

Social capital in project-based organizations: Its role, structure, and impact on project performance[☆]

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Abstract

The aim of this study is to provide evidence about the role of social capital within project-based organizations. Our assumption is that the social capital of project units increases knowledge integration, producing in turn high levels of performance at the project level. We collected primary data via sociometric questionnaires on 54 projects in the construction field. The analysis has been conducted to study the distinctive structural configuration of projects' social capital, among which we emphasize the role of network cohesion and network range. Our results provide evidence that levels of project performance are significantly associated with the particular structure of projects' social capital.

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1. Introduction

Organizational literature argues that project-based modes of organizing and controlling work are a response to changing contextual factors (DeFillippi and Arthur, 1998; Powell, 1996). In particular, these modes' fluid and temporary nature is seen as a means of bringing about organizational change as well as responding to the increasingly complex environments that organizations are faced with as a result of the high pace of technological development in many of the innovative sectors. Thanks to their ability to overcome typical permanent organizational inertia and achieve organizational change or renewal, project-based organizations (or PBOs) have become more noticeable in a range of industries.

In such organizations, projects do not simply occur against a backdrop of relatively established, routine activities. Instead,

they constitute the organization, creating a scenario in which knowledge diffusion and emergent working practices are likely to be the result of a complex interplay between structural and environmental project conditions and the role played by each individual who takes part in the project itself. Within temporary organizations, teams represent group of people with well-specified objectives and in which members are aggregated in order to bring together individuals and their resources. The complex environment often requires frequent interactions that concern not only members of the same project, but also individuals affiliated with different projects. A better understanding of how groups and projects gather access to tangible and intangible resources may come from studying these patterns of interaction, as well as their overall structure. The way individuals and groups of people are linked, creating a system of interdependent social exchanges between partners who are

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called upon for tangible and intangible resources, is here referred to as project social capital.

While prior literature devotes considerable attention to formal multi-project management arrangements (Cusumano and Nobeoka, 1998), there is a dearth of study on the benefits that informal social exchange relationships may have for a number of organizational outcomes. The aim of the present paper is to explore whether and how a project's social capital has an impact on its levels of performance. Our assumption is that the structural properties of social capital might have important performance implications for projects. In particular, we analyze the structural configurations of projects' social capital, among which we emphasize the role of cohesion (Burt, 1992; Fernandez and Gould, 1994) and diversity (Burt, 1992). The level of cohesion of project social capital accounts for how strongly interconnected project members are, and is generally used to highlight the degree of constraint of actors as network members. The level of diversity of project social capital, also known as network range, considers how different the partners involved in social exchanges are, taking into account the prevalence of cross-boundary social interactions between projects. Project social capital has thus range to the extent that project members spread their exchange social relationships across multiple areas of expertise.

The occasion to bring these theoretical issues to bear on the actual analysis of social capital of temporary projects is provided by network data that we have collected on 54 projects in the construction industry.

Our argument proceeds as follows. The next section presents a literature review on project-based organization and inter-project relationships, introducing the concept of project social capital. The third section provides information on our research design, and discusses issues related to data and measurements. In the fourth section we report the results of our analysis. A final discussion section concludes the paper.

2. Theoretical background

2.1. The project-based organization

The PBO is an organizational form in which the project is the primary unit for production organization, innovation and competition (Hobday, 2000). The literature has broadly revealed that PBOs are especially needed in significantly customized industries, such as film-making and media (DeFillippi and Arthur, 1998; Sydow et al., 2004), complex products and systems (Hobday, 1998), software development (Ibert, 2004), construction (Bresnen et al., 2004), engineering design (Cacciatori, 2008), and biotechnology (Ebers and Powell, 2007).

Numerous benefits have been associated with the adoption of a PBO. They refer to better processes, control and lead-time reduction (Verona and Ravasi, 1999), higher output quality (Bresnen, 1990), increasing ability to respond quickly and flexibly to each customer's needs (Hobday, 2000; Mitzberg, 1983) and to innovate in collaboration with clients and suppliers (Pinto and Rouhiainen, 2001). Overall, this organizational model allows a much more flexible application and integration

of different types of organizational knowledge and skills, learning within the project boundary and coping with emergent properties in production, project risks and uncertainties (Grabher, 2002a; Keegan and Turner, 2002).

In spite of such benefits, PBOs also present considerable drawbacks in performing routine tasks, achieving economies of scale and coordinating cross-functional resources (Hobday, 2000). In addition, they show difficulties in promoting organization-wide and project-to-project learning (DeFillippi and Arthur, 1998). This happens because knowledge generated in the project activities is embedded in tacit experiences of the group members and is therefore difficult to consolidate and spread at the organizational level (Prencipe and Tell, 2001). Projects often are also quite different, and solutions developed in the context of one project can seldom be applied to another (Bresnen et al., 2003). Finally, knowledge is at risk of being dispersed as soon as a project is dissolved and members are assigned to different tasks or teams (DeFillippi and Arthur, 1998).

2.2. Inter-project relationships and project social capital

Even though projects are autonomous from each other most of the time, inter-project coordination is a desirable thing especially when the adoption of new technologies or development of new project routines could be used and applied elsewhere in other projects of the organization. As a consequence, whether PBOs live on their ability to mobilize and conduct projects, for organizational performance as well as for that of other projects some key managerial tasks are needed to integrate project-based learning into the organization (Gann and Salter, 2000).

Organizational projects are highly autonomous units that, especially in knowledge-based organizations, represent the way through which organizations seek to achieve innovation and new knowledge production. Project units allow dividing labor within organizational boundaries and giving firms the opportunity to focus on fewer but highly customized activities, but producing at the same time a high degree of differentiation into organizational sub-systems (Lawrence and Lorsch, 1967). Such differentiation is reflected, for example, in the partial vision of whole organizational activities, potential conflicts among projects, and different priorities that characterize scheduled activities and the project agenda. This approach to organizational design complicates the management of interdependences across projects performing different, well-specialized tasks and activities. In sharp contrast, internal learning and knowledge creation via long-term changes in explicit and tacit knowledge in their own areas of work are essential for organizations in order to achieve an adequate profitability and to stay competitive in knowledge-based contexts. The activities of each project must be integrated and the access to the knowledge and competences residing in other projects is required to respond appropriately to the environment.

Staffing solutions enhance collective learning in organizational project teams (Borgeon, 2007). The diversification of project-team composition and individual characteristics of its

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