Navigating the Dark Side of Projectification

Strategies and Resources Shaping the Overall Well-being of Project Workers

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Doctoral Dissertations at the University of Agder 474

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Dissertation for the degree philosophiae doctor (Ph.d.)

University of Agder
School of Business and Law
2024

Doctoral dissertations at the University of Agder No. 474
ISSN: 1504-9272
ISBN: 978-82-8427-191-0

Print: Make!Graphics
Kristiansand

Dedicated to my late father and late mother

Acknowledgments

Gratitude permeates my heart as I reflect on the profound support from numerous individuals who played pivotal roles in my Ph.D. journey. I appreciate my supervisor, Professor Andreas Wald, whose guidance and invaluable feedback were instrumental in navigating the intricate theoretical and practical challenges inherent in this research project. His invaluable input clarified my thought processes and allowed me to evolve as a research scientist. I am indebted to him for his patience, trust, and priceless support.

I am also grateful to the participants in this study who shared their valuable experiences, time, trust, and insights. In addition, I thank the employers, organizations, and individuals who helped me distribute the survey, reach out to respondents, and create the necessary time for them to participate in my research. The value of this research is a direct result of the collective experiences, focused wisdom, and efforts of the various respondents.

My sincere gratitude is also extended to Professor Roy Mersland, the director of the Ph.D. program. His invaluable support and guidance were instrumental in ensuring the progression of my doctoral project. In addition, I am grateful to the professors at the Business School and Law at the University of Agder who shared their knowledge through the doctoral courses. I would also like to thank the other faculty members and administrative staff who were my esteemed colleagues and collaborators when I was the study program coordinator of two bachelor programs while pursuing my doctoral studies. I am deeply grateful to them for their invaluable support, especially during the COVID-19 pandemic.

Furthermore, I express my sincere gratitude to my fellow Ph.D. students who supported me and served as cheerleaders, confidants, and sounding boards throughout this journey. I am particularly grateful to Samuel, Mette, Ahmad, Øystein, Linda, Felicia, Judith, Joseph, Naome, and Gordon. Your friendship, consistent support, and memorable moments were a source of great comfort. I want to extend a special note of appreciation to Samuel Anokye Nyarko for his exceptional friendship and support. Thank you for always believing in me and encouraging me to embark on and complete this Ph.D. journey. I also appreciate the support of friends beyond the university setting, particularly Bjørg Lillian,

Marcela, Akemi, and Calvin. My gratitude encompasses the depth of our friendship and the various ways you have generously helped me. Thank you all for your enduring friendship and thoughtful support.

Finally, and most importantly, I would like to express my deepest gratitude to my family for their immense support. Their love and encouragement have been the cornerstone of my success. I am immensely grateful to my siblings Karina, Gabriela, Mauricio, and Miguel, as well as my grandmother and sisters-in-law Liliana and Laura, for their prayers and endless support. My nephews and nieces, Gerardo, Eduardo, Ricardo, Estella Amanda, Aaron Mikael, and Aliisa Olivia Aguilar, and my siblings' love and support mean the world to me and made this possible. They are my pillars of strength and motivation. I am truly fortunate and ever grateful.

I dedicate my doctoral dissertation to my late father, Miguel Aguilar Penagos, and my late mother, Blanca Estella Velasco Utrilla. Their immense love molded me into the person I am today. My gratitude knows no bounds, and this achievement is a testament to their indelible impact on my life.

