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Knowledge Risk Management in the Social Impact Project Finance (SIPF). Evidence from an Italian Experience

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Abstract

The purpose of this paper is to extend the research on Knowledge Risk Management (KRM) in the field of project finance. In particular, the approach to knowledge risks in the project risk management is investigated. To achieve this goal, case study methodology is applied, considering the first Social Impact Project Finance (SIPF) initiative in Italy in 2015. Data has been collected conducting an online survey aimed at investigating ways of approaching knowledge management and knowledge risk management of the parties involved in the SIPF. Findings underlined that, despite some awareness of knowledge risks, parties involved in SIPF have divergent perceptions on the effects of the latter on the project success. This confirms the need for a more systematic approach and specific tools and techniques for this type of risks. Since this is a single case study, in order to generalize its findings, future studies should broaden and deepen the line of research by considering additional types of projects and different parties involved, including reporting the experience of different countries.

Keywords – Social Impact Project Finance (SIPF); Project Risk Management; Knowledge Risk Management (KRM); Case Study.

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1 Introduction

“The raising of funds on a limited-recourse or nonrecourse basis to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project”. With this definition, Finnerty (2007, p. 1) describes the main features of the project finance, which refer to it not only as an “unconventional” way to finance a project, but as an operation that requires a balance between accurate financial engineering in the allocation of risk and commensurate remuneration of the involved parties. Over the years, the scientific body of literature on this issue has been implemented by an increasing number of contributions, both from the academic and professional worlds (Esty & Matysiak, 2004; Pinto, 2017 et al.). In a recent commented bibliography (Kayser, 2013, p. 729), the main strands of project finance research progress have been identified in: 1. Legal framework of project finance; 2. Project risk measurement and allocation; 3. Project selection methods; 4. Globalization of project development; 5. Projects under the Kyoto protocol and renewable energy projects”. The present paper seeks to contribute to the second strand of those just mentioned above, namely “project risk measurement and allocation”, essentially in two ways: first of all, dealing with a specific type of project finance, which aims to carry out projects of social and environmental interest; secondly, considering a particular type of risk in project risk management, i.e. the risks associated with knowledge management, those that Perrot has defined “to measure of probability and severity of adverse effects of any activities engaging or related to somehow to knowledge” (Zieba & Durst, 2018). Risk is a crucial factor for project finance as it can lead to unexpected changes in the project's ability to repay costs and ensure dividends for shareholders. Project finance can be conditioned by risk in every phase of its implementation. The risk profiles that may arise during the life cycle of the project can be multiple, and can vary both with respect to the level of maturity of the project, and with reference to the initiative that it is intended to complete: “[...] risk is a crucial factor in project finance since it is responsible for unexpected changes in the ability of the project to repay costs, debt service, and dividends to shareholders” (Gatti, 2012, p. 43). When considering projects with social impact, accurate project risk management becomes even more crucial, “[...] decision-agents need to identify, analyze and evaluate the risks in all project life cycle and use their organizational structure and administrative practices in order to act on the risks in favor of the project”. (Rodrigues-da-Silva, & Crispim, 2014, p. 943). With respect to this, considering a further type of risk usually not included in project risk management, ie knowledge risks, could help to strengthen the risk management of that risks which may threaten the success of the project. In this analysis, an attempt is made to respond to this call, considering a case study on an important Social Impact Project Finance

experience, implemented by UBI Banca in Italy during 2015. More specifically, the research question to which this paper intends to answer is the following:

RQ1. How does SIPF's parties handle the issue of Knowledge Risk Management?

To answer this research question, an online survey was carried on involving members of the offices belonging to the SIPF parties, i.e. UBI Banca, the special purpose vehicle (SPV) owned by Torino Sociale Cooperativa Sociale Onlus (TSC Onlus), the Municipality of Turin and the local health authorities (ASLTo1 and ASLTo2). A study of this type could help to identify further possible fragility of the projects, shedding light on the level of actual awareness of the project actors with respect to the risky side of the knowledge that is created and exchanged during the life of the project. In recent years, various scholars have dealt with the risks associated with knowledge and their management - in a term Knowledge Risk Management (KRM) - and the fields of application of KRM have been different.

