

Article

Disclosing the Tacit Links between Risk and Success in Organizational Development Project Portfolios

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Abstract: Project portfolios aim to impact organizational strategic goals, influencing both the organization's business model and its processes. Nonetheless, the actual impact is dependent on the portfolio's success, which is affected by the materialization of risk factors. This study aims to examine the tacit conceptualization of project portfolio risk as a risk measure explicitly based on project portfolio success itself. In order to focus on the portfolios of organizational development projects, Social Representation Theory was adopted to analyze empirical evidence from twenty-eight semi-structured interviews conducted with project portfolio practitioners. Findings showed that strategic fit, future preparedness, and stakeholder satisfaction were dimensions of success within which project portfolio risk could be conceptualized. Additionally, results evidenced that risk factors influenced project portfolio success through systematic and non-systematic impacts on project portfolio outputs, and also had direct impacts on project portfolio outcomes. This paper provides empirical evidence to back up the conceptualization of project portfolio risk explicitly oriented to portfolio success as a multidimensional risk measure. It represents a new avenue for conducting portfolio risk analysis for both practitioners and academics, orienting the decision-making process based on the portfolio success rather than only on the success of each project.

Keywords: project portfolio risk; risk management; project portfolio success; portfolio management; risk factors; organizational development portfolios



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1. Introduction

Increasing global competition and growing attention to environmental and social issues have led organizations to recognize that to be economically, operationally, and strategically sustainable, their business models and processes must be aligned with these competitive, environmental, and social changes [1,2]. In this regard, projects represent a common and suitable way to drive changes in organizations [1].

These organizational changes must fit into a coordinated cross-project structure that enables the organization to be competitive in the future while enhancing short-term performance and leading to long-term sustainability [2,3]. Project portfolios aim to achieve desired mid- or long-term organizational outcomes that impact business models and the processes of companies [2,4].

A project portfolio represents a set of projects and programs oriented towards achieving specific organizational objectives [2,5]. Portfolio management has been associated with the operationalization of organizational strategy [6], while seeking to address and integrate different stakeholders at the organizational level [7]. Thus, an appropriate project portfolio model can provide an opportunity to grow sustainably, improve strategic business performance, and achieve a sustainable competitive position in response to the changing environment in which organizations are immersed [2,8]. However, the portfolio's results

may not satisfy expectations due to the materialization of ‘risk factors’ [5,9]. In line with the above, the concept of sustainability has risk management as one of its recognized impact areas [9].

Risk is related to decision-making processes specific to each organization, being connected to all organizational levels [10]. For instance, within project-based organizations, Zhao et al. [11] put forward that there are risk factors at different levels, rather than just at the project level, which can affect both projects and other organizational levels. The risk management paradigm in project contexts has evolved toward a global view that goes beyond a project-circumscribed perspective [9,11].

In this regard, the existence of specific portfolio-level ‘risk factors’ [5,9,12] has been recognized; for instance, Bai et al. [12] identified 20 risks over the project portfolio life cycle, revealing that six of them can be considered critical portfolio risks. It has been additionally identified that a risk approach at the project portfolio level could allow higher effectiveness, leading to positive impacts on the ‘project portfolio success’ [13]. This could also help focus on the most relevant risks for the project portfolio and, in turn, achieve the expected impact on the organizational strategy [5,14].

The construct ‘project portfolio risk’ could be tacitly conceptualized as a measure of impact on ‘project portfolio success’ due to changes in ‘risk factors’ derived from different levels. This is aligned with the fact that the risk construct may be associated with the exposure concept, which indicates the amount or measure of impact on expected results or the volatility or variability in results due to changes in risk factors [15,16].

However, an approach based on the mentioned tacit conceptualization of ‘project portfolio risk’ is still barely studied. By contrast, financial success measures have been used to conduct the risk assessment of organizational investments in project portfolios [17–19] within a general management approach [20]; and project success measures, such as time or cost of each project within the portfolio, have been incorporated into risk assessments of projects considering the interdependencies that derive from the portfolio environment [21–23], which follows a project success view.

Therefore, from this background, the following research question was posed: How could ‘project portfolio risk’ be conceptualized as a measure of impact on ‘project portfolio success’ due to changes in ‘risk factors’?

Recognizing the diversity of contexts, attributes, and particularities among different types of project portfolios, this study focused on the portfolios of organizational development projects. This type of project portfolio embraces a mixed set of projects directly related to the firm’s strategy or corporate-level goals and organizational strategic impacts [24,25]. It aims to achieve a mid- or long-term organizational outcome and, consequently, positively impact business models and processes [2]. To that end, organizational development portfolios are structures that respond to emerging changes in the external and internal environment. Therefore, this type of project portfolio considers the state of the company itself, including the competitive environment, marketing priorities, changing consumer demands, requirements of production technologies, etc. [25,26].

This study takes the epistemological stance of a constructivism-founded scientific paradigm for organizing the research [27]. Twenty-eight semi-structured interviews were conducted and analyzed to capture the practitioners’ perspectives on ‘risk factors’ and ‘project portfolio success’ framed within the ‘project portfolio risk’ construct. For that reason, Social Representation Theory (SRT) was adopted as the theoretical lens.

The remainder of the paper is organized as follows. Firstly, a background on ‘project portfolio risk’, ‘risk factors’, ‘project portfolio success’, and SRT is presented. Then, the adopted research methodology is described. This is followed by the findings derived from the interviews, discussion of the main findings that emerged from the study, conclusions, limitations, and future work recommendations.

2. Literature Review

2.1. Risk in Project Portfolios

The conceptualization of risk derived from Modern Portfolio Theory, developed by Harry Markowitz in 1952, is presented as the seminal theory insofar as project portfolio risk is a concern [28]. Modern Portfolio Theory has been used to establish a parallel between financial portfolios and project portfolios, specifically focusing on risk incorporation into the project portfolio selection process [17,19], thus adopting a general risk management approach [20]. These studies are focused on the risk associated with financial results, generally defining the risk as a unidimensional measure. In this regard, the risk is associated with variations in the portfolio's financial results due to the variation derived from each project and, by considering the correlation between each pair of projects. In other words, total portfolio risk can be considered to be composed of independent project risk and interdependent project risk [19].

