodies and role statements indicating the accountabilities and responsibilities of those who work within the decision-making arrangements.”	General
Turner (2009, p. 311)	“The governance of a project involves a set of relationships between the project’s management, its sponsor (or executive board), its owner and other stakeholders. It provides the structure through which the objectives of the project are set, and the means of attaining those objectives and monitoring performance are determined.”	General
Pinto (2006) in Pinto (2014, p. 383)	“The use of systems, structures of authority and processes to allocate resources and coordinate or control activity in a project.”	Construction megaprojects
Renz (2007, p. 220)	“A process oriented system by which projects are strategically directed, integratively managed and holistically controlled, in an entrepreneurial and ethically reflected way.”	Projects of non-profit organizations
Bekker and Steyn (2009a, p. 91)	“A set of management systems, rules, protocols, relationships, and structures that provide the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.”	Large capital projects
McGrath and Whitty (2015, p. 781)	“Project governance [is] the system by which a project is directed and controlled and held to account.”	General
Professional Literature		
PMI (2016, p. 4; 2017b, p. 44)	[Project governance defined as distinct from program, portfolio, and OPM governance] “The framework, functions, and processes that guide project management activities in order to create a unique product, service, or result to meet organizational strategic and operational goals.”	General
APM (2012, p. 8)	[In reference to combined governance at project, program, and portfolio levels] “Governance refers to the set of policies, regulations, functions, processes, procedures and responsibilities that define the establishment, management and control of projects, programmes and portfolios.”	General
APM (2011, p. 7)	[For the concept Governance of Project Management (GoPM)] “The governance of project management concerns those areas of corporate governance that are specifically related to project activities.”	General
IPMA (2016b, p. 38)	[Based on ISO 21500:2012 – Guidance on Project Management] “Organizational governance consists of the framework and principles by which an organization is directed and regulated. Project governance, as defined in ISO 21500, ‘includes, but is not limited to, those areas of organizational governance that are specifically related to project activities’. Project governance could define organizational policies, processes and methodologies to be used in projects, the management structure, limits of authority for decision-making, etc.”	General

the project governance literature, is provided in Table 2. In the academic literature, the most common theoretical perspectives are agency theory and transaction cost economics (TCE) theory. Agency theory is sometimes discussed along with stewardship theory with the two proposed as either as competing (Joslin & Müller, 2016c) or complementary (Müller et al., 2016b) perspectives. The discussion using both theories is primarily concerned with the relationship between the project sponsor and manager, and whether this relationship should be based on control and/or trust.

The professional literature does not explicitly discuss project governance in light of any specific theory, although some of the tenets of corporate governance theories are implied. For example, the principal-agent problem and information asymmetries within projects are implicitly considered in guidelines pertaining to oversight, control, alignment, and assurance of project management systems as well as disclosure and reporting of project information (APM, 2011; PMI, 2016). Also, in line with stakeholder theory, understanding and addressing the needs of stakeholders is widely recommended (APM, 2011; IPMA, 2016b; PMI, 2016). Perhaps the most prominent theoretical lens implicitly applied in the professional literature is contingency theory, as evidenced by the emphasis on tailoring the governance system to the specific needs of each project (APM, 2011; IPMA, 2016a; PMI, 2016).

3.3. Forms of governance discussed in the project governance literature

The most prominent forms of governance that appear in the academic project governance literature are summarized in Table 3. Governance forms refer to the various terminologies and their underlying concepts that have been applied in the context of projects. The purpose of this section is to take stock of these terms and concepts and to summarize their role in the project governance literature.

Other forms of governance discussed in the literature include public governance referring to governance of large public sector projects

(Brunet, 2018; Du & Yin, 2009; Hu et al., 2018; Klakegg et al., 2008; Volden & Andersen, 2018), governance of project procurement (Abu Hassim, Kajewski, & Trigunaryah, 2011; Brahm & Tarziján, 2015), PMO governance (Tsaturyan & Müller, 2015), risk governance (Cuppen et al., 2016), system governance (Locatelli et al., 2014), and agile governance (APM, 2016; Lappi & Aaltonen, 2017; Lappi et al., 2018). Furthermore, the concept of governmentality has also been applied to the context of projects as an integrative mechanism that seeks to examine and explain how governance is actually conducted in projects (Clegg, Pitsis, Rura-Polley, & Marosszeky, 2002; Müller et al., 2014, 2015).

3.4. Project governance and strategy implementation

The Oxford Dictionary defines ‘strategy’ as “a plan of action designed to achieve a long-term or overall aim” (Oxford Dictionary, 2019). Corporate strategy differs from business strategy in that the former is more comprehensive and defines ‘what’ businesses an organization will compete in, while the latter defines ‘how’ the organization will compete in one specific business and position itself vis-à-vis its competitors (Andrews, 1971). For simplicity, the term ‘organizational strategy’ will be used to refer to both forms of strategy, since projects may contribute to the achievement of either or both simultaneously.

The flow of organizational strategy to the project level is described by Müller (2009), who explains that goals at the portfolio level are defined by the board of directors as a subset of the organization’s strategic goals. This, in turn, forms the basis of the goals for individual programs and projects, the achievement of which is usually overseen by sponsors and steering committees. However, the literature offers limited guidance on how strategy is translated down to the project level, much less how it can be implemented through projects and programs (Anderson & Merna, 2003; Milosevic & Srivannaboon, 2006; Morris & Jamieson, 2005).

Table 2
Theories applied in the project governance literature.

