

# Creativity as a topic in project management – A scoping review and directions for research

Luís Pires<sup>a</sup>, João Varajão<sup>b,\*</sup>

<sup>a</sup> University of Minho, MIEGSI, Campus de Azurém, Guimarães 4804-533, Portugal

<sup>b</sup> University of Minho, ALGORITMI Center/LASI, Campus de Azurém, Guimarães 4804-533, Portugal

## ARTICLE INFO

### Keywords:

Creative project management  
Creative projects  
Creativity  
Creativity management  
Management of creative projects  
Project management  
Project manager  
Systematic literature review

## ABSTRACT

Creativity is crucial in project management, contributing to the overall effectiveness of endeavors. Our study enables a better understanding of this important subject. We carried out a scoping review of the literature, addressing two questions: “Why is creativity important in project management?” and “What are the main research themes related to creativity in project management?” The findings show a body of knowledge around the main themes of “Creative project management,” “Creativity management,” and “Management of creative projects,” and open several new avenues for research.

## 1. Introduction

Attention to project management has grown considerably over the last few years, with academics and practitioners demonstrating a keen interest in the field (Ika, 2009). It offers organizations the tools and methods to be efficient, effective, and competitive in a shifting, complex, and unpredictable environment. Most times, this type of environment requires agility and creativity to face work problems and challenges.

Creativity is the ability to produce new and original ideas and things (Lundin, 2008), being creativity at work the production of novel and potentially valuable ideas to be applied in different strategic areas of the organization, such as products, practices, services, or procedures (Sternberg, 2006).

Despite the common use of the word creativity among project professionals in describing their work efforts and ambitions, the theme is not so prevalent in the academic literature of project management. For instance, if we “Google” with the expressions “project management,” “creativity,” and “books,” we will get more than 5,000,000 hits (search performed in February 2024). But, in most cases, the direct connection between project management and creativity is not taken up in research, as Lundin (2008) reported some years ago.

Nevertheless, we can see that there are several works about creativity or project management and that there is a wide range of relations between these two concepts. Our study aims to clarify the main points raised in the academic literature on creativity as a topic in project management published in the leading project management journals for the last decades. In other words, the primary objective is to provide a broad review of the state of the art and directions for research.

We carried out a scoping review of the literature on creativity in project management. The primary research questions were “Why is

\* Corresponding author.

E-mail address: [varajao@dsi.uminho.pt](mailto:varajao@dsi.uminho.pt) (J. Varajão).

creativity important in project management?” and “What are the main research themes related to creativity in project management?” We used the Scopus database, the largest abstract and citation database of peer-reviewed literature, to identify relevant articles on our topic. To ensure the quality and transparency of the article selection process, we followed the PRISMA method (extension for scoping reviews), a widely accepted standard for literature reviews.

The review enabled us to synthesize past knowledge, identify biases and knowledge gaps, and propose future research directions. Three major research streams related to “Creative project management,” “Creativity management,” and “Management of creative projects” were identified. Overall, the results contribute to the body of knowledge by providing valuable insights into the role and importance of creativity in project management. They highlight the impact of creativity on the project activities, actors, and environment as a fundamental enabler of well-succeed endeavors.

The structure of the article is as follows. [Section 2](#) provides an overview of the concepts of creativity and project management. Then, [Section 3](#) describes the research method. [Sections 4 and 5](#) present and analyze the results. [Section 6](#) discusses the main findings. Finally, [Section 7](#) addresses the contributions, strengths and limitations, and future work.

## 2. Background

### 2.1. Creativity

The word “creativity” appeared for the first time as late as 1875, even though the notion of creation had been in vogue for a long time, especially in connection with mythology and various religious faiths. Creativity is a complex structure defined and studied in many different ways and contexts over the last seven decades ([Avital et al., 2023](#)). Currently, there is a multitude of different ways to “understand” creativity. What are the characteristics of a creative product, for instance?... Where is the borderline between inspiration and imitation?... In the history of ideas, efforts to find a workable definition of what is creative thus play a leading role. Some even point out that creativity is regarded as closely related to madness ([Lundin, 2008](#)).

According to [Liu and Schonwetter \(2004\)](#), creativity is the ability to transcend traditional ideas, rules, patterns, relationships, or the like and to create meaningful new ideas, forms, methods, interpretations, etc. This definition stresses creating something innovative and valuable from pre-existing knowledge and experience, which agrees with how most engineers see creativity.

Current approaches to creativity research include disciplines ranging from psychology, cognitive sciences, philosophy of science, sociology, economy, and management. The most widely accepted and used definition of creativity includes two key elements ([Nadal-Burgues & Bonet, 2016](#)): originality and functionality, meaning that an object or an idea is creative if original and functional.

[Plucker et al. \(2004\)](#) define creativity as the interaction among aptitude, process, and the environment by which an individual or group produces a perceptible product that is novel and useful as defined within a social context.

According to [Amabile et al. \(1983\)](#), social psychologists argue that creativity results from an interactive process between environmental constraints, such as the availability of resources, the support of family and friends, social reward and recognition, flexibility, and freedom. Furthermore, it results from a micro interactive process with other individuals, such as motivational orientation, peers, co-workers, or evaluators that support an individual’s ideas.

Many of the fluctuations seen in defining creativity are related to the interdisciplinary nature of creativity ([Puryear & Lamb, 2020](#)). Nevertheless, we can conclude that creativity is assigned to the capability of creating something new that is valuable to something or someone.

### 2.2. Project management and creativity

Most organizations have projects, either as part of the core business or as endeavors, that help the organization to change or grow. Projects can be executed to create new products, deploy software, develop information systems, etc. Organizations need project management to carry out projects with efficiency and effectiveness ([Varajão et al., 2021](#)).

In short, project management is the application of knowledge and skills to project activities to improve the project’s overall success ([Desmond, 2015](#)). According to [Biesenthal and Wilden \(2014\)](#), project management is the framework and process that guide activities. It is mainly concerned with the operational control and execution of daily work at the project level ([Biesenthal & Wilden, 2014](#)). Project management can follow various approaches (e.g., predictive, adaptive, and hybrid) ([Varajão et al., 2022](#)).

Project management is performed by project managers, who are assigned to lead the project team responsible for achieving the project objectives. Project managers perform various functions, such as facilitating the project teamwork to achieve the outcomes and managing the processes to deliver intended outputs. Creativity is a critical behavioral competency of project managers ([Sampaio et al., 2022](#)).

The importance of creativity in project management cannot be underestimated. According to a study published in the Harvard Business Review, organizations that prioritize creativity in their project management strategies are more likely to experience success and achieve their goals ([Amabile, 2018](#)). Additionally, creativity allows project managers and teams to approach problems from a fresh perspective, generate innovative solutions, and adapt to changes in a rapidly evolving business landscape ([Montuori, 2003](#)). By fostering a creative and collaborative environment, project managers can drive their projects’ success and improve the organization’s effectiveness.