When looking for risk approaches oriented more towards project portfolio characteristics than general management, it has been posed that portfolio value cannot be measured only in monetary terms [13,29,30]. For instance, proposals oriented to integrate both monetary and non-monetary factors have been made [30]. To this end, a discrete comparison of alternatives has been explored [1,30], where attributes associated with the risk for each project are considered as criteria in the portfolio selection process. Other proposals have focused on estimating the risk as changes in the scope, time, or cost of projects due to some risk factor interdependency and project interdependency, or as changes in the cumulative cost of the projects within the portfolio [20,22,23,31]. Hence, a perspective on risk in which the 'project portfolio risk' is associated with the success of the projects within the portfolio is proposed here.

For this reason, these proposals have been developed under a project management approach [20], recognizing, in most cases, the multidimensional nature of project success in a way that tacitly considers the 'project portfolio risk' as a measure of impact on the success of the projects within the portfolio due to project interdependency and changes in project 'risk factors' during the project portfolio execution. For instance, considering interdependencies between projects, several studies have focused on how the risk is propagated across the projects within the portfolio [22,23]. However, portfolio-level 'risk factors' and the condition that the 'project portfolio risk' goes beyond the sum of the individual risk for each project within the portfolio, although highlighted, have not been explicitly incorporated into risk conceptualization under this approach.

Hofman et al. [5], Ghasemi et al. [9], and Bai et al. [12] present the identification and categorization of project-portfolio level 'risk factors' from a full spectrum of project portfolios. In addition, Ghasemi et al. [9] pose a risk assessment model oriented towards establishing the 'project portfolio risk' as the impact on the 'project portfolio success' as a unidimensional measure due to changes in project- and portfolio-level 'risk factors'. Thus, extending the fact that project portfolios represent the bridge between projects and organizational strategy, an alternative approach for 'project portfolio risk' emerges which would allow for incorporating the specific portfolio level into the analysis, i.e., portfolio-level 'risk factors' and 'project portfolio success' as the expected portfolio measures that are impacted by the 'risk factors'.

The adoption of this alternative approach oriented explicitly towards the portfolio level could help disclose the tacit role of the 'project portfolio risk' as the bridge between the project-management- and general-management-based risk approaches identified in the literature.

2.2. Risk Factors in Project Portfolios

Risk categorization contributes to the effectiveness and quality of risk analysis, as well as leading to a risk-based decision process [4,5]. Hence, different categorization schemes for 'risk factors' associated with projects within a project portfolio have been identified in the literature. These categorization schemes have mainly aimed at classifying 'risk

factors' by their sources. Alternative categorization schemes have recently been posed, for instance, the identification and categorization of critical risks to project portfolios over the life cycle [12].

According to the structured literature review conducted by Micán et al. [21], risk factor categories based on risk factor sources could be synthesized into four categories: (1) the Project Portfolio Management (PPM) level, considering aspects related to portfolio information management, conflicts at the portfolio level, and lack of portfolio management capabilities; (2) Project interactions, considering the resource interdependency between projects as 'risk factors' and the dependency of outputs between projects; (3) External conditions, in which are grouped 'risk factors' derived from external conditions to the parent organization; and (4) Organizational conditions, considering aspects related to organizational decisions or processes, including project management process and decisions related to the structure of the portfolio, which can influence the project portfolio results.

Alternatively, the conceptualization of systematic and non-systematic risks derived from Modern Portfolio Theory (MPT) has been adopted to conceptualize the 'project portfolio risk' sources [32,33]. This means that, to classify the 'risk factors' by the extent of their impact, the non-systematic risk is associated with individual risk contributions from each project risk factor, and systematic risk is derived from those 'risk factors' which have an impact on the whole project portfolio [17].

However, the representation of systematic risk has different interpretations; for example, Costa et al. [32] pose it as being exclusively associated with environmental factors, while Drake and Byrd [33] mention that, besides the factors of the environment, it includes the risk derived from the interdependency of 'risk factors' and project interactions as risk factor sources. In addition, although the conceptualization of systemic and non-systemic risk for project portfolios has been widely adopted for incorporating risk into the project portfolio selection process [17], it is scarcely considered for risk analysis in the project portfolio execution phase.

2.3. Project Portfolio Success

Five 'project portfolio success' dimensions are generally described in the literature [34,35]: (i) strategic fit, (ii) future preparedness, (iii) average project success, (iv) synergy exploitation, and (v) portfolio balance, where success dimensions i, iii, iv and v are based on the PPM goals defined by Cooper et al. [36] for portfolios of product development projects, which later were adopted for other types of project portfolios. Table 1 summarizes these five 'project portfolio success' dimensions.

In addition, the dimension related to economic success was incorporated in some works as a 'project portfolio success' dimension [34,35], while other publications regard this dimension as a business success dimension, and therefore a positive consequence of 'project portfolio success' more than a 'project portfolio success' dimension itself [37].

Table 1. Project portfolio success dimensions.

Success Dimension	Description
Strategic fit	The degree to which the project portfolio reflects the company's strategy, bearing in mind aspects such as structure, technology, or environment [34,37].
Future preparedness	Long-term benefits and opportunities offered by the project portfolio. This dimension is based on the creation of new markets, new or improved technologies, capabilities or processes, positive impacts on brand value or employer reputation, and the ability to adapt and react to technological or market changes [34].
Average project success	Associated with two main aspects: (1) the projection of performance measures, measured using criteria such as budget, schedule, quality, and customer satisfaction; (2) the market and commercial performance of each project, measured using financial performance criteria [34,35].

Table 1. *Cont.*

Success Dimension	Description
Synergy exploitation	Cross-project coordination includes synergies related to technologies, the market, knowledge, and resources [37,38]. However, practices focused on this dimension 'are not often put into practice due to the complexity of the numerous interdependencies within the portfolio' [37] (p. 809).
Portfolio balance	Short-term and long-term benefits, well-adjusted risk level, appropriate equilibrium between project types and between use of new and existing technologies, resource adequacy [9,34].

2.4. Social Representation Theory

Social representations can be defined as systems of cognitive elements—opinions, knowledge, and beliefs—particular to a culture, a social category, or a group, with regard to objects in the social environment [39,40]. Social Representation Theory (STR) was originally developed to analyze the relationship between individuals and society for psychological studies. However, SRT can be equally applied to understand the relationship between a subject and an object [40,41]. Thus, for instance, it has been incorporated to conduct qualitative analysis in different fields [39,42–44]. In this regard, the adoption of SRT has grown in different areas of knowledge, including the management field [41].

Three main orientations can be identified within SRT, which are [45] the sociogenetic model, the sociodynamic model, and the structural model. This research adheres to a sociogenetic model. According to the sociogenetic model, a social representation involves two distinct but complementary processes: anchoring and objectifying. Anchoring is defined as the process by which new information is interpreted by linking it with familiar knowledge. Objectification is defined as the process by which the object is reproduced and described in a concrete and selective manner [39,40]. The schematization of the object is defined as the figurative core [40].