Maria Magdalena Aguilar Velasco
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Table of Contents

List of Abbreviations

e.g.,	For example (From Latin *exempli gratia*)
i.e.,	That is (from Latin *id est*)
etc.	And so forth (from Latin *et cetera*)
p.	Page
vs.	Versus
SLR	Systematic Literature Review
M	Mean
SD	Standard Deviation
df	Degree of Freedom
N	Total number of participants
p	Probability (significance) level
t	*t*-value
Sig.	Significant
n.s.	No significant
β	Beta Coefficient
AVE	Average Variance Extracted
CR	Composite Reliability
CIs	Coefficient Intervals
α	Cronbach's Alpha
VIF	Variance Inflation Factor
CMB	Common Method Bias
HTMT	Heterotrait- Monotrait Ratio
RMSE	Root Mean Square Error
R^2	Percentage of Variance Explained
f^2	Effect Sizes
Q^2	Predictive Relevance
HOC	Higher Order Construct
H	Hypothesis
RQ	Research Questions
SEM	Structural Equation Modeling
PLS-SEM	Partial Least Square Structural Equation Modeling
SmartPLS	Variance-based Structural Equation Modeling Software
O&G	Oil and Gas
E&P	Exploration and Production

PMI	Project Management Institute
IMPA	International Project Management Association
TO	Temporary Organization
PO	Permanent Organization
PBO	Project Based Organization
APMM	Agile Project Management Methodologies
PsyCap	Psychological Capital
P-FC	Problem-Focused Coping
E-FC	Emotion-Focused Coping
F-OC	Future-Oriented Coping
F-TO	Future-Time Orientation
JD-R	Job Demand and Resources Theory
COR	Conservation of Resources Theory
TSM	Transaction Stress Model Theory
CMR-E	Cognitive-motivational-relational theory of emotion
PVM	Proactive Vitality Management
WHO	World Health Organization
ICD-11	11th Revision of the International Classification of Diseases

Abstract

This dissertation comprises three interconnected studies that delve into the intricate dynamics of project work and their potential detrimental implications for individual project workers. Study 1 systematically reviews the literature to identify macro-, meso-, and micro-level determinants of negative aspects of project work and their consequences for overall well-being. It highlights prevalent theories and offers future research directions.

Building upon Study 1's findings, Study 2 investigates the roles of psychological capital (PsyCap) and social support in mitigating the adverse effects of project work. On the basis of a cross-sectional online survey of 304 project workers, the study reveals that workplace and family support and PsyCap play crucial roles in preventing adverse outcomes. The study underscores the resource-gain mechanism between support and PsyCap, contributing novel insights to project management research.

Study 3 explores coping strategies through semi-structured interviews with 37 project workers. The findings indicate that senior and future-oriented project workers employ adaptive strategies, such as job crafting and proactive vitality management. By contrast, early-career project workers and those who strive for perfection often resort to maladaptive coping methods. The study calls for further exploration of the environmental and individual factors that affect coping mechanisms.

A cohesive theme across the studies is the pivotal role of social and psychological resources in confronting the challenges of project work. The systematic literature review establishes associations between project-related stressors and poor well-being. The subsequent studies reveal the importance of support and PsyCap in preventing detrimental consequences and fostering proactive coping strategies. By emphasizing the tandem significance of environmental and psychological resources, this dissertation enhances our understanding of project work and offers directions for future research.

Chapter 1: Extended Summary of the Doctoral Dissertation

1. Introducing the topic

Companies, industries, and entire economies are increasingly relying on project-based production practices (Burke & Morley, 2016; Prouska & Kapsali, 2020; Schoper et al., 2018). Projects (also known as temporary organizations) are used to augment action and strategic endeavors (Godenhjelm et al., 2015) and address complex and extraordinary business tasks (Cicmil et al., 2009). This trend of "projectification" has altered organizational structures (Midler, 1995), introduced new ways of working and organizing (Packendorff & Lindgren, 2014), and induced broader societal transformations in the way people live and work (Boltanski & Chiapello, 2005; Jacobsson & Jalocha, 2021). The influence of projectification extends not only to the human condition (Berglund et al., 2020; Kalff, 2017) but also to various areas of society (Jensen et al., 2016). This includes the actions, language, and cognitive perspectives of employees subjected to projectification in their daily activities (Lundin et al., 2015).