Theory	Core Propositions	Key References
	Applications in Project Governance Literature	
Agency Theory	<ul style="list-style-type: none"> • Individuals behave in a self-interested manner in order to maximize their utility • The principal-agent problem occurs when there is separation of ownership from control and interests of both are not aligned • Problem is exacerbated by information asymmetries, where agent possesses more information than principal, which leads to adverse selection problems pre-contract and moral hazard problems post-contract • Agency costs must be borne by the principal to control the problems through contractual safeguards and incentives • Most widely used theoretical lens in the project governance literature • Mostly applied to study the relationship between project owner/sponsor and project manager • Also studied are the relationships between owners and contractors, owners and supervisors, and supervisors and contractors, mainly in construction projects 	Eisenhardt (1989); Jensen and Meckling (1976)
Stewardship Theory	<ul style="list-style-type: none"> • Concerned with identifying optimal governance mechanisms to maximize value for the owner/sponsor • Opposes the self-interest premise of agency theory • Posits agents realize their long-term interests are tied to the success of the organization • Hence, agents derive greater utility from cooperative and pro-organizational behaviors • Views agents as trustworthy stewards who seek to build long-term, mutually beneficial relationships with the principal • Advocates empowering agents and using trust-based relational mechanisms to guide their behavior • Suggests owners should work in cooperation with project managers and guide them towards optimal resource usage • Often used together with agency theory as competing theoretical lenses to study governance relationships • Sometimes used as complementary lenses or as two ends of a spectrum describing governors' orientation • Findings suggest stewardship perspective leads to better project performance in high-risk projects, agency leads to better performance in low-risk projects 	Andersen (2012); Karlsen (2010); Müller and Turner (2005); Toivonen and Toivonen (2014); Zwikael and Smyrk (2015)
Transaction Cost Economics (TCE) Theory	<ul style="list-style-type: none"> • Posits that when any two parties engage in an economic exchange or 'transaction', certain transaction costs are incurred • These include search and information costs incurred by transacting parties to identify each other, bargaining and decision costs to reach an acceptable agreement and establish contractual stipulations, and policing and enforcement costs to ensure both parties honor their commitments • Also posits that transactions are subject to bounded rationality and opportunistic behavior by parties involved • Classifies transactions along three dimensions: asset specificity, transaction frequency, and degree of uncertainty • Seeks to explain how transaction cost considerations affect the way in which transactions are organized • Widely applied in the context of projects to understand how transaction costs considerations affect governance decisions, including determining the optimal form of contracts • Often applied to study how exchange hazards and opportunism by external project participants can be controlled, particularly in construction projects • Applied to study the selection of contractors and suppliers in construction projects • Used as the basis for the concept of 'process specificity', an extension of asset specificity, in construction projects 	Dahlman (1979); Williamson (1975, 1979, 1985)
Stakeholder Theory	<ul style="list-style-type: none"> • Describes an organization as a constellation of interests of internal and external stakeholders • Expands upon shareholder theory and claims its view of organizations offers a greater level of descriptive accuracy and moral groundedness • Posits that the interests of each stakeholder group are of intrinsic value, i.e. they deserve consideration for their own sake and not simply as a means for furthering the interests of another group • Used to advocate the need for governors to engage with project stakeholders • Applied to study stakeholder analysis techniques in projects • Also applied to study stakeholder participation in project decision-making • Complexity of the stakeholder environment used as a dimension in categorizing projects 	Donaldson and Preston (1995); Evans and Freeman (1988); Freeman (1984)
Institutional Theory	<ul style="list-style-type: none"> • Concerned with the study of social structures, such as schemas, rules, norms, and routines, that have become resilient and established as authoritative guidelines for social behavior • Posits that institutions are comprised of cultural-cognitive, normative, and regulative elements and seeks to explain how these elements are created, diffused, adopted, adapted, and changed over time • Used to examine how an organization's regulative, normative, and cultural-cognitive elements affect the development and conduct of project governance • Applied to examine the extent to which governance institutions, such as PMOs, are a result of institutional isomorphism 	Arto, Martinsuo, Dietrich, and Kujala (2008b); Cuppen, Bosch-Rekvelde, Pikaar, and Mehos (2016); Derakhshan et al. (2019); Müller and Lecoivre (2014); Soste et al. (2015) Scott (2001, 2005, 2012)
Contingency Theory	<ul style="list-style-type: none"> • Also used to study the impact of highly institutionalized governance arrangements on project success • Posits that there is no single best approach to making organizational decisions and that the optimal approach varies by its internal and external environmental characteristics • Has been applied to a wide range of topics including leadership, human resource management, and strategic decision-making but most prominently to organizational structure • Increasingly being applied to study the optimal governance arrangements in different project contexts • Used to empirically study the effects of various forms of governance and governmentality on project success • Also used to examine the optimal organizational design for managing multiple projects 	Donaldson (2001) Aubry and Lavoie-Tremblay (2018); Joslin and Müller (2015, 2016b); Müller and Martinsuo (2015); Müller, Zhai, and Wang (2017); Pemsel and Müller (2012)

(continued on next page)

Table 2 (continued)

Theory	Core Propositions	Key References
	Applications in Project Governance Literature	
Network Theory	<ul style="list-style-type: none"> • A subset of graph theory that is concerned with the study of networks and related phenomena • Widely applied in various disciplines ranging from physics, engineering, biology, sociology, and organizational studies • Also used to examine how multi-organizational networks can best be governed to improve network effectiveness • Applied to examine how temporary networks are formed and evolve over time in mega projects, what are the challenges faced therein, and how said challenges can be addressed • Used to examine how multiple project management offices can be integrated and governed in large project-based organizations 	<p>Aldrich and Whetten (1981); Newman (2010); Provan and Kenis (2008)</p> <p>Lu, Li, Pang, and Zhang (2015b); Tsaturyan and Müller (2015); van Fenema, Rietjens, and van Baalen (2016)</p>

In the professional literature, there is a general recognition that projects must be aligned with and implement organizational strategies (APM, 2012; PMI, 2016), that strategies may be both deliberate and emergent (IPMA, 2016a), and that project governance serves to guide project management activities to achieve strategic objectives (APM, 2011; PMI, 2016). However, as with the academic literature, there is a dearth of guidelines regarding how project governance may be set up to enable the implementation of strategy through projects. Table 4 summarizes the limited guidelines in this regard.

Strategy implementation through projects is subject to various challenges. First, the difference in perspectives between the top management level and the project level presents a fundamental limitation to translating organizational strategy into project objectives (Müller & Turner, 2005). Second, the fragmented nature of projects, with their network-based components spread across multiple levels of the organizational hierarchy and often across multiple organizations (Aubry, Sicotte, Drouin, Vidot-Delerue, & Besner, 2012), poses a challenge to linking project work with strategic objectives in an integrated manner. Third, the temporary and transitional nature of project management arrangements and entities, such as PMOs (Aubry et al., 2012), makes it difficult to pursue long-term objectives through projects. Fourth, it is difficult to accurately measure a project's contribution to organizational strategy. Project benefits, while a useful metric for evaluating a project's strategic value (Serra & Kunc, 2015), are often realized well after project delivery, making it difficult to assess a project's strategic contribution at the time of delivery, (Young et al., 2012). This problem is exacerbated by the dynamic nature of strategy and evolving stakeholder priorities, which at best may alter the weightage of planned benefits and at worst may render a previously successful project unviable or redundant (Young et al., 2012).