In a sociogenetic model for SRT operationalization, monographic and qualitative approaches to data collection and analysis constitute the main methodological framework [40], and the researchers mainly opted for observations or interviews [45].

3. Research Methodology

3.1. Research Design

In this study, the project portfolio was considered to be an organization or an organizational subsystem. A constructivism-founded scientific paradigm for organization research was adopted. In organizational design science, the goal of research using this approach is to develop knowledge to guide design processes [27]. In the constructivist view of organizational design science, constructivist epistemologies and organizational design science complement each other to generate further knowledge [27].

SRT was adopted as the theoretical lens, adhering to a sociogenetic model for SRT operationalization. The constructs 'risk factors' and 'project portfolio success' were defined as objects, while practitioners were established as subjects, with a goal of understanding the relationship between the practitioners and their notion of what constitutes these constructs. In light of this, an exploratory qualitative research process was undertaken. Social representation was focused on describing the objectification of the two constructs under analysis: 'risk factors' and 'project portfolio success'.

3.2. Data Collection

A semi-structured interview method can provide or build explanations for a specific, clear topic so that issues previously defined can be addressed [46]. In this regard, the literature review on 'risk factors' from a portfolio perspective and 'project portfolio success' was used as background for the interview design. Thus, the four risk factor categories

proposed by Micán et al. [21] (see Section 2.2) were defined as initial themes regarding the construct ‘risk factors’, defining them as risk factor categories, and the five ‘project portfolio success’ dimensions described in Table 1 (see Section 2.3) were established as initial themes concerning the construct ‘project portfolio success’.

Next, an interview guide or protocol was defined and followed. The interviews comprise the broader-scope research project within which this study is framed, so therefore, the interview protocol included additional issues to the two constructs reported in this paper. Appendix A describes the interview blocks and questions. The interview protocol consisted of four main blocks of questions (blocks two to five in Appendix A). This paper reports in detail data associated with the constructs ‘risk factors’ and ‘project portfolio success’. These constructs were mainly associated with blocks two and three. However, information regarding those constructs might also have been mentioned by interviewees in the fourth or fifth interview blocks. ‘What criteria/dimension might represent project portfolio success dimensions?’ was the main question in block two. ‘Could you identify types of risks, groups of risks, or categories of risk that should be considered at the project portfolio level?’ was the main question in block three.

Prior to the interview, all participants received a briefing document by email, which clarified the research scope, the main interview questions, anonymity and confidentiality concerns, and the key terms adopted. Where appropriate, supplementary questions were used to prompt more detailed responses to the above questions. The interviews were recorded with the prior authorization of each interviewee. Handwritten notes were taken during interviews. This study was focused on the professional experience of the interviewees. Twenty-eight interviews were carried out. The interviews lasted 53 minutes on average. The interviewees’ target profile was Colombian professionals with experience as, or related to, project portfolio managers or as head of a project portfolio office, and with experience in portfolios of organizational development projects.

Organizational development projects, also described as internal development projects, can be composed of a mix of business process development, internal information technology development, organizational change or re-engineering, and investments in new equipment, major software, and other capital projects [24]. Thus, given the nature of organizational development project portfolios, most interviewees expressed professional experience associated with different types of projects or mixed projects. For instance, referring to her current role, interviewee seven mentioned: ‘I have managed four types of projects: engineering, understood as processes automation; infrastructure, associated with civil and architecture works; technological, related to software solutions; and management, those that have regulatory compliances’. Similarly, referring to a previous professional experience, interviewee nine mentioned: ‘There were projects of all kinds, large organizational projects, infrastructure projects, and others’.

Hence, 17 interviewees expressed having experience in managing mixed projects (MX), while seven, three, and one of the interviewees mentioned that their primary professional experience was associated with engineering projects (EN), technology information projects (TI), and new product projects (NP), respectively. Additionally, considering the classification of organizations proposed by Müller et al. [47], 50%, 28%, and 22% of the interviewees had their primary experience in process-oriented, project-oriented, and project-based organizations, respectively. Table 2 shows a detailed characterization of the interviewees.

Table 2. Characterization of interviewees.

No.	Duration (min)	Project Management Experience (Years)	PPM Experience (Years)	Primary Experience: Type of Projects	Primary Experience: Type of Organization	Role
1	60	10	7	MX	Project-based	Project portfolio manager
2	59	6	4	MX	Project-based	Project portfolio manager
3	49	4	2	EN	Project-based	Project portfolio manager
4	50	20	3	TI	Project-oriented	Project manager
5	47	8	4	EN	Project-based	Project portfolio manager
6	61	9	1	MX	Project-based	Project portfolio manager
7	60	11	4	MX	Process-oriented	Project portfolio manager
8	56	10	2	MX	Process-oriented	Project portfolio manager
9	73	15	5	MX	Project-oriented	Project portfolio manager
10	45	11	5	MX	Project-oriented	Project portfolio manager
11	50	10	3	EN	Project-based	Project portfolio manager
12	57	8	3	MX	Process-oriented	Head of improvement office
13	48	5	2	NP	Project-oriented	Project portfolio manager
14	60	13	10	MX	Process-oriented	Project portfolio manager
15	51	20	8	MX	Project-oriented	Head of PMO
16	66	7	3	MX	Project-oriented	Project portfolio manager
17	46	12	1	TI	Process-oriented	Project portfolio manager
18	31	20	5	MX	Process-oriented	Executive director
19	73	15	5	MX	Process-oriented	Head of PMO
20	46	3	1	EN	Process-oriented	Project portfolio manager
21	59	4	1	MX	Process-oriented	Project portfolio manager
22	41	15	7	EN	Process-oriented	Project portfolio manager
23	49	7	3	MX	Project-oriented	Executive director
24	47	15	10	EN	Process-oriented	Head of PMO
25	42	7	3	MX	Process-oriented	Head of PMO
26	32	7	3	MX	Process-oriented	Project portfolio manager
27	47	10	4	EN	Process-oriented	Project portfolio manager
28	73	18	7	TI	Project-oriented	Head of PMO

3.3. Data Analysis

The qualitative analysis of the answers was geared towards identifying the aspects that compound the figurative core of the constructs under analysis, identifying the main arguments for which each theme was considered relevant or not relevant by the interviewees. It involves, therefore, identifying the qualitative arguments that establish whether or not a theme is part of the figurative core.