For these reasons, a research on the allocation of risk between the different parts of the project, including a new type of risk (knowledge risks), could be considered timely and necessary (Lu et al., 2015), and the present study responds precisely to this call.

In more details, the remainder of this paper is organized as follows. In the next section a review of the main literature is provided, third section is dedicated to explaining the methodology with which the study has been conducted, while the last part of the paper contains the discussion of results.

2 Literature review

2.1 Knowledge Management (KM)

The new version of ISO Standard 9001:2015 Quality Management System Requirement, issued in September 2015, has for the first time introduced the obligation for organizations to consider knowledge as a resource. This indicates a renewed centrality of knowledge within the quality management of the over one million certified organizations in the world (Wilson & Campbell, 2016). Not surprising, in fact, that knowledge management (KM) is now an integral part of the policies, strategies and processes of organizations of all types around the world. KM has been defined as a systematic and organized approach that supports knowledge mobilization with the aim of implementing the decision-making process and guiding actions towards organizational success (Hsu & Shen, 2005). Over the years,

scholars contributed to providing different and multiple definitions of KM, also through useful literature reviews. Alhawari (2012), for example, recalls KM definition by Holsapple and Joshi according to which it refers to the efforts that an entity makes to cultivate and expand the available knowledge in order to obtain added value; or also the definition of Alavi and Leidner that KM is a systemic process for acquiring exchange and effective use of knowledge in organizations; or the one provided by Martinez which describes KM as the art of transforming information and intellectual assets into a consolidated value for organizations. Jennex (2005) proposes instead a definition of KM deriving from the joint review of the KM and organizational memory (OM) literature according to which it allows a selective application of that knowledge deriving from previous experiences in order to make the decision-making system more effective in the present and in the future. Despite this multitude of contributions, even today, a unique definition of KM does not yet exist. Researchers around the world will continue to implement research in this field, enriching the definition of KM with new elements and different points of view; as verifying Web 2.0 and Big Data effects on KM systems implementation (Orenga-Roglá & Chalmeta, 2019); or considering benefits of social media information on KM (Nisar, Prabhakar & Strakova, 2019); or analyzing the relationship between KM and systematic innovation capability (Gloet & Samson, 2019).

2.2 Knowledge Risk Management (KRM)

“The Management of Knowledge Risks: What Do We Really Know?” (Durst et al., 2018). This question represents the state of the art of research on risks related to knowledge, which leads to detect, in the extant literature on this topic, a paucity of contributions compared to the several theoretical and empirical studies on Knowledge Management (Tellis, 1997; Massingham, 2010; La Torre, 2020) and Risk Management (Muriana et al., 2017). Indeed, what has characterized management literature and research for decades is the tendency to emphasize the “bright side” of organizing, searching more for excellence, and tendentially neglecting organizational decline or failure (Massingham, 2008). But actually, organizations, regardless of type and size, may incur in a series of situations in which the application of knowledge, or its disappearance, could expose them to a number of risks related to this resource (Durst et al., 2018). Knowledge risks refer to the probability of any loss attributable to identification, storage or protection of knowledge that may decrease the operational or strategic benefit of an organization (Perrot, 2007), “a measure of the probability and severity of adverse effects of any activities engaging or related somehow to knowledge that can affect the functioning of an organization on any level” (Zieba & Durst, 2018, p. 256). Considering human aspects, knowledge risks, those