4. Discussion

The project governance literature is largely diffuse. Insights on project governance are spread across various academic and professional publications, in each case molded by the specific context of the publication, most notably by the project industry, the project delivery method, whether it is executed primarily in the private or public sector, and the number of independent organizational entities participating in the project. This, in itself, is not a problem as it makes sense to adapt general governance guidelines to specific contexts. The point of concern is the lack of consensus on the what constitutes project governance on a fundamental level (Bekker & Steyn, 2009b; Pitsis et al., 2014; van Marrewijk et al., 2008). As a result, research on project governance tends to emerge from a multitude of theoretical and conceptual foundations (Ahola et al., 2014; Bekker & Steyn, 2009b; Garland, 2009; Weill & Ross, 2004), rather than from a single mainstream foundation. Therefore, it is not surprising that the trajectories of the studies on project governance tend to diverge, leading to the unintentional obfuscation of the concept of project governance. This situation is especially distressing considering the critical role of project governance in enabling project success (Hjelmbrekke et al., 2014; McGrath & Whitty, 2015; Pitsis et al., 2012) and organizational strategy implementation (APM, 2011; Hazard &

Crawford, 2004; PMI, 2016; Turner et al., 2010; Zwikael & Smyrk, 2015). This study sought to take into account and make sense of the multitude of perspectives in the project governance literature.

4.1. A baseline definition of project governance

We can now answer the research questions initially proposed. The first research question was concerned with how project governance is defined. We suggest that the generic definition proposed by McGrath and Whitty (2015) effectively captures the essence of project governance in a manner that is consistent with the definition of general governance. It characterizes project governance simply as a system by which a project is directed, controlled, and held to account. The Merriam-Webster online dictionary defines a system as “a regularly interacting or interdependent group of items forming a unified whole” (Merriam-Webster, 2019). The definitions of project governance variously discuss elements such as frameworks, structures, processes, policies, responsibilities, accountabilities, and relationships. While these elements are integral components of project governance, we suggest that project governance itself can be adequately described as a system, which implies a constellation of the aforementioned as well as other elements. Also, the definition succinctly captures the fundamental purpose of project governance as direction (i.e. setting the goals), control (i.e. ensuring projects achieve said goals), and holding projects to account (i.e. creating accountability for the outputs, outcomes, and benefits initially promised).

Furthermore, while the definition proposed by McGrath and Whitty (2015) limits the scope of project governance specifically to a single project, it simultaneously allows for the encompassment of all governance elements involved in the direction and control of projects, which may include program management, portfolio management, organizational project management, senior management, and organizational governance depending on the project context (APM, 2012; Müller, 2009; PMI, 2016). This, we believe, is an important factor that allows for a realistic definition of the rather elusive project governance construct. We respectfully contend that it is not useful to assign project governance to a particular ‘level’ in the organization (Biesenthal & Wilden, 2014) or limit it to being within the boundaries of a particular project (Ahola et al., 2014). Realistically, the elements involved in project governance may vary drastically from one project to another, both within and between organizations. For example, in some small projects, it may involve only a project sponsor or equivalent whereas in larger projects, it may involve several individuals from across the organizational hierarchy including the CEO and even individuals from other organizations.

Therefore, we propose that project governance should not be viewed as ‘residing’ at a particular level in the organization but rather as a system involving any and all elements that pertain to the governance of a particular project. Overall, we suggest the definition proposed by McGrath and Whitty (2015) is widely applicable to project governance in various contexts and thus it is a useful starting point for defining project governance in practice, which may be expanded upon by taking into consideration industry-specific, organization-specific, and even project-specific contextual factors.

Table 3
Forms of governance.

Terminology	Summary	Applications in PG	Key References
Contractual Governance & Relational Governance	<ul style="list-style-type: none"> Based on TCE theory Complementary approaches to curb opportunism and minimize transaction costs Involves using formal contracts in tandem with informal relational governance approaches to enhance project performance 	<ul style="list-style-type: none"> Mainly studied at the individual project level, particularly in construction projects Studies tend to focus on owner-supplier relationships 	Benítez-Ávila et al. (2018); Chen and Manley (2014); Lee and Cavusgil (2006); Lu, Guo, Qian, He, and Xu (2015a)
Information Technology (IT) Governance & IT Project Governance	<ul style="list-style-type: none"> Based on industry standards and practitioner guidelines such as Control Objectives for Information and Related Technology (COBIT) IT governance emphasizes oversight of IT strategy formulation and implementation, forms the bridge between corporate governance and IT project governance IT project governance emphasizes selection of the right IT investments and alignment of IT projects with organizational strategy 	<ul style="list-style-type: none"> IT governance mainly studied at the OPM level in IT projects, i.e. as an overall framework that governs all IT investments Studies tend to focus on describing IT governance, positioning it in relation to other governance forms, and examining its influence of project and business outcomes 	Bernroider, Wong, and Lai (2014); Marnewick and Labuschagne (2011); Sirisomboonsuk, Gu, Cao, and Burns (2018); Terlizzi et al. (2016)
Public-Private Partnership (PPP) Governance	<ul style="list-style-type: none"> Based on some elements of TCE theory Involves establishing appropriate structures, procedures, and instruments to direct and control PPP projects and programs 	<ul style="list-style-type: none"> Emphasis on PPP projects and programs, particularly in the infrastructure development sector 	Khallaf, Naderpajouh, and Hastak (2018); van den Hurk and Verhoest (2015); Zhang, Gao, Feng, and Sun (2015)
Network Governance	<ul style="list-style-type: none"> Based on network theory and to some extent TCE theory Emphasis on the need to view projects as a complex network of internal and external organizations and stakeholders Advocates the use of network-level governance mechanisms and concentration of interdependent activities within the same organization 	<ul style="list-style-type: none"> Emphasis on the governance of large and mega projects with multiple participating organizations and a complex web of interests 	Adami and Verschoore (2018); Ahola (2018); Ahola and Davies (2012); APM (2007); Davies, MacAulay, DeBarro, and Thurston (2014); Ruuska, Ahola, Artto, Locatelli, and Mancini (2011); Steen, DeFillippi, Sydow, Pryke, and Michelfelder (2018); van Marrewijk and Smits (2016)
Benefits Governance	<ul style="list-style-type: none"> Based on agency theory and institution theory Relatively new concept emphasizing the interdependent responsibilities and accountabilities of the senior responsible owner (SRO), project management, and benefits owner roles Advocates the integration of project management and benefits management Advocates the use of contracts to achieve desired behaviors and outcomes 	<ul style="list-style-type: none"> Emphasis on the role of benefits governance in the adoption of project benefit management practices, improving project performance, and extracting superior value from project investments 	Badewi (2016); Badewi and Shehab (2016); Terlizzi, Albertin, and de Moraes (2017)
Knowledge Governance	<ul style="list-style-type: none"> Based on TCE theory and the knowledge-based theory of the firm Relatively new concept emphasizing the direction and control of knowledge processes in and between projects Advocates a proactive approach to setting, enabling, controlling, and achieving knowledge-based goals 	<ul style="list-style-type: none"> Emphasis on the conceptualization of knowledge governance, defining its mechanisms, and exploring its role in facilitating the achievement of knowledge goals as well as knowledge transfer within and between projects 	Müller, Glückler, Aubry, and Shao (2013); (Pemsel & Müller, 2012); Pemsel, Wiewiora, Müller, Aubry, and Brown (2014)