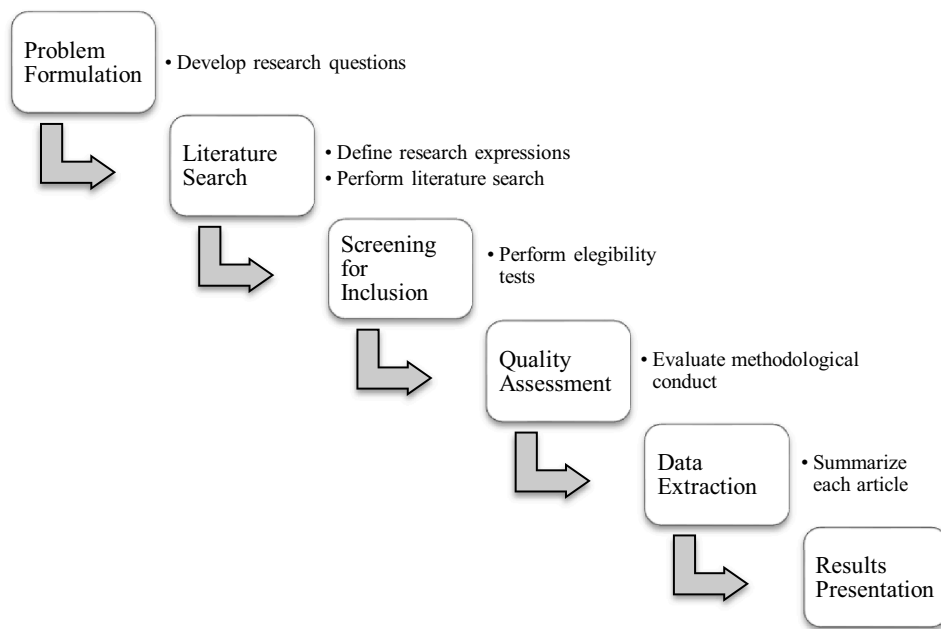


Fig. 1. Literature review process.

### 3. Method

This study aims to provide a comprehensive review of the state of the art and directions for research on creativity in project management. We carried out a literature review (namely, a scoping review) to synthesize past knowledge, identify significant biases and knowledge gaps in the literature, and propose future research directions (Singh & Varshney, 2020). Also known as mapping reviews, scoping reviews are exploratory research projects that systematically map the literature on a topic by identifying key concepts, theories, and sources of evidence that inform theory and practice in the field (UM, 2024).

As shown in Fig. 1, following Saunders et al. (2007), the literature review process started by establishing the research questions. Then, based on them, we defined keywords for the first search and retrieved a list of articles. Supported by the PRISMA's (Page et al., 2021) extension of scoping reviews, a selection of articles has been made considering the articles' quality and content. Finally, we synthesized the final list of references and presented the literature review results.

According to the defined process, we started by formulating the following primary research questions to study the state of the art of "Creativity as a topic in project management":

**RQ1.** Why is creativity important in project management?

**RQ2.** What are the main research themes related to creativity in project management?

As a point of departure to answer the research questions, we created a search statement comprising the terms "creativ\*" (note that the term "creativ\*" reflects all the words that start with "creativ," like "creativity," "creative" or "creativity") and "project management." We limited the research results to English articles published in journals.

Due to its wide coverage of scientific sources, we decided to concentrate the study on the prestigious Elsevier's Scopus ([www.scopus.com](http://www.scopus.com)). Another decisive factor that led us to this decision is that Scopus covers all the leading project management journals (including the International Journal of Project Management and the Project Management Journal).

We performed the search using the following expression: (TITLE-ABS-KEY(creativ\*) AND TITLE-ABS-KEY("project management")) AND (LIMIT-TO(SRCTYPE, "j")) AND (LIMIT-TO(DOCTYPE, "ar")) AND (LIMIT-TO(LANGUAGE, "English")). From this expression, by August 2022, 443 references were found and extracted to an Excel file to perform the next steps of the literature review process.

According to Page et al. (2021), the methods and results of reviews should be reported in sufficient detail to allow users to assess the trustworthiness and applicability of the review findings. We adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), scoping reviews extension (PRISMA, 2018), since it was developed to facilitate transparent and complete reporting of scoping reviews.

Fig. 2 depicts the application of this process for the screening and quality assessment phases. After identifying 443 records from SCOPUS, we searched for overlapping results and concluded that all of them were eligible for screening. Next, we thoroughly reviewed each article's title and abstract, excluding a total of 404 articles. After this, we sought the retrieval of 39 articles, and we ended up with 30 articles available for a full-text screening. The last step was to perform a full-text review and check if all the studies were valuable to our study, and we ended up excluding seven articles.

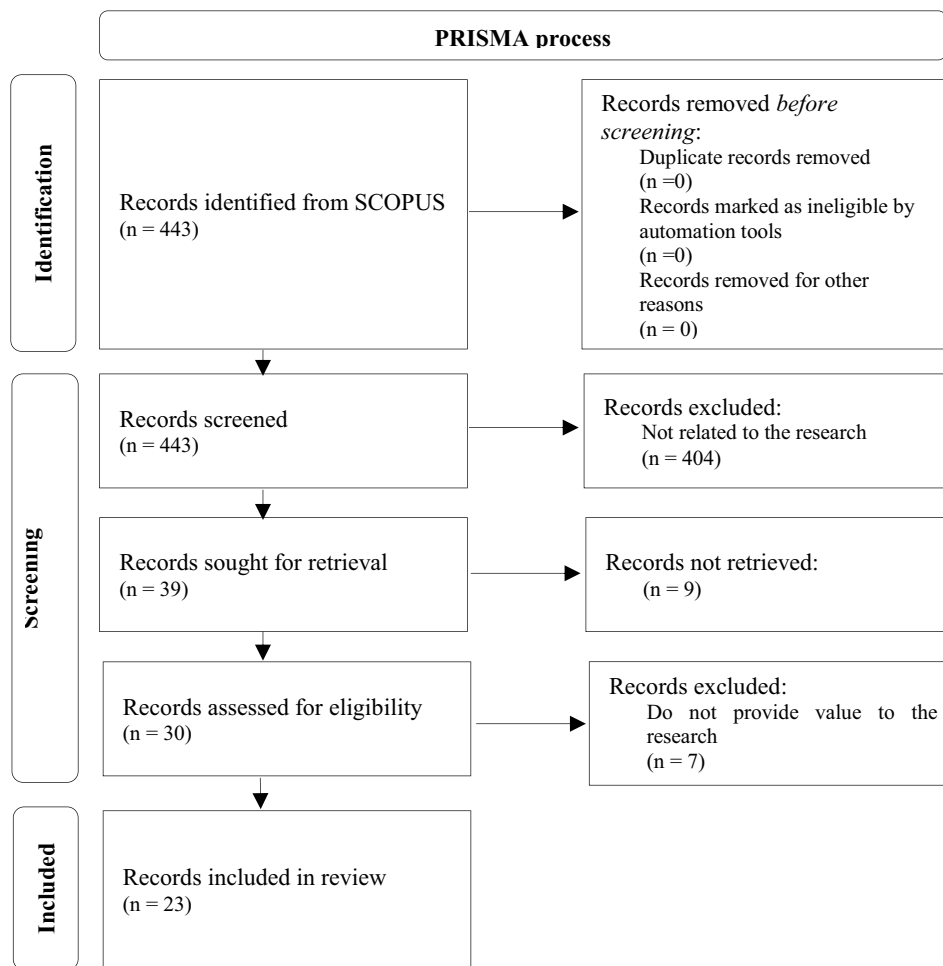


Fig. 2. PRISMA application (scoping review).