To analyze the empirical data, a thematic analysis was conducted. Thematic analysis (TA) is defined as an adequate theory-building technique that is focused on analyzing patterns or themes [48]. Thematic analysis has been integrated into data analysis in studies developed under SRT within different theoretical orientations (see [49]). It has also been incorporated to conduct a qualitative analysis of interview data in studies developed under SRT [39]. TA approaches can be classified as coding reliability approaches, codebook approaches, or reflexive approaches, which differ in the way themes are conceptualized (Terry et al.) [50]. For this research, a reflexive TA approach was adopted. In reflexive TA a theme is conceptualized as analytic outputs that represent shared meaning-based patterns, organized around a core concept or idea [48]. A six-step procedure was conducted [48]: (i) familiarization; (ii) generating codes; (iii) constructing themes; (iv) revising; (v) defining themes; and (vi) producing the report.

The familiarization step was carried out based on listening to a sample of interview records and reading all the interview transcriptions and handwritten notes. The data from interviewees were initially grouped according to the four ‘risk factors’ categories and five ‘project portfolio success’ dimensions identified in the literature (see Sections 2.2 and 2.3).

This grouping strategy served to identify whether the interviewees mentioned new or complementary risk categories or success dimensions.

In the code generating step, it was established that the analysis process would be carried out in blocks of four interviews at a time. A first possible set of codes derived from the analysis of the first block of four interviews was pre-defined. Consequently, the codes were updated in each cycle of analysis; to do so, codes were merged, added, or split according to each new group of data. For this step, a sentence was defined as the unit of data analysis. Then, as a result of this step, six codes were generated for 'Risk factors' and seven codes for 'project portfolio success'. Table 3 shows an example of codes derived from interview analysis. In the case of the construct 'project portfolio success', the codes correspond directly to the success dimensions mentioned by the interviewees.

Table 3. Constructs, codes, and themes.

Construct	Codes	Themes *			
		T1	T2	T3	T4
Risk factors	Projects and programs	X			
	Portfolio	X			
	Organization	X			
	Impact on several projects		X		
	Impact on portfolio		X		
	Impact on portfolio outcomes		X		
Project portfolio success	Strategic fit			X	
	Future preparedness			X	
	Stakeholder satisfaction			X	
	Economic impact			X	
	Average Project success				X
	Portfolio balance				X
	Synergies exploitation				X

* T1: Sources framed in the project portfolio as an organizational unit; T2: Risk as an extension of the impact generated; T3: Success dimensions linked to portfolio outcomes; T4: Success dimensions not linked to portfolio outcomes.

Based on the codes defined, the steps of constructing themes, revising themes, and defining themes were carried out to obtain groups of data with shared meaning-based patterns regarding the constructs under study. This process was oriented so as to ensure that each theme was related to a central meaning. Each interview was transcribed. The coding process was supported by NVIVO software.

These four themes grouped the information provided by interviewees regarding 'risk factors' and 'project portfolio success'. However, these themes do not entirely represent the figurative core for 'project portfolio risk' derived from both constructs. In this regard, the theme '*Success dimensions not linked to portfolio outcomes*' refers to success dimensions mentioned by interviewees that were associated with PPM success rather than project portfolio success itself. In other words, the interviewees did not associate the success dimensions that are part of this theme as representing project portfolio results from an organizational view. Therefore, based on the 'project portfolio risk' conceptualization adopted, this theme was discredited as part of the figurative core from the perspectives of Colombian practitioners.

Thus, themes 'Sources framed in the project portfolio as an organizational unit', 'Risk as an extension of the impact generated', and 'Success dimensions linked to portfolio outcomes' represent the figurative core for 'project portfolio risk', based on the 'risk factors' and 'project portfolio success' constructs in portfolios of organizational development projects from the perspectives of Colombian practitioners. Consequently, these three themes were defined as the primary objectification groups for 'project portfolio risk' emerging from Colombian practitioners' perspectives. The findings regarding these objectification groups are reported in Section 4.

3.4. Internal and External Validity

The transcription and coding processes for all interviews were carried out by the same researcher (interviewer), thus ensuring consistency of coding. To check the internal validity of the coding process, the remaining two researchers involved in the project were asked to audit the trail of the key coding decisions arising from the research process.

Relating to external validity, the small and segmented samples frequently used in qualitative research limit the generalizability of such studies [46]. Thus, as in the study carried out by van der Hoorn and Whitty [51], theoretical and managerial contributions are tempered by the qualitative nature of this study and the characteristics of the sample.

Participants were selected by convenience sampling, the most common sampling strategy in this type of study, as the interviewees' participation is associated with their availability and interest in participating rather than an aleatory selection of participants [52,53]. Therefore, a statistical index cannot be established regarding the representativeness of the sample. The literature suggests that a sample size between 5 and 30 interviewees allows for understanding of commonalities within an objective group [46,54].

Previous studies affirm that sample size increases when the participant group is heterogeneous [46,53,55]. However, as the interviewees' profile was exclusively oriented towards Colombian portfolio practitioners with experience in portfolios of organizational development projects, the participant group can be considered homogeneous. Therefore, the sample size of twenty-eight interviews conducted in this study is adequate for understanding commonalities within the interviewees' group, i.e., identifying the figurative core regarding the two constructs under study. Nevertheless, the sample's homogeneity limits the results' generalizability. Regarding this concern, two main threats to the external validity of the findings and implications must be considered: i) the geographical focus represented in the fact that only Colombian professionals were interviewed, and ii) the focus on a specific type of project portfolio, namely, organizational development project portfolios.

4. Findings

4.1. Project Portfolio Risk Factors

Concerning the objectification of the 'risk factors', two primary objectification groups emerged: sources framed in the project portfolio as an organizational unit, and risk as an extension of the impact generated. These primary groups compounded to form the figurative core of the 'risk factors'.

Concerning the first primary representation, the practitioners expressed that risk could be derived from: each project, where the projects represent the constituent components of the portfolio; risk sources associated with the project portfolio level in which the project portfolio is, in itself, a unit of management; and risk derived from the interaction of the portfolio with the organization, or even derived at the organizational level, recognizing the interaction of the project portfolio with other organizational units.

Risk sources associated with problems with portfolio-financing capital and problems derived from portfolio structure, which are part of the category of organizational conditions, were the risks most often acknowledged by the interviewees concerning risk sources derived from the organizational level. For example, interviewee 9 mentioned that 'a stakeholder with high organizational influence can affect or modify the portfolio structure in the wrong way [. . .] generating risk for the portfolio's success'. Likewise, risks such as changes in the competitive environment and changes in external conditions related to norms and reference models, which are part of the category of external conditions, were frequently highlighted by the interviewees.