4.2. Adopting theoretical pluralism to study project governance

The second research question asked which major theories had been applied in the literature to study project governance. Each theory presents a different perspective for examining project governance phenomena and thus adds to the discourse on project governance. Biesenthal and Wilden (2014) advocate a plurality of theoretical perspectives and posit that some theoretical perspectives are more relevant at different levels of project governance, e.g. agency theory may be more relevant at the project level whereas stakeholder theory may be more relevant at the organizational level. Similarly, Müller (2009) suggests that the relevance of theoretical perspectives may also vary by the project management phase, e.g. TCE may be more relevant during the pre-contract phase whereas agency theory may be more relevant during the latter phases. Furthermore, Derakhshan et al. (2019) proposed a framework indicating that the theoretical lens used to study project governance varies by the organizational level and the types of stakeholders involved. Hence, project governance is not a static phenomenon that can be adequately understood through a single theoretical lens (Musawir et al., 2017). Therefore, theoretical and philosophical triangulation is needed to improve the understanding of project governance phenomena (Joslin & Müller, 2016a). Ahola et al. (2014) similarly advocate examining project

governance from multiple theoretical lenses but caution that any potential conflicts between the underlying assumptions of theoretical perspectives must be accounted for before trying to merge them.

Furthermore, a number of recent studies have adopted contingency theory as their theoretical perspective to study project governance (Aubry & Lavoie-Tremblay, 2018; Joslin & Müller, 2016b; Müller et al., 2017; Müller & Martinsuo, 2015). This trend is an indication of the wider shift in the literature from the pursuit of a 'one-size-fits-all' framework of project governance to more nuanced discussions on appropriate governance practices based on the specific characteristics of individual projects, as well as their organizational and cultural contexts (Müller et al., 2016b; PMI, 2016). Hence, contingency theory may be useful as an overarching theoretical framework in project governance research that can be used to identify and isolate a particular set of relatively similar projects, which can then be studied from other, secondary theoretical perspectives.

A concerning trend is that most studies in project governance literature do not build upon any existing theory or theoretical framework. Even amongst those that do, most only include either a passing mention or a brief discussion of one or more theories without much attempt to relate them to the governance phenomena under study. For the domain of project governance, and project management in general,

Table 4
Role of project governance in enabling strategy implementation.

Function	Description	Citations
Selecting the right projects	Portfolio management is the first point of strategic alignment as it involves selecting and maintaining the optimal mix of project investments that contribute to organizational strategic objectives	APM (2012); IPMA (2016a, 2016b); Lechler and Thomas (2015); PMI (2016); Thiry and Deguire (2007); Too and Weaver (2014); Winch (2014)
Translating organizational strategy to project strategy	The project governance system, especially the project sponsor, facilitates the two-way exchange of value proposition between top management and project management; defines project strategy in accordance with organizational strategy	APM (2009); Arto et al. (2008b); Hjelmbrekke et al. (2017); Hjelmbrekke et al. (2014); Morris and Jamieson (2005)
Breaking down project strategy into lower-order objectives	Tools such as the balanced scorecard, RACI matrix, the benefits dependency network, and the mission breakdown structure can be used to break down project strategy into assignable and actionable items	Andersen (2014); APM (2012); Coombs (2015); IPMA (2016a); Morris and Jamieson (2005); Ward and Daniel (2006)
Defining the project organizational structure	Determine if project is to be managed as part of a program and if a project management methodology is to be used; determine the level of autonomy granted to the project; define the roles, responsibilities, and accountabilities of actors within the project governance and project management systems	Arto et al. (2008b); Gregory, Keil, Muntermann, and Mahring (2015); Hjelmbrekke et al. (2014); Thiry and Deguire (2007); Too and Weaver (2014)
Aligning project decisions with objectives	Constantly ensure that project decisions are made in a manner that align with project objectives and broader organizational strategic objectives	Garland (2009); Müller (2009)
Ensuring that expected benefits are realized	Assign and enforce responsibilities and accountabilities for benefits realization; monitor and review the project's business case and expected benefits on an ongoing basis	Badewi (2016); Hesselmann and Kunal (2014); Marnewick (2016); Musawir et al. (2017); Zwikael and Smyrk (2015)

to make meaningful contributions to the theories it draws on, we suggest that future studies should attempt to thoroughly engage with their chosen theoretical perspective(s). This may involve, for example, determining what predictions a particular theory makes about the phenomena under study and using a deductive approach to test whether the predictions hold true in reality. Also, since most of the widely applied theories were developed outside the domain of project management, it presents an opportunity for studies to generate theoretical insights based on observations and data specifically in the context of projects, using an inductive approach. The two approaches may also be combined using an abductive approach, a good example of which is Müller et al. (2016b).

4.3. Linking different forms of project governance

The third research question was concerned with examining the different forms of governance studied in the project governance literature. There are various governance-related terminologies discussed in the project governance literature with no clear links either between them or to a mainstream conceptualization of project governance. Some forms of governance in the literature seem to be different aspects of governance that may represent dimensions of project governance, such as benefits governance and knowledge governance. Other forms, such as contractual governance, relational governance, and network governance, seem to be related to projects involving a nexus of collaborations between multiple organizations. Yet other forms of governance, such as IT governance and public governance as well as the related PPP governance, are frameworks with specialized guidelines for project governance within their specific contexts, that being IT and public sector projects respectively. There is a need to situate and integrate the various forms of governance discussed in the project governance literature into a coherent framework. We concur with the views of Too and Weaver (2014) that organizational governance is an amalgamation of governance of different facets of the organization, and extend their proposition to project governance. Hence, we propose that the various governance forms represent different facets that are an integral part of the overall project governance system. Accordingly, further research is needed to link the 'islands' of literature pertaining to the governance forms with the 'mainland' of the project governance literature. The primary challenge, of course, is first delineating the mainland itself.

4.4. Leveraging project governance to enable strategy implementation

The fourth research question sought to examine how project governance can enable the realization of organizational strategy through

projects. Overall, there is no comprehensive framework in the academic literature that explains how project governance enables organizational strategy implementation through projects. Amidst the scattered guidelines on this topic, the most prominent theme is the use of portfolio management to control project investments at the front end and ensure alignment with strategic objectives (APM, 2012; IPMA, 2016a, 2016b; PMI, 2016). Additionally, the role of the project sponsor is emphasized as the link between strategic priorities and project management (APM, 2009). Furthermore, the use of strategic management tools such as the balanced scorecard for translating strategy down to the project level are recommended (APM, 2012; IPMA, 2016b).