Projectification has profoundly influenced both daily life and multiple dimensions of societal structures (Berglund et al., 2020; Jensen et al., 2016; Kalff, 2017). Projects are initiated to achieve change or establish novel processes and are characterized by (i) a specific time frame, (ii) task orientation, and (iii) a designated team of project workers (Lundin & Söderholm, 1995). In many industries, projects are "the normal form of work" (Lindgren & Packendorff, 2006, p. 841), and project-based organizations (PBOs) and project workers have emerged as pivotal employers and key employees (Prouska & Kapsali, 2020). PBOs differ in important ways from project-oriented organizations. In PBOs, projects are used to coordinate market activities, and project-based settings are the typical workplace. PBOs are prevalent in contemporary knowledge-intensive industries (Bredin, 2008), such as software, construction, and engineering (Bakker, 2010). By contrast, project-oriented organizations have a permanent (functional) structure for supportive, cross-project routine tasks (Blindenbach-Driessen & van den Ende, 2006). Most project-oriented organizations work simultaneously on multiple, often co-configured, projects that involve different partners, durations, and demands

(Raetze et al., 2018). Project-oriented organizations are found in all industries, but particularly in the high-technology sector, professional and consultancy services, and creative and cultural industries (Turner et al., 2008).

Project workers (e.g., project directors, project managers, project engineers, and other project participants) are usually permanently employed by PBOs or project-oriented organizations and spend most of their working time on a changing constellation of temporary projects (Bredin, 2008). Temporary project workers (e.g., contractors, consultants) are released or moved to other projects after the termination of the project task (Bakker et al., 2016). Because projects frame challenges positively (Lundin & Söderholm, 1995), project work can be motivating, stimulating, and creative (Gällstedt, 2003). Project workers enjoy contributing to meaningful objectives, collaborating with engaged colleagues, participating in decision-making, and gaining personal and professional growth opportunities (Palm & Lindahl, 2015). Most project workers are highly committed employees who voluntarily engage in project work because they cannot imagine doing or daring to do something else (Cicmil et al., 2016).

However, project work is also demanding, challenging, complex, and stressful, and insufficient human resources, work control, and/or feedback can make project work a "double-edged sword" (Lingard & Turner, 2023, p. 11; Pinto et al., 2014). Regardless of employment status (i.e., permanent or temporary), changes in how project workers work can change how they live their lives (Lindgren & Packendorff, 2006). Project workers, especially project managers, often do not have clear career paths and opportunities for development (Bredin & Söderlund, 2013). Project workers experience job insecurity, chronic stress, role and work ambiguity, and intense time pressure (Gällstedt, 2003). For many, projects are inescapable mental prisons that stimulate and cause chronic stress, work-life conflicts, social isolation (Lindgren & Packendorff, 2006), job burnout (Jugdev et al., 2018), chronic illness (Darling & Whitty, 2020), severe mental health problems (Tijani et al., 2021), poor job performance (Naoum et al., 2018), and turnover (Yang et al., 2017). In this sense, projectification "*may not only expose people to unsustainable working conditions in terms of deadline stress and overload but also contribute to their declining sense of progress, hope, [and] personal worth"*
(Cicmil et al., 2016, p. 59).

The negative aspects of project work do not affect workers equally. Studies have explored the sources of project-related demands and their detrimental consequences for individual project workers (Aguilar Velasco & Wald, 2022) and organizations (Jacobsson and Jalocha, 2021) and examined environmental and individual resources that serve as buffers or means of combatting job strain associated with project work challenges (e.g., Abbas & Raja, 2015; Bowen et al., 2014a; Pinto et al., 2014; Todt et al., 2018). The most resilient project workers have resources such as support from project leaders (Todt et al., 2018); extensive project work experience and self-control skills (Nurmi, 2011); sufficient levels of self-efficacy (Jani, 2011), optimism (Dolfi & Andrews, 2007), hope (Chak et al., 2022), and psychological flexibility (Haynes & Love, 2004); and effective coping strategies (Aitken & Crawford, 2007). However, the literature has largely neglected the long-term strategies [that project workers] use to cope with the negative aspects of project work (Cicmil et al., 2016). The effects of workplace stressors on project workers' psychological well-being and health (Raetze et al., 2018; Tijani et al., 2021) and on project members other than the project manager (Borg & Söderlund, 2014; Jemine et al., 2023), especially in multi-project settings, are particularly notable lacunae (Delisle, 2020; Martinsuo et al., 2019). The limited knowledge of the crucial resources that affect project workers' overall well-being and of the coping strategies they employ to navigate project work-related stressors and outcomes hinders our ability to support the health, resilience, and performance of project workers and organizations.