Concerning risk related to the category of PPM level, 'project portfolio risk' associated with an inadequate distribution of information, imbalanced management of stakeholder expectations, or lack of capability at both PPM and project management levels were all repeatedly mentioned. Interviewee 1 commented on lack of capability: 'I had cases where a good project manager was promoted to portfolio manager but the abilities required

were different. He needed to take a strategic perspective [...] he had to have a more comprehensive perspective than just try and solve operational issues’.

‘Project portfolio risk’ derived from projects within the portfolio was mainly related to problems with suppliers or contracts and to project interdependency. On the subject of project interdependency, for example, interviewee 4 highlighted that ‘not being able to see interdependencies, neither seeing the system as a whole has been another risk we have had to deal with’, while interviewee 16 observed: ‘We literally saw it in this way: this <<project>> was delayed, [...] it began to have problems with deliverables that were interdependent with other projects, [...] then this <<project>> was negatively impacted and started to generate negative impacts on the other <<projects>> as well’. However, some interviewees mentioned that this type of risk corresponds to the project or program management level, as in the observation made by interviewee 15: ‘It could be that, due to its characteristics, this is more related to the project and program management levels’.

Regarding the second primary representation of ‘risk factors’, based on the conception of risk as an extension of the impact generated by the ‘risk factors’, risks could give rise to general or global impacts either upon the expected outputs from the projects within the portfolio or simply the impacts on a specific project or projects, which, in turn, affect the ‘project portfolio risk’. In addition, by considering that portfolios of organizational development projects are structured to have an impact on the process and business model of the organization, the interviewees mentioned that ‘project portfolio risk’ could also give rise to impacts on project portfolio outcomes, i.e., impacts on how the outputs of the projects within the portfolio lead to achieving the organizational results for which the portfolio was designed.

Regarding this concern, for instance, the capabilities provided by the organization for supporting the flow and aggregation of information, as well as changes in portfolio structure, exemplify ‘risk factors’ that have a general or global impact on expected portfolio results. In line with the above, interviewee 6 stated that ‘capabilities that the organization provides to support communication and aggregation of information have an important influence on all the projects’.

The project management capabilities of a specific project manager who has a subset of projects within their remit is an example of the second way in which risks can impact the expected portfolio results, since that risk impacts a specific set of projects, and the impact on these projects then gives rise to ‘project portfolio risk’. The objectification of these two types of impact, general impacts and impacts on a specific project or a set of projects within the portfolio, is in line with the concepts related to systematic and non-systematic risks derived from Modern Portfolio Theory.

Concerning the impact on project portfolio outcomes, interviewee 15 exemplified this as follows: ‘the company is no longer going in this <<strategic>> direction, now it is going in another <<strategic>> direction, that is a very critical risk for the portfolio success and for each project, because you have to find a way to steer everything in that new <<strategic>> orientation <<defined by the company>>’. This means that to achieve the expected positive impact on the organization, the portfolio outputs must be realigned according to the new organizational orientation.

Likewise referring to this type of impact from ‘risk factors’, interviewee 28 mentioned that the impact of those ‘risk factors’ is sometimes hidden from view during execution of the project portfolio. Specifically referring to cyber-security risk derived from the results of the implementation of digital channels, interviewee 28 mentioned: ‘it is not about waiting to close the portfolio and say to executives: there you have the projects’ results, now invest quickly in some cybersecurity to be able to use them’.

Figure 1 shows the two primary objectification groups that emerged regarding the construct of ‘risk factors’ in organizational development project portfolios from Colombian practitioners’ perspectives. Figure 2 illustrates the first objectification group, labeled as ‘sources framed in the project portfolio as an organizational unit’. It shows the three levels from which the risk factors are derived: project, portfolio, and organizational levels. The

risk categories identified in the literature that, in turn, were recognized by the interviewees are also shown. The second objectification group regarding ‘risk factors’ corresponds to ‘risk as an extension of the impact generated’, which is also represented in Figure 2. In this regard, illustrating interviewees’ perspectives, it shows that risk factors could give rise to systematic and non-systematic impacts on the expected results of the projects, as well as impacts on the project portfolio outcomes.

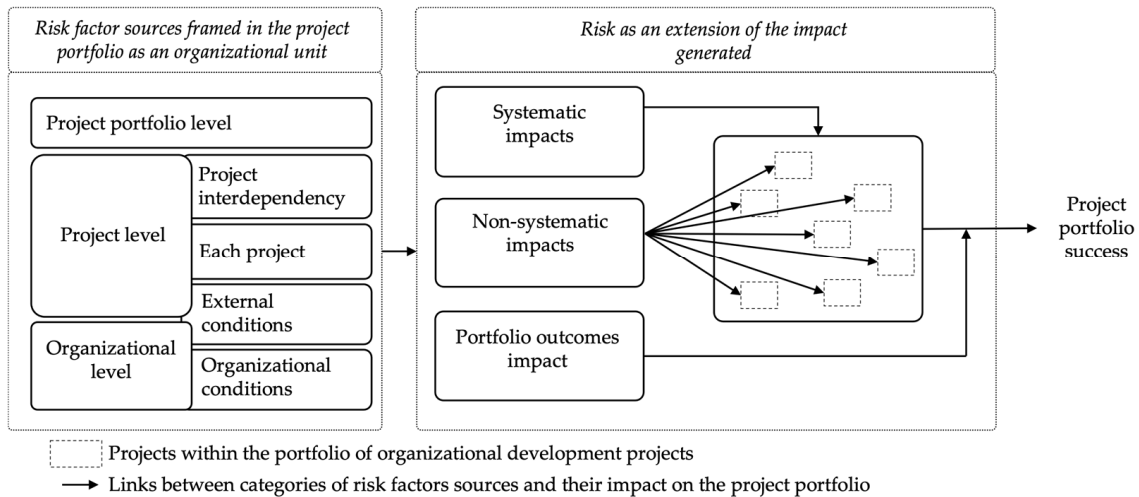


Figure 1. Objectification of ‘risk factors’ for organizational development project portfolios.