The role of project governance becomes especially critical when the project in consideration is high-priority, involves a high level of risk, is facing performance issues, and needs to be realigned to a change in the organization's context and/or strategic priorities (Crawford et al., 2008). However, the project governance framework has to perform a careful balancing act when enacting structures and processes. Thiry and Deguire (2007) warn that standard project governance models may thwart the ability of projects to learn and cope with emerging situations and respond to changing client needs by imposing a mechanistic approach to strategic alignment. Therefore, project governance is not simply an exercise in enacting as many rules and regulations as possible. In fact, the findings of Hällgren and Lindahl (2017) suggest that a decentralized governance system may be more effective in some cases. Rather, it involves tailoring an appropriate governance system taking into consideration the project's characteristics as well as the context within which it resides (DeFillippi & Sydow, 2016; Ruuska et al., 2011; Simard, Aubry, & Laberge, 2018). This includes determining the level of autonomy afforded to a project (Arto, Kujala, Dietrich, & Martinsuo, 2008a), which in turn dictates its capacity to pursue emergent strategies.

It is evident from the above discussion that it would not be appropriate to apply a single project governance system universally across all projects. The next section synthesizes the contextual guidelines in the project governance literature to propose a typology of projects for developing and linking project governance guidelines to particular project contexts.

5. A typology of projects for developing context-specific project governance guidelines

There is an increasing realization in the literature that projects are complex entities and a pluralistic and multi-perspective approach is required to understand project-related concepts (Aubry, 2016b; Sage, Dainty, & Brookes, 2014; Söderlund, 2011), including project governance (Müller et al., 2016b). Indeed, the most pertinent and cross-cutting theme in the project governance literature is that contextual differences

in projects determine the type and level of governance arrangements required. Hence, the optimal form of governance may vary by factors such as the level of complexity (Miller & Hobbs, 2005; Pitsis et al., 2014), level of risk (Abednego & Ogunlana, 2006; Chang, 2015; Zwikael & Smyrk, 2015), purpose of project outputs (Serra, 2015), number of organizations involved (Ruuska et al., 2011; Turner & Keegan, 2001), etc. A typology for categorizing projects has implications for not only how the project governance system is formulated but also for how projects are aligned with strategy (Crawford, Hobbs, & Turner, 2006), how strategy is implemented through projects (Wikström, Artto, Kujala, & Söderlund, 2010), and how emergent strategies from projects arise and are exploited (Vuori, Artto, & Sallinen, 2012).

5.1. Approach to developing the typology

There are two main approaches in the literature to categorizing projects. The first approach considers the organizational characteristics of the parent organization, the project-based part of the parent organization, or the project network (Kujala, Artto, Aaltonen, & Turkulainen, 2010; Whitley, 2006; Wikström et al., 2010). However, organizations do not always adhere to a single business model and the projects they undertake can vary significantly. Therefore, we suggest that it may be more astute to form a typology based on the second approach, which focuses on project rather than organizational characteristics (Crawford et al., 2006; Shenhar, 2001; von Danwitz, 2018; Vuori et al., 2012). Specifically, we propose a typology for categorizing projects in terms of the type of relationship(s) between the funding organization(s) and the performing organization(s) involved a project. A funding organization, as the name implies, invests capital in a particular project (Zwikael & Smyrk, 2012), whereas a performing organization is one that actually undertakes all or the majority of the project work (PMI, 2017b). To be clear, where a project has been financed through external sources, it is not the source of the finance that would be considered the funding organization but rather the organization that acquires the finance and then decides to invest it into the project.

We focus on the degree to which an organization funding the project has (i) direct control over project decision-making and (ii) the capability to accurately evaluate project work on an ongoing basis. From the lens of agency theory, a lack of the former would exacerbate the agency problem of separation of ownership and control (Jensen & Meckling, 1976), while a lack of the latter would intensify information asymmetries between the principal (funding organization) and the agent (performing organization) (Eisenhardt, 1989), thereby enabling the agent to engage in opportunistic behaviors. We propose that these two fundamental project characteristics dictate, to a large extent, how the project governance system should be tailored to meet the needs of the project.

We emphasize the perspective of the funding organization as we contend that the project governance system ought to primarily protect the interests of the investors of capital, in much the same way that the corporate governance system primarily protects the interests of shareholders. The interests of the funding organization are paramount as it defines the investment objectives, i.e. the *raison d'être*, of the project. The funding organization is also often the primary beneficiary of the project, with the natural exceptions of not-for-profit organizations and public sector organizations engaged in projects to benefit stakeholder groups, such as local communities and the general public. Hence, by primarily serving the interests of the funding organization, the project governance system can ensure that projects are deemed to be successful and contribute towards the funder's strategic objectives. In the case of multi-owned projects with multiple funding organizations sharing control over the project's decision-making process, there should be adequate representation of each organization in the project governance system as well as a defined single point of decision-making for the project to avoid disputes (APM, 2007).

Naturally, and once again in congruence with corporate governance, the project governance system also needs to consider the interests of

other stakeholders such as the performing organization, project team members, suppliers, governmental agencies, special interest groups, etc., to the extent that these stakeholders impact upon the successful delivery of projects as well as benefits realization. For example, a contractor may be concerned about profitability or risk exposure. A failure to address these concerns due to a myopic focus on the funder's objectives would likely lead to opportunistic behavior by the contractor (Carson, Madhok, & Wu, 2006; Ning, 2018; You et al., 2018). Therefore, looking after the interests of the performing organization and other key stakeholder groups would indirectly safeguard the interests of the funding organization. However, the ultimate focus of the project governance system should unequivocally be on the investment objectives of the funding organization(s).

Furthermore, it logically follows that only a single project governance system exists for each project regardless of the number of organizations involved. We suggest that only the original investor(s) of capital, usually the organization(s) that ideates and initiates the project, ought to be identified as the funding organization(s). Accordingly, a single, holistic system should govern the entire project and coordinate all parties involved to achieve the objectives of the funding organization(s).

5.2. The proposed typology of projects

The traditional focus of project governance on single, static organizations does not adequately address the complexity of projects involving multiple organizations collaborating together (Li, Lu, Ma, & Kwak, 2018). For example, there are fundamental differences between projects that are completely internal to a single organization or led by a single core organization with a possible range of peripheral organizations; projects led by a dyad of core organizations as in typical client-contractor relationships; and projects led by a network of core organizations (Ahola, 2018). Logic dictates that the governance requirements of these different types of projects must also vary.