2. Research objectives

This dissertation aims to enhance our understanding of crucial resources and mechanisms for preventing or mitigating the potential adverse effects of project work on the psychological well-being, health, and job performance of project workers across diverse employment arrangements, tenures, and genders. The dissertation draws on insights from research in project studies, project management, psychology, occupational health, and organizational behavior to identify potential antecedents, mediators, and moderators of well-being outcomes associated with the negative aspects of project work and their consequences for individual project workers. Furthermore, the job demands-resources (JD-R) model (e.g., Demerouti et al., 2001; Bakker et al., 2004) and conservation of resources (COR) theory (Hobfoll, 1989, 2011) are used to examine the crucial roles of social

resources (e.g., workplace and family support) and psychological resources (e.g., self-efficacy, hope, optimism, and personal resilience) in perceived work-related stress, burnout, and individual performance within the project context across economic sectors in Mexico and Norway. Finally, the JD-R and self-regulation model (Bakker and de Vries, 2021), the transaction model of stress (TMS) (Lazarus and Folkman, 1984), and the cognitive–motivational–relational theory of emotions (CMR-E) (Lazarus, 1991) are used to explore the coping strategies that project workers use to effectively handle project work challenges and their consequences.

To achieve the overarching aim of the dissertation, three studies collectively address the following research objectives, making contributions to the field of project organizing and management (Figure 2).

Research Objective 1: Develop a theoretical foundation for discussing the adverse effects of project work on individual project workers and the implications of these effects; identify prevailing theories in the field; and suggest future research directions.

The emphasis of this dissertation on the negative aspects of project work (e.g., project overload and excessive workload) and their implications for individual project workers is rooted in the call for a more comprehensive understanding of project work (Cicmil et al., 2016; Escobar et al., 2023; Zika-Viktorsson et al., 2006; Packendorff, 2002). Critical perspectives underscore the significance of recognizing not only the positive aspects of project work but also their negative consequences for individuals, the environment, and society at large (Cicmil et al., 2016; Hodgson & Cicmil, 2008; Packendorff & Lindgren, 2014). Acknowledging the complex benefits and challenges of project work is the first step in developing more ethical and sustainable ways of working and managing projects (Cicmil et al., 2016).

Despite a shift toward human-oriented research (Shurrab et al., 2018), individual project workers (other than project managers) have received relatively little scholarly attention (Borg and Söderlund, 2014; Delisle, 2020; Geraldi & Söderlund, 2018). Previous studies of stress-related factors have primarily focused on IT employees (Borg & Söderlund, 2014; Raetze et al., 2018) or those in

construction industries (Wu et al., 2019), leaving a notable gap in our understanding of the broader implications of project-related stress for individuals engaged in projects across sectors (Chiocchio et al., 2010; Gällstedt, 2003; Zika-Viktorsson et al., 2006; Gustavsson, 2016; Pinto et al., 2014). This dissertation consequently explores the implications of the negative dimensions of project work for individuals engaged in projects, including project leaders, managers, and team members, among other project participants across industries.