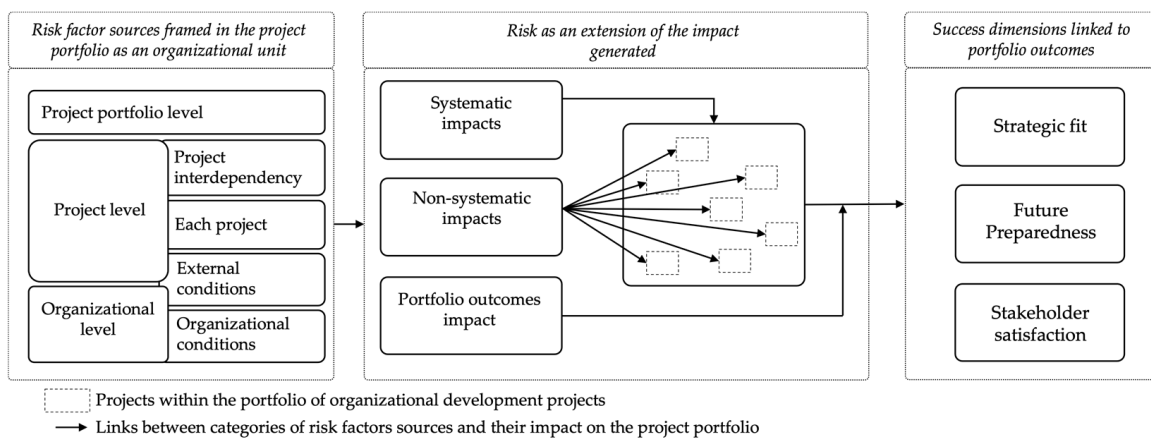


Figure 2. Objectification of ‘Project portfolio risk’ for organizational development project portfolios considering the constructs ‘risk factors’ and ‘project portfolio success’.

In this research, ‘project portfolio risk’ was tacitly conceptualized as a measure of impact on ‘project portfolio success’ due to changes in ‘risk factors’. Therefore, Figure 2 also illustrates that risk factors impact on portfolio success. Findings regarding ‘portfolio success’ are reported in the following section.

4.2. Project Portfolio Success Dimensions

For the construct of ‘project portfolio success’, the figurative core was associated with the dimensions linked to expected portfolio impacts or outcomes. The strategic fit was not only the dimension most often spontaneously triggered by interviewees, but it was also the dimension with the highest level of agreement. This might be a result of the strategic relationship between portfolio structure and organizational strategy. For example, according to interviewee 7: ‘It is considered successful if it meets the promised KPIs [...] The organization has a strategic map. This strategic map <<allows us to>> generates

strategic objectives, specific objectives, and action plans. The initiatives are linked to the action plans', while interviewee 21 observed, 'When I am aware that the projects we are doing are really impacting the strategy, and I am really orienting <<the project portfolio>> to the strategy, then I am going to feel satisfied'.

Future preparedness was the dimension with the second-highest percentage of positive mentions. Project portfolios help to develop organizational capabilities for the organization to become competitive in the future; interviewee 9 mentioned that 'if capabilities are being enabled to have competitive advantages in the different areas which the company is competing, it can be said that transformation based on the portfolios is achieved'.

Economic impact (financial or social) and stakeholder satisfaction were also spontaneously mentioned by the interviewees as possible project portfolio success dimensions. Interviewees were firm in highlighting stakeholder satisfaction; for example, interviewee 22 affirmed that 'we have to give them something [. . .] they must receive benefits' while interviewee 9 stated that 'in portfolios, there are some variables that are very pragmatic, senior management's satisfaction level or well-being <<regarding project portfolio performance or partial results>> is one of these <<pragmatic>> variables'.

On the subject of economic impact, interviewee 16 stated, 'We evaluate that the portfolio produces minimum expected profitability at the economic level for the organization, [...] and that our sub-portfolio that has social implications maximizes the use of the resources at the same time as maximizing the social benefit'. In this regard, the literature considers this dimension a business success dimension that is influenced by project portfolio success. Nevertheless, it was established that an organization willing to incorporate these dimensions could add it in as one of the indicators associated with the portfolio sponsor as a stakeholder, i.e., as part of the stakeholder satisfaction as success dimension.

Therefore, the figurative core of 'project portfolio success' framed within the 'project portfolio risk' conceptualization is represented by strategic fit, future preparedness, and stakeholder satisfaction. As mentioned previously, according to interviewees' perspectives, these success dimensions are linked to portfolio outcomes. These three success dimensions were added to the 'project portfolio risk' representation for organizational development project portfolios shown previously in Figure 1. Thus, Figure 2 shows representations of both 'project portfolio success' and 'risk factors' for organizational development portfolios obtained from Colombian practitioners' perspectives.

Regarding other dimensions of success as the average of project success, synergies exploitation, and portfolio balance, the interviewees recognized their importance not from a perspective of 'project portfolio success' but from a PPM process perspective. Average project success received a low percentage of positive mentions, although this does not mean that interviewees considered project success to be irrelevant. Indeed, some interviewees argued for its importance but stipulated that it should be considered a performance indicator. On this point, interviewee 5 affirmed that 'obviously it is a measure that gives you a view of how favorably the portfolio management is being carried out but it doesn't necessarily concern project portfolio success'.

In the view of other interviewees, applying an average measure as a success dimension could generate inadequate or imprecise information: for example, interviewee 27 observed that 'it may be that when a project is implemented you have some easier or simpler projects, and this helps to increase <<the average>>, but the portfolio may have a problem with projects of greater complexity'.

As for the synergy exploitation and portfolio balance dimensions, most of the interviewees mentioned that they do not consider these to be 'project portfolio success' dimensions but rather, dimensions associated with key portfolio management practices, similar to practices such as appropriate change management processes, or the development of strategies or methods for project and program monitoring. In light of this, interviewee 9 stated that 'these are optimizing factors that enable me to have good practices but not measures of success', interviewee 23 affirmed 'I think it <<synergy exploitation>> is more linked to being an element of management that may or may not have an impact on the result', and

interviewee 21 observed, 'it is more about how all this management helps me to obtain certain results [...] initial balancing maybe helps me to carry out analyses to finally show those results'.

It is important to highlight that the interviewees implied that synergy exploitation and portfolio balance could be considered PPM success dimensions, since adequate management of these dimensions helps to improve project portfolio performance. This leads to a need to identify the dimensions which can be associated with 'project portfolio success' and those which can be associated with PPM success, and the differences between them.

5. Discussion

Framed around the portfolios of organizational development projects, analysis of the interviews suggests a conceptualization of 'project portfolio risk' based on the constructs 'risk factors' and 'project portfolio success'. The findings indicate that 'project portfolio risk' could be explored as a multidimensional measure of impact on the expected strategic fit, future preparedness, and stakeholder satisfaction due to changes on 'risk factors'. The conceptualization here proposed is aligned with the risk analysis paradigm shift in the literature, which calls for complementing the narrow project standpoint with wide and strategic-portfolio risk analysis [9,11].