Accordingly, using the theoretical lens of contingency theory (Donaldson, 2001), we adapt the typology of networks in interorganizational projects developed by Ahola (2018) to propose three generic project structures based on the types of relationship(s) between the funding organization(s) and performing organization(s) in the project. Whereas the performing organization is one that undertakes all or the majority of project work (PMI, 2017b), the peripheral organizations depicted in the diagram may include suppliers, subcontractors, consultants, or any other partners contracted by the performing organization to deliver specific supplies or work for the project. Consultant organizations, as shown in the diagram, refers specifically to those specialists contracted by the funding organization(s) to assist with the decision-making and oversight of the work to be conducted by the performing organization(s) (NB: in large projects, there may be multiple performing organizations handling different aspects of the project). The typology is presented in Fig. 2.

5.2.1. Type I – projects led by a single organization

Type I projects are those where a single entity is both the funding and performing organization, i.e. it invests the required capital and conducts most or all of the project work. These projects may be entirely internal to a single organization or may involve one or more peripheral organizations that supply goods or services to the project. Examples of Type I projects include internally managed capital expenditure (CAPEX) projects and IT-enabled business change projects.

In Type I projects, the funding organization has complete or near-complete control over the project's ongoing decisions. This, in turn, allows the greatest flexibility to the funding organization to change or terminate the project in accordance with its evolving strategic priorities (Unger, Kock, Gemünden, & Jonas, 2012). The project can also be relatively easily revised at the business case level to take advantage of opportunities to maximize value creation. Furthermore, the funding

organization has full or nearly full access to factual and current information on project progress, which can be leveraged to make effective project decisions, provided that the project governance system involves capable individuals possessing the required business and technical knowledge. These individuals may be sourced either internally or externally as required. Hence, the primary governance challenges in Type I projects are: (i) managing the complex interplay of interests of the business units and/or departments involved, particularly in cases where the funding and execution are conducted by two separate sections of the business (Garland, 2009); (ii) providing adequate senior management engagement and support to the project (Crawford et al., 2008); and (iii) ensuring that relevant and timely project information is made available to decision makers, and ensuring said decision makers are capable of acting on that information (Too & Weaver, 2014).

Since the project actors in Type I projects are mostly or entirely internal to the funding organization, the project governance system in these projects may be studied through a number of theoretical perspectives including, but not limited to: (i) stewardship theory to understand how the funding organization can empower project actors to leverage emergent strategies and maximize value creation (Mintzberg & Waters, 1985; Young et al., 2012); (ii) stakeholder theory to analyze and manage the interests of the internal and external stakeholders involved (Müller & Lecoeuvre, 2014); and (iii) institutional theory to examine how project governance structures and relationships are developed and evolve over time (Badewi & Shehab, 2016; Müller, Pemsel, & Shao, 2015).

5.2.2. Type II – projects led by a dyad or triad of organizations

Type II projects are those that are led by a dyad of a funding organization (colloquially referred to as the client) and a contracted performing organization (the contractor). Where multiple performing organizations are engaged, the dyad would comprise the funding and the primary performing organization, the latter being the one that performs the majority of the work on the project. Where the funding organization lacks the capability to evaluate project work on an ongoing basis, it may enlist the aid of one or more consulting organizations, among which the one providing the majority of consultation would be deemed the primary consulting organization (the consultant), thus forming a triad. The peripheral organizations typically include subcontractors and suppliers for the project. Examples of Type II projects typically include construction projects or indeed any project involving a single funding organization and one or more externally-contracted performing organizations.

In Type II projects, much of the direct control of the funding organization over project decisions is relinquished in favor of the supposed efficiencies of contracting out the work. The controls are instead applied indirectly through contractual and relational governance mechanisms enacted with the performing organization in order to bring its actions in alignment with the interests of the funder (Chen & Manley, 2014; Lee & Cavusgil, 2006; Luo, Zheng, Fang, & Yin, 2015). Also, owing to the use of contracts, the funding organization loses much of the flexibility of

changing or terminating the project at will in light of its evolving business requirements and shifting strategic priorities. Indeed, the increasing use of Agile methodologies of project management may be a response to this loss of flexibility by embracing change and involving the funder throughout the project (APM, 2016; PMI, 2017a).

Type II projects also involve significant information asymmetries where the performing organizations typically possess greater information and expertise than the funding organization to evaluate the ongoing project work, which allow the former to engage in opportunistic behaviors to benefit itself at the expense of the latter (Carson et al., 2006; Ning, 2018; You et al., 2018). For this reason, one or more consultants are often engaged to aid the funding organization in mitigating these asymmetries. Additionally, recent research suggests that the funding organization ought to appoint a project owner, preferably from within the organization, whose role is to be closely involved with the project on an ongoing basis to ensure that decisions are being made in the best interests of the funder (Zwikael & Meredith, 2018). The project owner also represents the single point of accountability for the realization of the project's business case, including the project benefits stated therein, and the project plan (Zwikael, Meredith, & Smyrk, 2019). If sufficiently empowered, the project owner can be instrumental in providing oversight and control in order to mitigate the challenges faced in Type II projects.

The primary governance challenges in Type II projects are related to: (i) aligning the interests of the performing and consulting organizations with those of the funding organization as well as managing the agency costs incurred to achieve this (Jensen & Meckling, 1976); (ii) curbing opportunistic behaviors through contractual and relational governance mechanisms (Carson et al., 2006; Lioliou, Zimmermann, Willcocks, & Gao, 2014; Lu et al., 2015a); (iii) clearly communicating the requirements and strategic priorities of the funding organization down to all project participants (Cao & Lumineau, 2015); and (iv) installing oversight and reporting mechanisms to ensure the availability of relevant and timely project progress information for decision makers (Qian & Zhang, 2018).

The project governance system in Type II projects may be studied through various theoretical lenses, such as: (i) TCE theory to examine decisions such as the initial make vs. buy decisions, the choice of contractors and suppliers, and defining the optimal form of contracts (Reve & Levitt, 1984; Williamson, 1979; Winch, 2001); (ii) agency theory to examine the contractual and relational mechanisms through which funding organizations protect their interests (Poppo & Zenger, 2002); and (iii) stakeholder theory to understand and manage the concerns and expectations of the performing, consulting, and peripheral organizations (Davis, 2014).