Fig. 3. Number of articles focused on creativity in project management over the last 20 years (from 2002 to 2022).

To sum up, we started with identifying 443 articles, but after applying PRISMA, we were left with 23 studies included in our review since only these provided answers to our research questions.

The resulting articles were analyzed, exploring the importance of creativity in the context of project management, themes of study related to creativity (e.g., creative project management), features of the samples (e.g., sample sizes), data collection (e.g., questionnaire) and analysis techniques used (e.g., content analysis). We coded the articles using thematic analysis according to their main topics and subtopics. The coding enabled to systematize the content of the articles. Then, we organized the codes into categories, reflecting the three major research streams identified and described in the following sections.

#### 4. Results

Fig. 3 shows the number of articles published addressing creativity in project management in the last two decades. Considering that the graph may illustrate the interest in this topic over the years, we can conclude that the interest has been constant for the last 20 years. A detailed view of the references is presented in Table 1.

Observing all the articles and their sources, it is noticeable that the International Journal of Project Management (IJPM) was the

**Table 1**

Articles focused on creativity in project management over the last 20 years.

| Year | No. of articles | Refs.                                                                        |
|------|-----------------|------------------------------------------------------------------------------|
| 2002 | 2               | (Alexander, 2002; Brown & Lee Hyer, 2002)                                    |
| 2006 | 2               | (Leybourne & Sadler-Smith, 2006; Simon, 2006)                                |
| 2008 | 3               | (Caughron & Mumford, 2008; Lundin, 2008; Reich et al., 2008)                 |
| 2009 | 2               | (Buijs et al., 2009; Sundström & Zika-Viktorsson, 2009)                      |
| 2011 | 1               | (Dayan & di Benedetto, 2011)                                                 |
| 2013 | 1               | (Cullmann, 2013)                                                             |
| 2014 | 1               | (Maier & Branzei, 2014)                                                      |
| 2015 | 2               | (Dutt, 2015; Marcella & Rowley, 2015)                                        |
| 2016 | 3               | (Bélanger et al., 2016; Malmelin & Virta, 2016; Nadal-Burgues & Bonet, 2016) |
| 2017 | 1               | (Bérubé & Gauthier, 2017)                                                    |
| 2020 | 2               | (Awe & Church, 2020; Sanz-Llopis & Ostermann, 2020)                          |
| 2021 | 2               | (Bérubé & Gauthier, 2021; Carmeli et al., 2021)                              |
| 2022 | 1               | (Leone & Reiter-Palmon, 2022)                                                |

**Table 2**

Research on the creativity in project management over time.

| Research Focus                         | Period 1 2002 - 2010                                                                                   | Period 2 2011 - 2022                                                                                                                                                                                                          |
|----------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Creative project management</b>     | Mind Maps<br>Creative problem-solving<br>Innovative practices                                          | Mind Maps<br>Innovation Challenge Canvas                                                                                                                                                                                      |
| <b>Creativity management</b>           | Creativity management practices<br>Creative problem-solving<br>Effects of project management practices | Creativity management practices<br>Creative problem-solving<br>Effects of project management practices<br>Intuition<br>Motivations and constraints to creativity<br>Project flexibility and creativity<br>Project performance |
| <b>Management of creative projects</b> | Permanent change<br>Project management in creative industries                                          | Permanent change<br>Project management in creative industries<br>Innovation<br>Effects of project management practices                                                                                                        |

**Table 3**

Number of articles on creativity between 2002 and 2022, by the object of study.

|          |       | Creative project management (CPM) |                          | Creativity Management (CM) |                                   | Management of creative projects (MCP) |                                 |
|----------|-------|-----------------------------------|--------------------------|----------------------------|-----------------------------------|---------------------------------------|---------------------------------|
|          |       | <i>Creative practices</i>         | <i>Creative thinking</i> | <i>Creative process</i>    | <i>Team/Individual creativity</i> | <i>Creative organizations</i>         | <i>Creative results and NPd</i> |
| Period 1 | 2002  | 1                                 |                          |                            |                                   |                                       | 1                               |
|          | 2006  |                                   | 1                        | 1                          | 1                                 | 1                                     |                                 |
|          | 2008  | 1                                 | 1                        | 1                          | 1                                 | 1                                     |                                 |
|          | 2009  |                                   |                          | 1                          | 2                                 |                                       | 1                               |
| Period 2 | 2011  |                                   |                          |                            | 1                                 |                                       | 1                               |
|          | 2013  |                                   |                          | 1                          |                                   | 1                                     |                                 |
|          | 2014  |                                   |                          | 1                          | 1                                 | 1                                     |                                 |
|          | 2015  | 1                                 |                          |                            |                                   | 1                                     |                                 |
|          | 2016  |                                   |                          | 1                          | 2                                 | 1                                     | 1                               |
|          | 2017  |                                   |                          | 1                          |                                   | 1                                     |                                 |
|          | 2020  | 1                                 |                          | 1                          |                                   |                                       | 1                               |
|          | 2021  |                                   |                          | 1                          | 2                                 | 1                                     |                                 |
|          | 2022  |                                   |                          | 1                          | 1                                 |                                       |                                 |
|          | Total | 4                                 | 2                        | 10                         | 11                                | 8                                     | 5                               |

journal where “Creativity in project management” received more attention. This was somewhat expected since the IJPM is the highest-rated journal in project management (percentile 95th, Scopus 2022).

The articles reviewed, either implicitly or explicitly, point us to three different topics of study: “Creative project management,” “Management of creative projects,” and “Creativity management.” “Creative project management” refers to the creative practices performed by the project manager, which aim to improve the project’s potential for success. “Management of creative projects” alludes to applying project management tools and techniques to creative organizations (of industries such as fashion, marketing, arts, etc.) or to projects whose expected outcome is an innovation. The term “creativity management” is applied to the control and enhancement of the creative process and creative thinking in project teams.