originating within the organization (Durst & Zieba, 2017), may disturb, in part or in whole, the process that goes from knowledge acquisition to its application in organization's operational practice. Different types of knowledge risks have been identified, described and analyzed based on their potential harmful for organizations. Due to the risk of knowledge loss, organizations may encounter, for example, negative economic and organizational consequences, in terms of increased human resource costs, decreased productivity or general bad mood and de-motivation of employees (Cascio, 1993; Droege & Hoobler, 2003). The risk of knowledge waste refers to a situation in which an organization does not make use of the available and useful knowledge in its possession, this risk manifests itself in the form of reinvention, lack of system discipline or dispersion; with exposure to Knowledge spillover risk, however, valuable knowledge can escape from the organization for the benefit of its competitors (Durst, Zieba & Ferenhof, 2018). Therefore, all these types of risks, in different ways, and with different intensities, can damage organizations, especially knowledge-based ones. Nevertheless, scientific production on Knowledge Risk Management (KRM) is still in its infancy; the oldest publication is from 2001 and the most recent one is from 2014, with an intensification of research in 2012 in particular (Durst et al., 2018). Durst and Zieba (2017) first proposed a knowledge risks taxonomy based on their precise identification, description and analysis, also arguing about the importance of a KRM approach, which dealt with knowledge from a holistic point of view, i.e. considering both sides of the coin: this would help organizations to better manage their critical knowledge to effectively master present and future challenges. The risk of Knowledge loss, for example, can be really insidious because it is inevitable in response to phenomena such as employee turnover - voluntary or involuntary - or accidents such as death or illness, or in case of knowledge loss due to defections of the technological environment. The exposure to the risk of knowledge attrition occurs when the knowledge becomes progressively obsolete or corrupted due to new inventions or due to inappropriate or non-timed use of knowledge. When valuable knowledge for the organization escapes from it to the advantage of competitors, the risk of knowledge spillover is outlined; instead, the organization is exposed to the risk of knowledge waste in the event that knowledge - available and potentially useful for the organization - is not used; when there is intention to hide or retain knowledge required by a third person, the risk of knowledge hiding comes instead. Before Durst and Zieba (2017), therefore, the few works on this topic have dealt with it in a rather fragmented way, and far from a detailed description, classification and distinction of the different knowledge risks. This is demonstrated by contributions in which, for example, knowledge risks are treated individually (Durst et al. 2018; Jennex, 2005; Lu et al. 2015; Ahmad et al., 2014; Crispim et al., 2019; Droege et al. 2003); or only with respect to certain operational contexts such as knowledge sharing (Neef, 2005) or SMEs (Durst et al., 2016). Definitely, scientific production just above described has not yet succeeded in developing a structured research strand, both

because these studies have tended to deal with one or two knowledge risks at time - e.g. knowledge hiding, knowledge loss or knowledge spillover (Durst & Wilhelm, 2013) - and because they have not considered exposure to knowledge risks based on organization type and tools eventually used to counter their effects (Durst et al., 2018).

2.3 Project Risk Management (PRM)

Generally, the concept of risk refers to an eventuality that has not yet occurred, which should give rise to questions in project managers such as: *“What problems could I encounter implementing the project? And what actions could I take to avoid them?”* (Cervone, H. F., 2006). Therefore, to effectively achieve the project goals, an accurate risk approach should be implemented, ie a project risk management that can ensure a series of benefits such as highlight the priorities, strengths and weaknesses of existing and new projects; improve project management processes; and identifying warning signs before actual problems occur and result in repeated shortcomings in future projects (Kliem & Ludin, 1997). From current trends, some critical success factors of project risk management emerge. Recent studies have for example highlighted the importance of focusing attention on the project planning phase to better identify and mitigate the risks that would then be more difficult to face at execution stage (Shayan et al., 2019). In other cases, principles of decision theory on which risk analysis tools are based are identified, as well as for the stakeholders’ perspective (Hartono et al., 2014); and, in others, organizational maturity is considered crucial for the effectiveness of project risk management practices (Crispim et al., 2019). But projects are managed by people. People enter data, formulate hypotheses and develop strategies; in a nutshell, they manage knowledge. People’s assumptions and perceptions may be inaccurate and unreliable, and for this reason, knowledge management practices should be integrated into project risk management. For some time, several authors have noted the existence of a relationship of interdependence between risk management and knowledge management, highlighting how the failure of many projects is largely linked to lack of knowledge - or bad distribution - in the project management team (Neef, D., 2005); and indicated the Knowledge Risk Management (KRM) as a possible solution to best solve the problems and shortcomings related to conventional risk management methods (Massingham, P., 2010). In this regard, Alhawari (2012), in proposing a framework dedicated to the risk management of IT projects, found that many authors contributed in this regard, presenting experiments that integrated knowledge management (KM) tools and techniques into risk management (RM); by the Intelligent Risk Mapping and Assessment System, containing some KM techniques (Kayis et al., 2007), to those who have developed methodologies based on fuzzy knowledge