5.2.3. Type III – projects led by a network of organizations

Type III projects are those that are led by a network of organizations that include multiple funding organizations and one or more performing

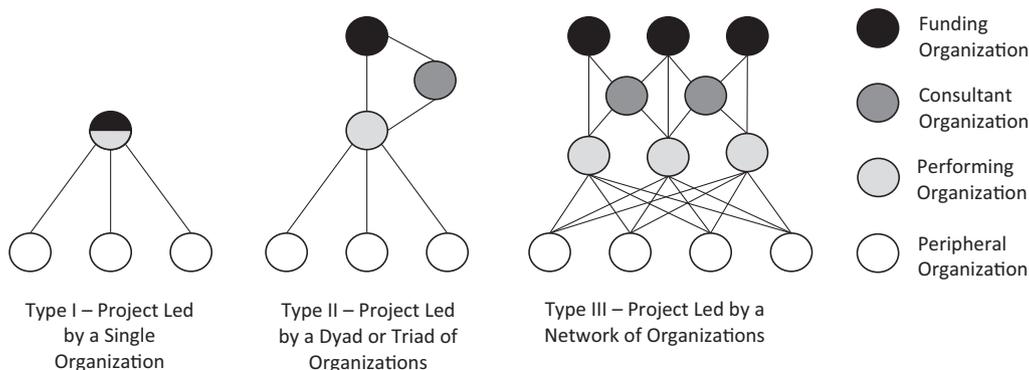


Fig. 2. A Typology of Projects for Developing Project Governance Guidelines (based on the typology developed by Ahola (2018)).

organizations, with the possible inclusion of one or more consulting organizations as well. These projects are described by APM (2007) as multi-owned projects. Examples of Type III projects include joint ventures, public-private partnerships (PPPs), private finance initiatives (PFIs), and public sector projects involving multiple government departments (APM, 2007).

In Type III projects, each funding organization has to share control over the project with other funding partners and adapt their governance structures to mesh with those of their partners (APM, 2007). As ownership is shared, the funding parties do not have the flexibility to make unilateral changes to the project and the ability of each organization to secure its own strategic interests in the projects naturally diminishes as the number of partners increases. However, mutually beneficial changes aimed at maximizing value creation may still be passed by having a clear and universally agreed business case, strong communication and understanding between partners, and a single point of authority for making project decisions (APM, 2007). Additionally, a single project owner should be appointed to serve as the single point of accountability for the project, in order to prevent 'blame-shifting' by the parties involved (Zwikael & Meredith, 2018). In large and complex initiatives, there may be the need to appoint multiple project owners, in which case they may report to a higher-level authority such as a program owner (Zwikael & Meredith, 2018).

Owing to the number of parties involved in these projects, the management of both contractual elements (Luo, 2002; Zhang et al., 2015) and relational elements (Ruuska et al., 2011; van den Hurk & Verhoest, 2015), as well as the complex interplay between these elements (Benítez-Ávila et al., 2018; Cao & Lumineau, 2015; Poppo & Zenger, 2002) become important concerns for the project governance system. Furthermore, to prevent conflicts, it becomes imperative to ensure that all parties receive accurate and identical project information in a timely manner, and that each party understands and acknowledges the implications of project decisions for their organization.

Accordingly, the primary governance challenges in Type III projects are: (i) choosing the appropriate partnering approach, whether joint ventures, PPPs, or some other structure (Brunet & Aubry, 2016; Volden & Andersen, 2018; Williams, Klakegg, Magnussen, & Glasspool, 2010); (ii) designing and maintaining the contracts and relationships between members of the project network (Ruuska et al., 2011); (iii) designing a project governance system that balances adequate representation of the partners with efficiency of decision-making (Nisar, 2013); and most importantly (iv) balancing the competing interests of the partners and bringing them into alignment with a mutually agreed vision of what the project aims to achieve (Clegg et al., 2002). To address the latter challenge, collaborative approaches such as Alliance contracting may be an effective means of unifying and focusing the efforts of all parties towards a shared goal (Ang, 2007; Clegg et al., 2002; Clifton & Duffield, 2006).

Type III projects are complex and their project governance systems need to be studied from a multitude of theoretical perspectives, such as: (i) network theory to understand how the multi-organizational project network can be governed in the most efficient manner and to maximize its effectiveness (Adami & Verschoore, 2018; DeFillippi & Sydow, 2016; van Fenema et al., 2016); (ii) stakeholder theory to understand and manage the interests and expectations of project partners (Cuppen et al., 2016; De Schepper, Dooms, & Haezendonck, 2014); (iii) TCE theory to examine how the project governance system can be organized in the optimal manner and how contractors and suppliers can be selected (Chen et al., 2018; Winch, 2001); and (iv) institutional theory to examine the institutional contexts of project partners and how they may be reconciled in the context of the temporary project organization (Morris & Galdi, 2011; Zhang et al., 2015).

6. Conclusion

Despite the important contributions of previous studies in explicating the origins of project governance (Ahola et al., 2014; Biesenthal &

Wilden, 2014), the literature has yet to present an internally consistent and widely accepted conceptualization of project governance (Lechler & Cohen, 2009; Levie et al., 2017; Zwikaël & Smyrk, 2012, 2015). Although the project governance literature is significantly fragmented, we suggest that this is characteristic of a developing field (Joslin & Müller, 2016a; Locatelli et al., 2014; Samset & Volden, 2016) that is still finding its roots and exploring the 'theoretical solution space'. Building on the findings of previous reviews, the present study conducted a systematic literature review of the academic and professional literatures on project governance to shed new light on its definition, theoretical underpinnings, and forms. We hope that the findings of this research will facilitate the development of a consensus on the fundamental aspects of project governance and spur further conceptual and empirical research in this important domain.

This research also sought to elicit insights from the literature on the role of project governance in supporting the implementation of organizational strategy through projects. If projects exist to implement organizational strategy (APM, 2011; PMI, 2016; Serra & Kunc, 2015; Thorp, 2007), and project governance is the system by which projects are directed and controlled (McGrath & Whitty, 2015), then it follows that effective project governance must play a central role in realizing organizational strategic objectives through projects (Hazard & Crawford, 2004; Musawir et al., 2017). However, outside of a few important contributions (Artto et al., 2008a; Hjelmbrekke et al., 2014; Morris & Jamieson, 2005; Thiry & Deguire, 2007), there is a dearth of guidelines on *how* the project governance system can actually achieve this. We hope that future studies will build on the findings of this research to address this important gap in the literature.

Furthermore, building on the typology of interorganizational projects developed by Ahola (2018), we proposed a typology of projects comprising three generic project structures and discussed how their characteristics influence the development of a suitable project governance system. We hope that this typology would contribute towards a contingency perspective of project governance and would help future studies link their project governance guidelines to a particular project context.

The accelerating interest in project governance is a hopeful sign that this field is fertile grounds for future research that has the capacity to make meaningful theoretical and practical contributions both within and beyond the project management discipline.