**Table 4**  
List of articles by theme.

|                                     | Creative project management (CPM) |                          | Creativity management (CM) |                                   | Management of creative projects (MCP) |                                 |
|-------------------------------------|-----------------------------------|--------------------------|----------------------------|-----------------------------------|---------------------------------------|---------------------------------|
|                                     | <i>Creative practices</i>         | <i>Creative thinking</i> | <i>Creative process</i>    | <i>Team/Individual creativity</i> | <i>Creative organizations</i>         | <i>Creative results and NPD</i> |
| (Alexander, 2002)                   |                                   |                          |                            |                                   |                                       | X                               |
| (Brown & Lee Hyer, 2002)            | X                                 |                          |                            |                                   |                                       |                                 |
| (Simon, 2006)                       |                                   |                          | X                          | X                                 | X                                     |                                 |
| (Leybourne & Sadler-Smith, 2006)    |                                   | X                        |                            |                                   |                                       |                                 |
| (Reich et al., 2008)                | X                                 |                          |                            |                                   |                                       |                                 |
| (Caughron & Mumford, 2008)          |                                   | X                        |                            |                                   |                                       |                                 |
| (Lundin, 2008)                      |                                   |                          | X                          | X                                 | X                                     |                                 |
| (Sundström & Zika-Viktorsson, 2009) |                                   |                          | X                          | X                                 |                                       | X                               |
| (Buijs et al., 2009)                |                                   |                          |                            | X                                 |                                       |                                 |
| (Dayan & di Benedetto, 2011)        |                                   |                          |                            | X                                 |                                       | X                               |
| (Cullmann, 2013)                    |                                   |                          | X                          |                                   | X                                     |                                 |
| (Maier & Branzel, 2014)             |                                   |                          | X                          | X                                 | X                                     |                                 |
| (Dutt, 2015)                        | X                                 |                          |                            |                                   |                                       |                                 |
| (Marcella & Rowley, 2015)           |                                   |                          |                            |                                   | X                                     |                                 |
| (Bélanger et al., 2016)             |                                   |                          | X                          |                                   |                                       | X                               |
| (Malmelin & Virta, 2016)            |                                   |                          |                            | X                                 | X                                     |                                 |
| (Nadal-Burgues & Bonet, 2016)       |                                   |                          |                            | X                                 |                                       |                                 |
| (Bérubé & Gauthier, 2017)           |                                   |                          | X                          |                                   | X                                     |                                 |
| (Sanz-Llopis & Ostermann, 2020)     | X                                 |                          |                            |                                   |                                       | X                               |
| (Awe & Church, 2020)                |                                   |                          | X                          |                                   |                                       |                                 |
| (Bérubé & Gauthier, 2021)           |                                   |                          |                            | X                                 | X                                     |                                 |
| (Carmeli et al., 2021)              |                                   |                          | X                          | X                                 |                                       |                                 |
| (Leone & Reiter-Palmon, 2022)       |                                   |                          | X                          | X                                 |                                       |                                 |

After analyzing the literature, we can point out that the literature on “creativity” in the context of project management is not only focused on the project manager; on the contrary, the organizational and team perspectives are also well represented. Supporting this, “Creative project management” (CPM) is addressed in six articles, “Management of creative projects” (MCP) in 15, and “Creativity management” (CM) in 13 studies. Some articles address more than one theme.

## 5. A retrospective look at the development of the field over the years

We noted that the understanding of the topic has been evolving, so it is helpful to analyze how the research on creativity in project management has developed over the years. Table 2 portrays trends regarding creative project management, creativity management, and management of creative projects. The framework involves two periods. Period 1 (2002–2010) shows more limited investigation on the theme, with less diversity of topics researched, where we can note a focus on the project manager role. In this period, Buijs et al. (2009) are the only ones who directly pay attention to team members’ creativity. On the other hand, Period 2 (2011–2022) is much more divergent in its content. During this time, despite the different topics studied, we can notice that the research focus was mainly on “Creativity management,” with special attention to individuals’ creativity. The subject “Management of creative projects” is well represented in both periods.

### 5.1. Research themes

Table 3 reveals that the preferred theme of authors researching creativity in project management is “Creativity management,” and “Creative project management” is the opposite.

To deepen the results, we divided these topics into sub-topics because we noticed that even those articles with the same research focus could refer to distinct aspects. Examples of this are the works of Brown and Lee Hyer (2002) and Caughron and Mumford (2008), where the goal of the former is to present how to use the “mind mapping” tool, and the focus of the latter is to examine the influence of formal planning techniques into creative problem-solving. However, both refer to “Creative project management.”

We identified the sub-topics of study “Creative practices” and “Creative thinking” in CPM, “Creative process” and “Team/Individual creativity” in CM, and MCP has “Creative organizations” and “Creative results and New Product Development (NPD).” The findings presented in Table 3 support the idea that studies on creativity in project management often focus on creativity management, giving almost no attention to creative project management. We observed that researchers did not address project managers’ creative thinking after 2008. To note also that very few studies focused on managing creative results and new product development.

Table 4 lists the articles by theme. This provides an interesting view of the development of the field. For instance, rare research cases link creative project management with other topics. The article of Sanz-Llopis and Ostermann (2020) is an exception since it focuses on CPM (creative practices) and MCP (creative results and NPD).

## 5.2. Research methods

The literature on creativity in project management reveals a mix of conceptual and empirical research on the topic, as reported in the articles. Eight conceptual studies have examined the role of creativity in project management from a theoretical perspective. In addition, 15 empirical studies have used various research methods, such as case studies (eight studies), surveys (four studies), ethnographic (one study), interviews (one study), and experiments (one study).

Despite the variety of methods, we should point out that this does not necessarily represent diversity. By far, case studies and surveys are the preferred methodologies of researchers, representing 12 out of 15 articles.

## 5.3. Data collection techniques

Investigators researching creativity in project management tend to use questionnaires as the main data collection technique (eight studies). In a few cases, the data gathering was through observation (three studies) or documental analysis (two studies). [Malmelin and Virta \(2016\)](#) used a distinguishable technique, giving a diary to the study participants so they could register their daily thoughts on the experience for posterior analysis. Some researchers adopted a multi-faceted approach to collect data.

## 5.4. Samples used

Typically, researchers conducting empirical research in project management prefer a large sample because of the dominant “objectivist” tradition ([Ika, 2009](#)). However, in this case, the sample size varies significantly from one study to another.

When we analyze articles from the perspective of cases, rarely a study has more than 10 cases, and the most common is just one case. Only one study draws from a sample superior to 10 (the case of [Bérubé and Gauthier \(2021\)](#), with 11 companies).

In the case of interviews or questionnaire-based surveys, sample sizes range between 1 and 611, with an average of 151 individuals.

The diversity of projects in the sample is also noteworthy. They include video games, multimedia, advertising, industry, media, fashion, circus, insurance, and education projects. Note that the entire set of samples covers almost the whole globe; the African continent is the only one without studies, and the American continent is the most represented.

## 5.5. Data analysis techniques

Research on creativity in project management is mostly qualitative, relying on rich data (11 studies). Therefore, content analysis methodologies are common. Note that researchers follow similar procedures: after collecting the data, the data is encoded to produce key concepts and terms that investigators can work on. Only two out of eleven qualitative research studies identify the tools used for encoding (Atlas.ti and Nivo software). Once again, [Malmelin and Virta's \(2016\)](#) study should be mentioned because it uses a different technique – the critical incident method – which is a qualitative research method that is particularly well suited for analyzing human activity and organizational practices, including creativity and innovation ([Malmelin & Virta, 2016](#)).