representation models (Kayis et al., 2007); or to other cases in which creation of knowledge group are proposed starting from the initial planning phase of the project (Jennex et al., 2012).

The present work is placed precisely in this last research strand, seeking to contribute to the integration of KM tools and techniques into RM processes, in the particular field of project risk management and with reference to a particular tool, namely social impact project finance (SIPF).

3 Research method

The present paper is based on a single case study, namely the first Social Impact Project Finance initiative in Italy. Definition of social impact project finance (SIPF) is borrowed from Zheng Lu et al. (2015, p. 304), which defines it as a “financing method of infrastructure projects by which public sector makes commitment to pay additional yield for improved infrastructure services, or other social impacts, which in turn motivates the private sector to better design, construct, operate, and maintain infrastructure assets”. Italian Social impact investment ecosystem it is characterized by numerous strengths but also critical points that should not be underestimated. Faced with a strong and lasting tradition in the field of social finance, the market for social impact investments, although potentially ready for satisfactory development, is held back by some peculiarities of the socio-political and institutional system that make it difficult to identify the best choices for which allocate important financial resources (Maduro, Pasi & Misuraca, G., 2018). The specific SIPF in this paper analyzed provided for the total financing of approximately 8 million euros granted by UBI Banca to a special purpose vehicle (SPV), owned by Torino Sociale Cooperativa Sociale Onlus (TSC Onlus), a local not-for-profit, in partnership with the City of Turin and the local health authorities (ASLTo1 and ASLTo2) for the redevelopment of one of its health care homes for elderly, and for the additional support to the Alice Project, establishing a network of services for the local community. The goal of this initiative was to increase the number of care homes from 117 to 144, maintaining them over time, besides delivering a minimum of 400 hours of home care per year - equalling care services to around 100 elderlies - by the Alice Project (Maduro, Pasi & Misuraca, 2018). A new context, therefore, for the application of project finance, in which the non-profit subject relies on a cash flow generated by the provision of welfare services. This initiative is a one-of-a-kind operation, not only for its financial structure, but also and above all for a new form of collaboration that provides for the increasingly unavoidable joint involvement of the public component (Municipality of Turin), and private (banking intermediary) and the private social intermediary (TSC Onlus), to develop forms of social innovation in a context of

structural decline of public resources destined to welfare services (Maduro, Pasi. & Misuraca, 2018). Data collection was carried out through an online survey targeted at project managers of involved parties, respectively, the extraordinary finance office, for the project sponsor, the project real estate office, for the lending bank and the public component represented by the municipality of Turin. Of the parties involved in the project, the banking intermediary and the private-social participated in the survey. Questionnaire has been designed to assess the presence of knowledge risks in the risk management system of the project considered in our analysis. For this reason, it was divided into three sections, the first of which investigates management of knowledge within the project, while with the second and third questionnaire focuses on knowledge risks, their potential and actual effects on the project and on the possible measures for their mitigation.

According to a recent study on knowledge risk management in the public sector (Durst, Lindvall & Bruns, 2018), we refer to the indications given by some of the leading experts in case study methodology, namely Levy, Stake e Yin (Tellis, W. M., 1997), who have developed robust methodologies in this field. Among them, Yin (1994) proposed a procedure for conducting case study and analyzing its evidence. This procedure is composed of a series of stages, which refer to: a) data collection; b) preparation and distribution of the questionnaire; c) conducting interviews; d) analyze case study evidence; e) develop conclusions, recommendations and implications deriving from case study evidence. In this section, we followed steps a) and b); while in the following sections, the analysis of case study evidence and the development of conclusions will be performed.