6.1. Future research directions

6.1.1. Direction 1: developing a mainstream model of project governance

Further research is needed to develop, first and foremost, a taxonomy for project governance in order to facilitate the clear transmission and synthesis of ideas in project governance research. Additionally, there is a need to elucidate in precise terms the fundamental elements of a project governance system, irrespective of the contextual factors of the project(s) in question. To this end, PMI (2016)'s conceptualization of project governance may serve as an important starting point. Furthermore, there is a need to explore the theoretical and practical justifications as to whether project governance should be liable to pursue the goals of the funding organization solely or of all stakeholders simultaneously (Müller & Lecoivre, 2014). The present study contributed towards this discussion and future studies may build on it further.

Subsequently, there is a need to develop a mainstream model of project governance. A major challenge in this regard is that projects are inherently temporary and unique undertakings, which means that the optimal governance arrangements may vary from one project to another (Aubry, 2016a; Zwikaël & Smyrk, 2015). There have been some important contributions towards a coherent conceptualization of project governance, most notably by Müller and colleagues (Müller, 2009; Müller et al., 2015, 2016b, 2014; Müller & Lecoivre, 2014) as well as by Too and Weaver (2014), PMI (2016), and APM (2011). Although these conceptualizations do not agree entirely, they do possess some common

fundamental characteristics (Musawir et al., 2016) that can serve as the ‘seeds’ around which a theoretically and empirically robust conceptualization of project governance would hopefully crystallize.

6.1.2. Direction 2: expanding the scope of project governance beyond the project life cycle

Another important insight from the literature is the need to expand the scope of project governance beyond the project life cycle (Locatelli et al., 2014). The involvement of project governance must range from concept to cash (Thorp, 2007), i.e. from the point when the project is conceptualized to the point when benefits are realized. Of particular importance is the ‘front-end’, i.e. the project ideation, appraisal, and selection stages (Morris & Gernaldi, 2011). Decisions at these early stages have the greatest overall impact on subsequent project execution and success (Hellström, Ruuska, Wikström, & Jåfs, 2013; Williams et al., 2010; Williams & Samset, 2010), especially for innovation projects (Arto, Kulvik, Poskela, & Turkulainen, 2011; Davies et al., 2014). Hence, a well-defined project governance system, which includes portfolio management (Too & Weaver, 2014), must already exist well before project initiation to ensure that project opportunities are correctly identified and the right projects are selected (Shiferaw & Klakegg, 2012).

Similarly, various studies emphasize the need for governance at the ‘back-end’, i.e. the phase after project delivery that involves stakeholders utilizing project outputs to generate outcomes (Zwikael & Smyrk, 2012). Here, the role of project governance is to ensure that the benefits envisioned in the business case are realized (Badewi, 2016; Marnewick, 2016). This involves integrating benefits realization management processes into the project governance system and defining clear responsibilities and accountabilities for benefits realization (Musawir et al., 2017; PMI, 2019). Further research is needed to examine the role of project governance at both the front-end and back-end of projects.

6.1.3. Direction 3: leveraging emergent strategies in projects

An important dimension of the discussion on strategy is deliberate versus emergent strategies. Young et al. (2012) observed that strategy discussions in project management still subscribe to the classic stable model of strategy that involves a set of long-term goals. This model of organizational strategy is outdated as the modern reality of strategic management is characterized by uncertainty and frequent strategic reformulation (Young et al., 2012), in order to adapt to shifting priorities and the changing organizational environment (Andrews, 1971). Hence, strategy formulation ought to be viewed as an iterative learning process (Mintzberg, 1978), which entails a shift in the role of project, program, and portfolio managers from passive followers, seeking to align projects with existing strategic plans, to active entrepreneurs, contributing to the strategy formulation process in light of new insights acquired during project implementation and shifts in the organizational environment (Young et al., 2012).

Integrating both approaches, Morris and Jamieson (2005) suggest that projects and programs have a two-way relationship with organizational strategy, where the latter influences the former through ‘deliberate’ formal strategic plans, while the former can influence the latter through ‘emergent’ strategic considerations. While deliberate strategies are necessary for providing clarity of objectives and a sense of direction to projects (Morris & Jamieson, 2005), emergent strategies help integrate the ground realities and evolving project environmental factors into the overall strategy (Löwstedt et al., 2018), which may be especially important in the context of projects in turbulent external environments (Kopmann, Kock, Killen, & Gemünden, 2017) and projects with a high level or autonomy paired with low level of relatedness to their parent organization (Vuori et al., 2012). Further research is needed to understand how and under which circumstances emergent strategies form, how they are relayed to the strategic management function, what are the organizational enablers for the development of emergent strategies, and what is the overall impact of emergent strategies on both efficient project delivery and benefits realization.

6.1.4. Direction 4: linking academic and professional literatures on project governance

Our findings corroborate the views of Morris (2016) that the leading knowledge generators in the project management field are practitioners rather than academicians. Although the academic literature on project governance is comparatively more voluminous, it is fragmented and still building its conceptual foundation, whereas the professional literature comprises standards for best practices (APM, 2011; PMI, 2016). Hence, the former seems to be lagging behind the latter. Furthermore, with the exception of a few highly influential publications such as Müller (2009) and APM (2011), the academic and industry literatures seem to have developed largely independently. This may be a symptom of the larger trend of project governance publications branching out sporadically from a multitude of largely disjointed perspectives rather than from a common mainstream view. Further research should seek to bridge the gap between academic and professional literatures on project governance. We advocate a closer collaboration both between and within the two literatures. This would involve examining the theoretical basis for project governance best practices proposed in the professional literature and empirically testing the effectiveness of these practices. Conversely, best practice guidelines should evaluate and incorporate relevant findings from the academic literature. A combined effort is needed to make meaningful advancements in project governance theory and practice.

6.2. Strengths and limitations

A strength of this study is the use of a systematic design that seeks to limit selection bias in the inclusion of primary studies in the review. Also, this study addressed a common limitation of literature reviews by including prominent books on project governance (Winch & Leiringer, 2016). Furthermore, in order to provide a more inclusive overview of project governance, this study included publications from both academic and professional literatures. This allowed for the comparative analysis of the two literatures in order to identify the extent to which the two are interrelated.

A limitation of this study is that, due to resource constraints, the review of the professional literature had to be limited to core standards and practice guides. Various other publications, such as conference papers and white papers, could not be included. However, we suggest that: (i) such publications are often not peer-reviewed and may not be suitable for inclusion either way, and (ii) the core standards and practice guides should, ideally, represent a culmination of the best ideas presented in these publications. Therefore, inclusion of these standards and guides, which bear the additional advantage of being peer-reviewed, should provide a reasonable representation of the professional literature. Another limitation stems from the diversity and vastness of the literature on project governance. Naturally, we do not claim that this study represents every project governance publication. However, every attempt was made to include as many important and relevant publications as possible in an unbiased manner.

Conflict of interest Statement

There is no potential conflict of interest with respect to this research or its publication.

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