The quantitative research studies (four) use descriptive statistics to obtain results on central tendency and dispersion (e.g., mean, median, standard deviation, etc.). In addition, some studies use inferential statistics to test hypotheses. For this, researchers use correlation and regression models. [Awe and Church \(2020\)](#) mention Smart PLS, a software for structural equation modeling using the partial least squares path modeling method.

# 6. Discussion

## 6.1. Importance of creativity in project management

Creativity is vital in project management, as it allows the generation of new and innovative ideas, both in a team or individually, that can help solve problems and improve processes.

As [Dutt \(2015\)](#) emphasized, “thinking” is the fundamental building block of creativity, and techniques such as mind mapping, framing, and redefining challenges are fundamental to fostering creativity, as this allows the consideration of alternative possibilities, which can facilitate innovation ([Sanz-Llopis & Ostermann, 2020](#)).

As [Brown and Lee Hyer \(2002\)](#) pointed out, a team that “jumps to solution” too quickly without exploring alternatives may miss out on more creative options and fail to consider less expensive and potentially more promising approaches in a project. On the other hand, [Leybourne and Sadler-Smith \(2006\)](#) state that creativity is a component of improvisation. Project managers should rely on this and trust their initial feelings and impressions of something. These opposite ways of thinking can work in harmony if the idea of [Leybourne and Sadler-Smith \(2006\)](#) is used to decide which techniques the team will adopt to define the problem and generate solutions. This can also be supported by the theory of [Nadal-Burgues and Bonet \(2016\)](#), who use judgment as a source of organizational change, innovation, and creativity.

According to [Awe and Church \(2020\)](#), organizations need project managers who can quickly adapt to changing project management scenarios in today's project management world. Furthermore, [Cullmann \(2013\)](#) states that creativity management is permanent change management. These are some of the most distinctive aspects of industries that rely on creativity and innovation. To adapt, managers need to be creative, generate new and novel ideas, and be flexible when converting ideas into action ([Awe & Church, 2020](#)).

However, project managers not only need to be creative, but they also need to understand that teams' creativity and innovation are

valuable assets in any business. [Bélanger et al. \(2016\)](#) note that the goals of creativity and innovation are essentially accomplished by manipulating three creative factors: team motivation, resource management, and knowledge management. [Simon \(2006\)](#) goes deeper on this matter, noting that project managers should establish a common understanding and shared meaning among team members, reinforce sense-making activities through the development of a communication infrastructure and social context that favors learning and knowledge sharing, and help increase individual engagement and motivation, by developing and maintaining an environment where team members can participate, get involved, and feel challenged according to their talents.

Problem-solving skills and creative thinking depend on creativity and will always be crucial for organizational success. Teams who actively define problem constraints, manage project timelines, promote psychological safety, define criteria, and reduce cognitive fixation have an increased focus on the production of creative ideas, solutions, or products ([Leone & Reiter-Palmon, 2022](#); [Maier & Branzei, 2014](#)). Intriguingly, [Dayan and Di Benedetto \(2011\)](#) state that the more turbulent the environment is, the more a team will be unable to make cognitive decisions based on known environmental information and will be forced to rely on a greater extent on intuition and creativity. Also, [Lundin \(2008\)](#) and [Sundström and Zika-Viktorsson \(2009\)](#) found that creativity and innovation benefit from pressure and that deadlines provide a good incentive not only for getting things done on time but also for cutting corners and finding better solutions or new ways to get done.

Answering our research question, it is clear that creativity is critical for project management, allowing the generation of innovative ideas and solutions to problems, not only on the manager's side but on the team's side, too. [Bérubé and Gauthier \(2021\)](#) mention that it is imperative to consider the industry context when managing projects.

The project manager should establish and maintain a compromise between creative and management values in creative industries. The typical management tools will create tension and possibly eliminate team creativity if this does not happen. The project manager should be able to "think out of the box" by adopting new and creative techniques to foster the team's creativity. However, it is equally important for the manager to know how to support creativity and enhance team members' creative thinking, innovation, and problem-solving thinking. For this, the leader should control resources, team motivation, knowledge, and other project details (like deadlines) that can enhance creativity.

## 6.2. Research themes related to creativity in project management

The review of creativity in project management revealed three main research themes: Creative project management, Creativity management, and Management of creative projects. These can also be viewed as research streams.

Two lines of research have emerged in the study of "Creative project management": "Creative practices" and "Creative thinking." Regarding the use of "Creative practices," [Dutt \(2015\)](#) realized that there is an undeniable need to add value to the existing project management practices, which have seemingly relied on a linear thought process over the decades. For instance, the author states that Mind Maps fit well into the project management tools and techniques aiming to improve the potential for project success.

Using this, project managers can achieve a more balanced approach – a combination of analytical and creative thinking, labeled "whole-brain thinking" ([Brown & Lee Hyer, 2002](#)). [Sanz-Llopis and Ostermann \(2020\)](#) also noted the need to investigate new creative practices, so the authors developed the "framing and challenge redefinition" approach to generate more innovative and creative solutions. [Caughron and Mumford \(2008\)](#) examined the impact of formal planning techniques on planners' creative problem-solving. [Leybourne and Sadler-Smith \(2006\)](#) investigated the role of improvisation and how it relates to project planners' creative thinking.

To sum up, "Creative practices" refers to innovative techniques or tools that project managers can use to generate more value for projects by improving teams' performance and designing better solutions, and "Creative thinking" can be defined as the ability to generate unique and innovative solutions to problems and challenges that arise during a project. We want to highlight that these two concepts, as part of "Creative project management," must be considered together to add more value to projects (from a practical perspective) and increase the knowledge on the topic of creative project management in future research.

Regarding "Creativity management," two lines of research were also identified: "Creative process" and "Team/individual creativity." [Bélanger et al. \(2016\)](#) investigated how creativity can help sustain continuous innovation in new product development. They developed a conceptual framework on how firms should manage the creative process to promote innovation, which identified three key factors: information management, project management, and the integration of the two distinct processes of creativity and innovation. About the "Creative process," [Cullmann \(2013\)](#) analyzed the management of the unexpected and the unknown and of permanent change as structural elements of creativity management in projects. The author realized that ephemeral creative teams link innovation, idea generation, and the management of the unknown and change. [Leone and Reiter-Palmon \(2022\)](#) also recognized the complexity of managing teams of individuals who are tasked with creative problem-solving while confronting complex issues and ambiguous situations and developed a set of best practices recommendations, like defining project constraints and managing project timelines, for leaders to increase their teams' performance during each process.