Conceptualizing the 'project portfolio risk' as a measure of impact on strategic fit and future preparedness allows the recognition that, from a risk perspective, organizational development portfolios are developed to achieve mid or long-term organizational outcomes [2,4]. Hence, by considering these success dimensions, the suggested conceptualization posits that 'risk factors' can influence strategic business performance and capability to achieve a sustainable competitive position in response to the changing environment. These aspects are recognized as those that organizational development portfolios pursue to provide an opportunity to the parent organization grown sustainability [2,8]. In other words, the suggested 'project portfolio risk' conceptualization allows the recognition that portfolio risk is based on the strategic nature of organizational development portfolios, rather than on isolated results of each project within the portfolio.

In addition, the suggested 'project portfolio risk' conceptualization is in line with the fact that organizational changes must fit into a coordinated cross-project structure represented in the portfolio of organizational development portfolios [2,3]. The above is represented in the variety of impacts on the portfolio, namely, non-systemic, systemic, and outcome impacts.

Thus, this study sought to advance knowledge regarding portfolio risk in the portfolios of organizational development projects by disclosing the tacit conceptualization in which the materialization of 'risk factors' leads to impacts on 'project portfolio success'.

5.1. Theoretical Implications

Three main theoretical implications are described and discussed below, namely, project portfolio risk as a multidimensional measure, stakeholder satisfaction as a portfolio success dimension, and risk factors and their impact on the portfolio.

5.1.1. Project Portfolio Risk as a Multidimensional Measure

The findings show the 'project portfolio risk' as a multidimensional measure based on a set of 'project portfolio success' dimensions, not merely a measure associated with the parameters of the projects, or an aggregate measure of the 'project portfolio risk' as usually viewed when project management or general management approaches are adopted (see for instance [20] or [28]). The findings suggest, for portfolios of organizational development projects, measuring the 'project portfolio risk' in a multidimensional and alternative manner that had not previously been proposed in the literature, and through which the project portfolio itself can be recognized.

Considering that the literature shows 'project portfolio success' dimensions cover both project portfolio effectiveness and efficiency [56], the findings show that the construct of

'project portfolio risk' is associated with success dimensions linked to project portfolio effectiveness. Concerning that, both strategic fit and future preparedness have been widely recognized in the literature as 'project portfolio success' dimensions [38,57], and identified both within the literature [56] and by the interviewees as linked to the effectiveness of the project portfolio. However, while Kock et al. [56] mention portfolio balance as a dimension associated with portfolio effectiveness, according to the findings here reported, this dimension could be associated with portfolio efficiency.

The above can be associated with the fact that interviewees mentioned that, in portfolios of organizational development projects, this dimension is derived from the strategic plan of the organization and specific goals defined in the action plans of the organization, and, in this regard, the subject related to the portfolio is associated with how organizational resources and capabilities are used to achieve their goals, i.e., portfolio efficiency.

In addition, it could also be considered that portfolio balance is derived from the PPM goals proposed by Cooper et al. [36] for portfolios of product development projects. However, studies focused specifically on 'project portfolio success' dimensions in portfolios of organizational development projects have not been conducted.

5.1.2. Stakeholder Satisfaction as a Portfolio Success Dimension

The findings recognize the project portfolio as an organization hosting temporary organizations (projects), and recognize that the project portfolio interacts with the parent organization [58], specifically through both the influence produced by 'risk factors' derived from the organizational level and the impact of these 'risk factors' on the 'project portfolio success'. The integration of 'risk factors' from different levels, both internal and external, recognizes that risk is related to decision-making processes in which all organizational levels are inter-related [10].

In addition, according to Martinsuo and Geraldi [58] project portfolios exist to make an impact in their context, incorporating both internal and external factors, and 'project portfolio success' depends on what kind of impact stakeholders want to achieve. In line with this, project portfolio stakeholder satisfaction was identified as one of the 'project portfolio success' dimension linked to project portfolio effectiveness.

In this concern, at the project level, it has been recognized that success criteria should reflect the diverse interests and viewpoints of the stakeholders [6]; e.g., stakeholder satisfaction has been proposed as a major project success criterion at the project success level by several authors [57]. However, at the project portfolio level, stakeholder satisfaction has not explicitly been the subject of profound studies and debate as a 'project portfolio success' dimension.

From organizations' perspectives, a stakeholder can be anyone who can have an impact on the organization's actions or who experiences an impact as a result of them [59]. In this regard, the stakeholder satisfaction suggested as part of the portfolio success dimensions is framed from the perspective of those stakeholders who experience an impact as result of portfolio execution. Therefore, this 'project portfolio success' dimension requires further empirical and analytical studies to confirm or generalize it within the frame of 'project portfolio risk' analysis in organizational development project portfolios.

5.1.3. Risk Factors and Their Impact on the Project Portfolio

The conceptualization of 'project portfolio risk' derived from systematic and non-systematic risk factor impacts, in which 'project portfolio risk' is either not defined as a unidimensional measure, or is not associated exclusively with financial results, could be explored for risk analysis or risk assessment in the project portfolio execution phase. This contrasts with the application of Modern Portfolio Theory, mainly from the perspective of project portfolio selection with risk considerations [17,28], which focuses on the risk associated with the expected financial results or on the specific type of risk for each project within the portfolio, and which generally defines the risk as a unidimensional measure.

According to Modern Portfolio Theory [17], for example, non-systematic risk comprises both individual risk contributions, in this case associated with the ‘project portfolio risk’ contribution from each project, and risk contributions derived from interactions between projects, which could be represented by ‘project portfolio risk’ contributions from project interdependency and risk factor interdependency; in the case of this study, non-systematic risk can be used as a component of ‘project portfolio risk’ assessment during the execution of portfolios of organizational development projects.

In addition, the incorporation of risk factor impact on portfolio outcomes in a way complementary to risk factor impacts on projects within the portfolio could help to recognize the conceptualization of the project portfolio as a bridge between projects and strategy into approaches for risk analysis, or risk assessment, of project portfolios. This does not mean that the suggested conceptualization ignores that ‘project portfolio risk’ is highly related to the projects that comprise the project portfolio [9,20,23]. On the contrary, it complements that with the fact that a project portfolio interacts with the parent organization and its strategy [58,60]. The above is reflected by the call to incorporate risk sources derived from the portfolio and organizational levels when ‘project portfolio risk’ is analyzed.