4 Findings

Results of the present analysis allow to answer the research question “How does SIPF’s parties handle the issue of Knowledge Risk Management?” as summarized below:

Knowledge management in the SIPF

In regard to general knowledge management in the SIPF, the presence of both tacit and explicit knowledge mainly concentrated in a few subjects was detected during the project. Nevertheless, for both parties involved, attention level to knowledge management was high and accurate, as well as the knowledge sharing, even if this last seems to happen in a small group of people.

Knowledge Risk Management (KRM) in the SIPF

To address KRM in the project, parties involved in the SIPF were provided with a list of the most well-known knowledge risks in which there was also an explanation of their main characteristics. Hence, the participants were asked which of the knowledge risks presented were of their knowledge. The parties involved in the SIPF seem to have a good awareness of all types of such risks, but while the lending bank does not consider any of the risks of knowledge potentially damaging to the success of the project, the TSC Onlus identifies the most threatening risks for the project in knowledge waste, in knowledge spillover and in the risks associated with knowledge digitization. Respondents were also asked what knowledge risks the SIPF was exposed to and what were actually revealed during the project phases. Also in this case, the responses of the parties involved in the project seem to have a different perception: for the bank, the only knowledge risk actually revealed during the project was that of knowledge outsourcing, ie the risk connected to loss of knowledge as a result of any outsourcing operations, specifically during the due diligence phase. For TSC Onlus, on the other hand, the knowledge risks that affected the project was that relating to the improper application of knowledge, influencing precisely the relationship with the lending bank, in the specific initial analysis phases of the project, defining the contractual terms of the loan.

KRM approach in the SIPF

Against the presence of knowledge risks in the SIPF, involved parties are expected to have knowledge risk prevention and mitigation measures integrated into the project risk management. To verify this, respondents were presented with a list containing some of the most known and used knowledge risk mitigation tools, from the S.W.O.T. to analysis with checklists and periodic meetings. For the lending bank, as well as for TSC Onlus, the latter were indicated as a defense against knowledge risks in the SIPF. Different answers were provided with reference to the report dedicated to the knowledge risk management of the project. The lending bank has produced a technical and insurance legal due diligence report; while TSC Onlus documents risk management and external business review.

5 Conclusions

“Project risk management is regarded as a process that accompanies the project from its definition through its planning, execution and control phases up to its completion and closure” (Urbański et al., 2019, p. 24); risk management has been designated as one of the eight main areas of the Project Management Body of Knowledge (PMBOK) by the Project Management Institute, which is the largest

professional organization dedicated to the project management sector; most project manager training programs include risk management's courses; in the currently accepted vision of project management as a process, project risk management (PRM) is considered as a process that accompanies the project from its definition through its planning, execution and control phases up to upon its completion and closure (Raz & Michael, 2001, p. 9).

From these assumptions, we can therefore understand how risk management plays a role of absolute importance for the success of a project. For this reason, it is important to constantly implement the accuracy of the PRM, correctly applying the techniques and tools already available and perhaps also looking for innovative solutions by experimenting with new knowledge. This paper is exactly in line with these statements, having in fact proposed the introduction of a further type of risk in the PRM, namely knowledge risks. In the particular case of this study, that is the case of a SIPF, having introduced this type of risk in the PRM of a public-private partnership project, has made it possible to identify critical points that with traditional risk management techniques and tools they would hardly have emerged, such as the need for greater clarity and correctness in the moment of sharing knowledge between the actors of the project (see the findings section in this paper).

For future research, it is hoped to apply a PRM that also considers knowledge risks to always different types of social investment, because they are "financial experiments" that involve heterogeneous subjects but who then have to collaborate in the success of a common project with implications also for the community as a whole.

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