In "Creativity management," we also found research on managing individual and team creativity. [Simon \(2006\)](#) argues that project managers play a key role in fostering creativity by acting as sense-makers and establishing a common understanding among team members. They also serve as web-weavers, reinforcing sense-making activities through developing a communication infrastructure and social context that favors learning and knowledge sharing. By maintaining and developing the common ground as a playground where team members can participate, get involved, and feel challenged according to their talents, project managers can help increase individual engagement and motivation. Additionally, by emphasizing the quality of the experience and the pursuit of "flow" while maintaining a balance between challenges and support, project managers can help teams perform at their best. [Awe and Church \(2020\)](#) examined the direct influence of social factors on the project's flexibility and creativity and the importance of providing organizational support through training initiatives to influence the communication environment. [Carmeli et al. \(2021\)](#) indicate that high-quality

relationships between team members facilitate both learning and access to knowledge, which in turn are positively related to team resilience. Team resilience, in turn, is indirectly related to project performance through creative problem-solving. Team resilience can be described as the team's ability to deal with problems, overcome obstacles, or resist the pressure caused by adverse situations without collapsing (Lengnick-Hall & Beck, 2009; Varajão et al., 2021). It is also known that motivation plays a key role in team members' creativity, so Malmelin and Virta (2016) contributed to research on creativity by identifying that creative professionals are moved by the opportunity to develop new skills and competencies as well as create new projects.

Summing up, "Creativity management" has two perspectives: the creative process and individual or team creativity management. The first refers to managing the process of generating and developing new ideas into innovative products or solutions. It includes managing information, projects, and the integration of creativity and innovation. Managers also need to take into consideration the factors that can affect the process and that can, at the same time, improve creativity. Conversely, managing individual or team creativity includes fostering creativity through sense-making and knowledge sharing, providing organizational support, and promoting motivation and team resilience. Moreover, it includes understanding the influence of social factors on creativity and the importance of training initiatives and high-quality relationships between team members.

"Management of creative projects" refers to applying project management tools and techniques to creative organizations or industries. However, the reviewed literature shows different points of view on this topic. Bérubé and Gauthier (2017) realized that there is a tension between creative activities and project management activities in creative industries and that project managers should develop a compromise as a contingency factor in the competitive positioning of these organizations in the creative market. Bérubé and Gauthier (2021) reinforce the literature on this compromise by concluding that it is achievable if project managers focus not only on instrumental project management principles but also on the satisfaction and daily support of creative workers and an educational-type relationship with customers. Marcella and Rowley (2015) investigated the extent to which project management tools and techniques can be effectively applied across the creative industries. The authors concluded that managers must face some challenges: a need to be flexible and reactive, reflecting on success and lessons learned, and tension between the creative and analytical mindsets. Given the tension between creative and project management values, achieving a compromise is a condition for the viability of projects in creative industries. Simon (2006) also recognized the need to look at the concrete activities of project managers involved in creative industries. He suggested that project managers should act as sense-makers, web weavers, game-masters, and flow-balancers. Creative industries, particularly in the television and movie sectors, are characterized by having large-scale projects, and Maier and Branzei (2014) noted that these projects are demanding to keep on time and budget, mainly when they rely on creative contributions from multiple individuals and groups that cannot be precisely timed.

Regarding "Creative results and NPD" research, Alexander (2002) argues that applying project management disciplines to new product development projects is challenging, given the unpredictability inherent to the creative process. Bélanger et al. (2016) state that the pace of innovation is accelerated in the context of continuous innovation. The authors focused on how creativity helps to sustain continuous innovation in new product development and developed a framework on how firms can combine creativity and innovation processes to maintain continuous innovation in new product development. About this, Sundström and Zika-Viktorsson (2009) investigated the factors that support the generation of new and innovative ideas as well as the efficient evaluation and implementation of ideas into a product and realized that a clear vision, accompanied by freedom in the realization of that vision, transparency in the product architecture, enhanced communication and problem ownership, all support a project team's performance and enhance innovation. According to Dayan and di Benedetto (2011), in a turbulent environment, NPD project teams may rely more on intuitive judgments, and other factors such as experience and stress may also influence the relationship between team intuition and team decision-making. The authors tested hypotheses regarding team intuition, stress, environmental turbulence, and new product creativity. They concluded that there is a positive linear relation between turbulent conditions (both market and technical) and team intuition and an inverted U-shaped team intuition–new product creativity relation for teams with high experience and low stress.

In brief, on the topic of "Management of creative projects," the literature has advanced with two perspectives: "Creative organizations" management and "Creative results and new product development" management. The first refers to applying project management tools and techniques to organizations in creative industries, such as television and movie production. Research has shown tension between creative and project management activities in these industries, and project managers must find a compromise between the two to succeed. This compromise can be achieved by focusing on instrumental project management principles, creative workers' satisfaction, and daily support. The second refers to managing the creative process of developing new products. It highlights the key factors that negatively and positively impact creativity and innovation and contribute to project management and organizational practices that enhance new product development. It is important to notice that to achieve creative results and NPD, the management of creative organizations and the management of creative results and NPD are closely related, and both are essential to the success of projects.

## 7. Conclusion

This scoping literature review provides a comprehensive perspective on creativity in project management, answering the following questions: "Why is creativity important in project management?" and "What are the main research themes related to creativity in project management?" The results reflect the state of the art and ground future research on this important topic.

### 7.1. Contributions to theory and practice

Creativity is a vital aspect of project management (Dutt, 2015). The findings of this research contribute to a better understanding of

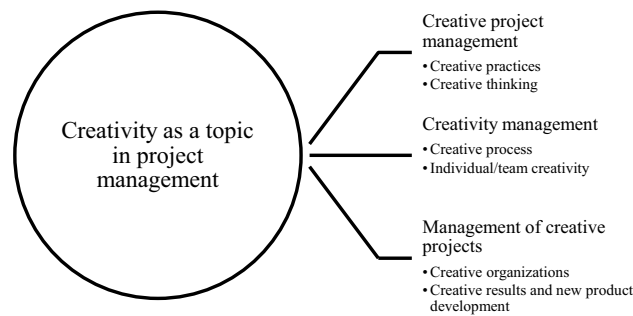


Fig. 4. Major research streams in creativity in project management.

the role of creativity in project management. We also contribute with the identification of three major research streams as depicted in Fig. 4: “Creative project management,” “Creativity management,” and “Management of creative projects.” The first refers to the use of innovative techniques and tools that project managers can apply to generate more value for projects, as well as to the ability to create creative solutions to problems and challenges that arise during a project. The second alludes to the management of the process of generating new ideas and developing them into innovative products or solutions, the management of teams’ creativity, and how to foster creative thinking. The third refers to applying project management tools and techniques to organizations in creative organizations and industries and managing the creative process for new product development.

These concepts provide a good framework for organizing future research (for instance, we recommend that researchers mention these concepts in the title or in the keywords of their works to help classification). This “categorization” of research is also helpful for project managers so they can find the answers to their project management challenges related to creativity straightforwardly. Overall, our article contributes with a detailed overview of the research on this topic, providing insights on how project managers can be more creative, foster teams’ creativity, and act in creative organizations so that their projects can achieve better results.

Furthermore, we acknowledge the scarce research on creative project management in educational settings. The jobs of the 21st century will need workers who have flexibility, adaptability, innovativeness, and creativity (Burnard et al., 2022). In other words, employers will place an even higher premium on creativity in the workforce in the future. Developing creativity skills during project management education is then crucial (Kuo et al., 2017), and our results can also help define training courses.