The literature shows that risk factors impact project portfolios in two ways: (i) impacting a project or several projects, and (ii) generating a global influence on the whole project portfolio [9,61]. The suggested ‘project portfolio risk’ conceptualization recognizes and incorporates both types of impacts. However, it extends the conceptualization of type of risk factor impacts by suggesting a third type of influence from the perspective of organizational development portfolios, namely, impact on portfolio outcomes.

5.2. Managerial Implications

The findings described in this paper are themselves aspects to consider when a company is designing or renewing its process to manage the ‘project portfolio risk’. The suggested conceptualization can be used as an input for designing the project portfolio risk management plan and risk identification and assessment as well: for instance, for identifying risk sources at the project portfolio and organizational levels in addition to risk sources based on project risk factors and interdependencies between projects. These additional risk factors offer an expanded perspective of how the parent organization and portfolio management processes could influence the project portfolio. The above leads to a supported and informed portfolio risk analysis from an organizational perspective.

Thus, the ‘project portfolio risk’ and its assessment require a strategic view in which aspects derived from their organizational context (internal and external) should be considered. Moreover, decisions regarding ‘project portfolio risk’ could influence the parent organization itself and its strategy and stakeholders. Regarding this concern, developing a practical mechanism to perform risk assessment considering the suggested ‘project portfolio risk’ conceptualization could help understand how risk factors impact portfolio success, framed in an organizational view. This means helping to identify critical risk factors from a strategic perspective, which is inherent to organizational project portfolios. It could provide a valuable view of the types of risk factors influencing the project portfolio and help to understand the strategic business implications associated with the project portfolio risk.

In addition, considering the risk based on success dimensions linked to portfolio effectiveness provides valuable information regarding how to manage risk and the portfolio itself. For instance, considering impacts on portfolio stakeholder satisfaction allows for linking of risk and stakeholder management processes. Subsequently, the suggested ‘project portfolio risk’ conceptualization can lead to consideration of strategies for managing the portfolio stakeholders as part of project portfolio management. In this regard, from a project-level perspective, several stakeholder management strategies have been identified and analyzed from a practical perspective [59]. Stakeholder management strategies at the portfolio level could then be analyzed based on how they influence the risk associated with the project portfolio.

Finally, the findings help differentiate between portfolio risk, the financial risk taken on by the organization derived from the investment in the portfolio, and the risk associated with the projects. In practical terms, the suggested risk conceptualization either substitutes the financial perspective of portfolio risk, which is usually considered for project portfolio selection or the risk assessment for each project, or complements it. In this regard, coordination mechanisms between ‘project portfolio risk’ and other organizational risk systems, i.e., operational, strategic, or project risk approaches, should be considered.

6. Conclusions

This paper provides empirical evidence to back up the constructs of ‘risk factors’ and ‘project portfolio success’ in portfolios of organizational development projects and discloses how they could be linked under the construct ‘project portfolio risk’ as a measure of impact on ‘project portfolio success’ due to changes in ‘risk factors’. The suggested ‘project portfolio risk’ conceptualization allows for recognition, from a risk perspective, that organizational development project portfolios are designed to influence strategic performance and help to achieve a sustainable competitive position.

According to the practitioners’ objectification, the ‘risk factors’ were represented as risk factor categories rooted at the portfolio, project, and organizational levels, and which can lead to general impacts either on all projects within the portfolio (systematic impacts), on a specific project or projects, which, in turn, affect the ‘project portfolio risk’ (non-systematic impacts), or directly on the expected project portfolio outcomes.

When adopting the ‘project portfolio success’ as a set of dimensions on which the ‘project portfolio risk’ could be measured, it was posed that ‘project portfolio risk’ could be measured based on the effectiveness of the portfolio. As such, according to the practitioners’ objectification, strategic fit, future preparedness, and stakeholder satisfaction were proposed as multidimensional outcomes on which the ‘project portfolio risk’ could be measured.

A Social Representation Theory lens helped us to understand the objectification of the constructs, and consequently to identify a figurative core for these constructs. However, from a methodological standpoint, a limitation of this study is the analysis of the anchoring process of these constructs. The empirical results here reported can neither be directly extended to other types of portfolios nor assumed as representative of portfolio practitioners’ perspectives in other countries. This limitation is in line with the research paradigm adopted in this research: a constructivism-founded scientific paradigm for organization research. In this regard, ‘the constructivist view of organizational design science confronts researchers with the issues of generalizing local knowledge and justifying generalization’ [27] (p. 1240).

Although the suggested ‘project portfolio risk’ conceptualization corresponds to local knowledge, it provides valuable insight and knowledge regarding how the risk associated with organizational development project portfolios could be represented when the inherent strategic nature of this type of portfolio is considered. Thus, rather than providing a generalized conceptualization, the findings and implications of this study open the path for further research in the field, including both exploratory and confirmatory studies. Thus, for instance, replicating the study considering a different and larger sample and aggregating the results would help to see how the suggested ‘project portfolio risk’ conceptualization would evolve.

Future research is required for exploring the incorporation of the ‘project portfolio risk’ conceptualization here reported into ‘project portfolio risk’ assessment and risk response planning. Further research could also be conducted on defining how to establish specific metrics for assessing the ‘project portfolio risk’ based on ‘project portfolio success’.

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Appendix A

Table A1. Interview blocks and questions.

Block	Objective	Questions
1	Clarify the interview scope and the interviewee's background	Do you want to know more about the research project or about the interview? Can you give me a short introduction of your professional background regarding project management and portfolio management?
2	Identify perceptions of dimensions that could be associated with project portfolio success.	What criteria/dimension might represent project portfolio success dimensions? Do you perceive <<name of a project portfolio success dimension identified in the literature>> as relevant for project portfolio risk assessment?
3	Identify perceptions of categories in which project portfolio risk could be analyzed	Could you identify types of risks, groups of risks, or categories of risks that should be considered at the project portfolio level? Do you perceive <<name of a PPR category identified in the literature >> as a relevant category for project portfolio risk assessment?
4	Identify perceptions of components for Project Portfolio Risk Assessment (PPRA) that should be considered for designing and conducting PPRA.	Could you identify the main aspects or components that should be considered for an adequate PPRA? Do you perceive <<name of a PPR component identified in the literature>> as a component of project portfolio risk assessment?
5	Obtain additional information considered important from the interviewee's perspective regarding PPR assessment	Do you consider that there are other aspects that should be measured or considered as part of PPRA? Do you want to add anything?

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