## 7.2. Strengths and limitations

A strength of our study is the use of a scoping review and analysis process, limiting selection and results bias. Another relevant strength is that our research organizes and provides key concepts and themes to the topic in consideration. In addition, we also identify gaps in current research and areas that need further study. A limitation of this study is that, due to resource constraints, the literature review had to be limited to only scientific outlets, namely journals. As expected, we do not claim that this study represents every publication on the topic. However, every attempt was made to include as many important and relevant publications as possible in an unbiased manner.

## 7.3. Future research directions

There is significant work to be done in the context of creativity in project management. We realized that the topic of “Creative project management” needs more attention from researchers since it only represents a small percentage of the literature identified. We recommend future research on this topic to focus on developing new creative tools and techniques that can help the management process. Also, it is crucial to gather more knowledge on how psychological factors can affect creative problem-solving in project management. Adding to this, we also realized that only one study about creative project management links with other topics, so it would be interesting for future researchers to explore questions like “What is the impact on project performance of using creative practices together with conventional project management practices?”; “Is project manager’s creativity a critical factor in individuals’ creative thinking?”; “What is the impact of creative leadership in team performance?”; “What are a creative project manager’s education/training requirements?”; or “What are the influencers of creative solutions in digital transformation projects?” (and projects of other areas).

Creative problem-solving requires both divergent and convergent processes (Wang et al., 2023). However, our literature review shows an emphasis on research focused on divergent thinking but not so much on convergent thinking, demanding more research on the complementary roles of divergent and convergent thinking in project management.

While studying the topic of “Creativity management,” we found a very thin line between creative process management and team or individual creativity management. To understand if this separation presents value to the topic of creativity in project management, future researchers can dig deeper into this subject by researching the relationship between the creative process and creative thinking.

Another research avenue is related to exploring theories of creativity/use of creativity in projects and project management. The surveyed literature shows that this path is less explored in the research and needs more attention, considering the significant impact

that it can have in developing the body of knowledge in project management.

To finalize, we would like to highlight the opportunity for future researchers to explore the concept of creativity management more outside of creative projects or organizations (as, for instance, information systems projects). We concluded that more than 65 % of research about creativity management is linked to creative organizations or projects, so questions like “How can we foster individuals’ creative thinking in a non-creative environment?” should be explored.

### CRedit authorship contribution statement

**Luís Pires:** Writing – original draft, Validation, Investigation, Formal analysis, Data curation. **João Varajão:** Writing – review & editing, Writing – original draft, Validation, Supervision, Methodology, Funding acquisition, Conceptualization.

### Data availability

No data was used for the research described in the article.

### References

- Alexander, G. (2002). How to (almost) schedule innovation. *Research Technology Management*, 45(1), 31–40. <https://doi.org/10.1080/08956308.2002.11671480>
- Amabile, T. M. (2018). Creativity and the labor of love. *The nature of human creativity* (pp. 1–15). Cambridge University Press. <https://doi.org/10.1017/9781108185936.003>
- Amabile, T. M., Dejong, W., Hastie, R., Hershenson, M., Kidd, R., Langer, E., et al. (1983). The social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology*, 45(2), 357–376.
- Avital, B., Hershkovitz, A., & Israel-Fishelson, R. (2023). Associations between computational thinking and figural, verbal creativity. *Thinking Skills and Creativity*, 50, Article 101417. <https://doi.org/10.1016/j.tsc.2023.101417>
- Awe, O. A., & Church, E. M. (2020). Project flexibility and creativity: The moderating role of training utility. *Management Decision*, 59(9), 2077–2100. <https://doi.org/10.1108/MD-02-2020-0226>
- Bélanger, S., Veilleux, S., & Tremblay, M. (2016). A conceptual framework on the role of creativity in sustaining continuous innovation in new product development. *International Journal of Product Development*, 21(2–3), 190–211. <https://doi.org/10.1504/IJPD.2016.078866>
- Bérubé, J., & Gauthier, J. B. (2017). Compromise between creative activities and project management activities: A contingency factor. *Journal of Modern Project Management*, 5(2), 80–87. <https://doi.org/10.19255/JMPM01408>
- Bérubé, J., & Gauthier, J. B. (2021). Managing projects in creative industries: A compromise between artistic and project management values. *Creative Industries Journal*. <https://doi.org/10.1080/17510694.2021.1979278>
- Biesenthal, C., & Wilden, R. (2014). Multi-level project governance: Trends and opportunities. *International Journal of Project Management*, 32(8), 1291–1308. <https://doi.org/10.1016/j.ijproman.2014.06.005>
- Brown, K. A., & Lee Hyer, N. (2002). Whole-brain thinking for project management. *Business Horizons*, 45(3), 47–57. [https://doi.org/10.1016/S0007-6813\(02\)00202-1](https://doi.org/10.1016/S0007-6813(02)00202-1)
- Buijs, J., Smulders, F., & van der Meer, H. (2009). Towards a more realistic creative problem solving approach. *Creativity and Innovation Management*, 18(4), 286–298. <https://doi.org/10.1111/j.1467-8691.2009.00541.x>
- Burnard, P., Colucci-Gray, L., & Cooke, C. (2022). Transdisciplinarity: Re-visioning how sciences and arts together can enact democratizing creative educational experiences. *Review of Research in Education*, 46(1), 166–197. <https://doi.org/10.3102/0091732X221084323>
- Carmeli, A., Levi, A., & Peccei, R. (2021). Resilience and creative problem-solving capacities in project teams: A relational view. *International Journal of Project Management*, 39(5), 546–556. <https://doi.org/10.1016/j.ijproman.2021.03.007>
- Caughron, J. J., & Mumford, M. D. (2008). Project planning: The effects of using formal planning techniques on creative problem-solving. *Creativity and Innovation Management*, 17(3), 204–215. <https://doi.org/10.1111/j.1467-8691.2008.00484.x>
- Cullmann, S. (2013). Creativity and project management: Managing the unexpected and permanent change. *Journal of Modern Project Management*, 1(1), 86–101.
- Dayan, M., & di Benedetto, C. A. (2011). Team intuition as a continuum construct and new product creativity: The role of environmental turbulence, team experience, and stress. *Research Policy*, 40(2), 276–286. <https://doi.org/10.1016/j.respol.2010.10.002>
- Desmond, C. (2015). What if we don't really need project management? *IEEE Engineering Management Review*, 43(2), 14. <https://doi.org/10.1109/EMR.2015.2430431>
- Dutt, M. (2015). Adding value to projects using mind maps. *Journal of Creating Value*, 1(2), 221–234. <https://doi.org/10.1177/2394964315602412>
- Ika, L. A. (2009). Project success as a topic in project management journals. *Project Management Journal*, 40(4), 6–19. <https://doi.org/10.1002/pmj.20137>
- Kuo, H. C., Burnard, P., McLellan, R., Cheng, Y. Y., & Wu, J. J. (2017). The development of indicators for creativity education and a questionnaire to evaluate its delivery and practice. *Thinking Skills and Creativity*, 24, 186–198. <https://doi.org/10.1016/j.tsc.2017.02.005>
- Lengnick-Hall, C., & Beck, T. (2009). Resilience capacity and strategic agility: Prerequisites for thriving in a dynamic environment. C. Nemeth, E. Hollnagel, and S. Dekker (eds.). *Resilience engineering perspectives* (2nd ed.). Aldershot, UK: Ashgate Publishing.
- Leone, S. A., & Reiter-Palmon, R. (2022). Leading creative teams: A process-perspective with implications for organizational leaders. *Translational Issues in Psychological Science*, 8(1), 90–103. <https://doi.org/10.1037/tps0000296>
- Leybourne, S., & Sadler-Smith, E. (2006). The role of intuition and improvisation in project management. *International Journal of Project Management*, 24(6), 483–492. <https://doi.org/10.1016/j.ijproman.2006.03.007>
- Liu, Z., & Schonwetter, D. J. (2004). Teaching creativity in engineering. *International Journal of Engineering Science*, 20(5), 801–808.
- Lundin, R. A. (2008a). The beauty and the beast – on the creativity/project management encounter. *International Journal of Managing Projects in Business*, 1(2), 206–215. <https://doi.org/10.1108/17538370810866331>
- Lundin, R. A. (2008b). The beauty and the beast – on the creativity/project management encounter. *International Journal of Managing Projects in Business*, 1(2), 206–215. <https://doi.org/10.1108/17538370810866331>
- Maier, E. R., & Branzei, O. (2014). On time and on budget”: Harnessing creativity in large scale projects. *International Journal of Project Management*, 32(7), 1123–1133. <https://doi.org/10.1016/j.ijproman.2014.02.009>
- Malmelin, N., & Virta, S. (2016). Managing creativity in change: Motivations and constraints of creative work in a media organisation. *Journalism Practice*, 10(8), 1041–1054. <https://doi.org/10.1080/17512786.2015.1074864>
- Marcella, M., & Rowley, S. (2015). An exploration of the extent to which project management tools and techniques can be applied across creative industries through a study of their application in the fashion industry in the North East of Scotland. *International Journal of Project Management*, 33(4), 735–746. <https://doi.org/10.1016/j.ijproman.2014.12.002>
- Montuori, A. (2003). The complexity of improvisation and the improvisation of complexity: Social science, art and creativity. *Human Relations*, 56(2), 237–255. [www.sagepublications.com](http://www.sagepublications.com).
- Nadal-Burgues, N., & Bonet, E. (2016). Managing research projects: The rhetoric of judgment as a source of creativity. *Journal of Organizational Change Management*, 29(1), 46–58. <https://doi.org/10.1108/JOCM-11-2015-0223>

- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., et al. (2021). PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *BMJ Clinical Research Edition*, 372(160), 1–36. <https://doi.org/10.1136/bmj.n160>
- Plucker, J. A., Beghetto, R. A., & Dow, G. T. (2004). Why isn't creativity more important to educational psychologists? Potentials, pitfalls, and future directions in creativity research. *Educational Psychologist*, 39(2), 83–96. [https://doi.org/10.1207/s15326985Sep3902\\_1](https://doi.org/10.1207/s15326985Sep3902_1)
- PRISMA (2018). PRISMA extension for scoping reviews, preferred reporting items for systematic reviews and meta-analyses, <http://www.prisma-statement.org/Extensions/ScopingReviews>.
- Puryear, J. S., & Lamb, K. N. (2020). Defining creativity: How far have we come since plucker, beghetto, and dow? *Creativity Research Journal*, 32(3), 206–214. <https://doi.org/10.1080/10400419.2020.1821552>
- Reich, B. H., Sauer, C., & Wee, S. Y. (2008). Innovative practices for IT projects. *Information Systems Management*, 25(3), 266–272. <https://doi.org/10.1080/10580530802151210>
- Sampaio, S., Wu, Q., Cormican, K., & Varajão, J. (2022). Reach for the sky: Analysis of behavioral competencies linked to project success. *International Journal of Managing Projects in Business*, 15(1), 192–215. <https://doi.org/10.1108/IJMPB-09-2020-0276>
- Sanz-Llopis, J., & Ostermann, M. (2020). Innovation in project management through framing and challenge redefinition. *International Journal of Managing Projects in Business*, 13(4), 745–766. <https://doi.org/10.1108/IJMPB-08-2019-0210>
- Saunders, M. N. K., Lewis, P., & Thornhill, Adrian. (2007). *Research methods for business students*. Financial Times/Prentice Hall.
- Simon, L. (2006). Managing creative projects: An empirical synthesis of activities. *International Journal of Project Management*, 24(2), 116–126. <https://doi.org/10.1016/j.ijproman.2005.09.002>
- Singh, N., & Varshney, U. (2020). IT-based reminders for medication adherence: Systematic review, taxonomy, framework and research directions. *European Journal of Information Systems*, 29(1), 84–108. <https://doi.org/10.1080/0960085X.2019.1701956>
- Sternberg, R. J. (2006). Creating a vision of creativity: The first 25 years. *Psychology of Aesthetics, Creativity, and the Arts*, S(1), 2–12. <https://doi.org/10.1037/1931-3896.s.1.2>
- Sundström, P., & Zika-Viktorsson, A. (2009). Organizing for innovation in a product development project. Combining innovative and result oriented ways of working - A case study. *International Journal of Project Management*, 27(8), 745–753. <https://doi.org/10.1016/j.ijproman.2009.02.007>
- UM. (2024). *Knowledge synthesis & systematic reviews*. University of Manitoba. <https://libguides.lib.umanitoba.ca/RFHS-KSupport>.
- Varajão, J., Fernandes, G., Amaral, A., & Gonçalves, A. M. (2021). Team resilience model: An empirical examination of information systems projects. *Reliability Engineering and System Safety*, 206. <https://doi.org/10.1016/j.res.2020.107303>
- Varajão, J., Magalhães, L., Freitas, L., & Rocha, P. (2022). Success management – from theory to practice. *International Journal of Project Management*, 40(5), 481–498. <https://doi.org/10.1016/j.ijproman.2022.04.002>
- Wang, X., Hommel, B., Colzato, L., He, D., Ding, K., Liu, C., et al. (2023). The contribution of divergent and convergent thinking to visual creativity. *Thinking Skills and Creativity*, 49, Article 101372. <https://doi.org/10.1016/j.tsc.2023.101372>

Luís Pires has an Integrated Master in Engineering and Management of Information Systems (MIEGSI) from the University of Minho. He has experience in project management in multi-cultural settings.

João Varajão is currently a professor of Information Systems (IS) and Project Management (PM) at the University of Minho. He is also a researcher at the ALGORITMI/LASI center. His current research interests are in IS PM and IS Development (addressing, particularly, IS and PM success). Before joining academia, he worked as an IS consultant, project manager, IS analyst, and software developer, for private companies and public institutions. He has published numerous refereed publications, authored books, edited books, as well as book chapters and communications at conferences. He serves as editor-in-chief, associate editor, and member of committees for conferences and international journals. ORCID: <https://orcid.org/0000-0002-4303-3908>