To address these gaps in the project management literature, **Study 1** provides a systematic literature review of the negative aspects of project work and their impact on individuals across various economic sectors. By embracing critical perspectives from project studies at the micro level (Geraldi & Söderlund, 2018), **Study 1** aims to provide a more balanced appreciation of this dynamic project management field. **Study 1** integrates the determinants of the negative aspects of project work, their implications for project workers' overall well-being, and the most prevalent theories in project studies, focusing on the individual level of analysis. The study aims to establish a theoretical framework for the negative aspects of project work that elucidates determinants, potential mediating and moderating mechanisms, and individual consequences.

Research Objective 2: Investigate the impact of support from environmental resources within the work and family domains on psychological resources, specifically psychological capital (PsyCap), which encompasses self-efficacy, optimism, hope, and personal resilience. Investigate the influence of environmental and psychological resources on the relationships between subjective stress, job burnout, and job performance among project workers across diverse economic sectors.

Work-related stress and burnout are global problems. Notably, burnout is recognized in the 11th Revision of the International Classification of Diseases (ICD-11) as an occupational phenomenon (World Health Organization [WHO], 2019). In Mexico, China, and the US, 75%, 73%, and 59% of workers, respectively, report experiencing work-related stress (Macias-Velasquez et al., 2019). The annual cost of work stress is £3.7bn in the UK and more than $300bn in the US (Foy et al., 2019). Although the impact of stress varies among individuals, a stressful workplace can lead to "*employee tardiness; absenteeism;*

low productivity; high employee turnover; wasted investment in training; increased costs due to training replacements for sick leave; depression; aggression; and violence" (Foy, 2015, p. 23). Employees experiencing high levels of stress are susceptible to health problems such as cardiovascular disease, obesity, diabetes, musculoskeletal disorder, cancer, social isolation, cognitive decline, diminished motivation for task performance, depression, and anxiety (Darling and Whitty, 2020; Foy et al., 2019). Moreover, job burnout can prompt employees to leave their positions, causing organizational turnover and skill shortages (Jugdev et al., 2018). Contemporary organizations face significant challenges in retaining their most talented employees, partly due to trends such as the "Great Resignation" and "Quick Quitting" (Lee et al., 2023, p. 3). Retention is particularly challenging in advanced economies such as Norway, where an aging population has created workforce scarcity (Sumbal et al., 2018). The cost of replacing and training a departed employee can reach two to three times their monthly salary (Franz et al., 2023).

Job burnout is particularly common in highly projectified industries (Jugdev et al., 2018). For instance, in Norway, many oil and gas (O&G) industry project workers face job burnout due to continuous organizational changes, high-performance expectations, and work environment challenges (Nielsen et al., 2012; Sumbal et al., 2021). In other countries, research shows that early-career project workers are at risk of burnout due to project-related demands and leaving their positions prematurely (Franz et al., 2023). Given the intricate and demanding nature of project work, these roles can be challenging to fill and require substantial recruitment and retention expenses for skilled practitioners (Jugdev et al., 2018). From a societal perspective, the prevalence of unhealthy stress and burnout among project participants can have broader economic implications, leading to increased healthcare costs, premature retirements, and potential shortages of highly qualified professionals, which can impede a country's economic growth (Cicmil et al., 2016). Given that advances in technology are expected to increase the prevalence of project-based work and the demand for skilled project practitioners (Lechler & Huemann, 2024; Walker & Lloyd-Walker, 2019; Karlsen & Berg, 2020), it is imperative to investigate ways to mitigate and navigate project workplace stressors and their negative consequences more effectively.

Previous research has examined the supportive roles of job resources, such as supervisor and co-worker support (Pinto et al., 2014; Bowen et al., 2014a; Love & Edwards, 2005), job control, and autonomy (Cattell et al., 2016; Love & Edwards, 2005); and personal resources, such as emotional intelligence (EI) (Sunindijo et al., 2007; Rastogi et al., 2023; Zhang et al., 2020) and individual components of PsyCap, i.e., self-efficacy (Jani, 2011), hope (Chak et al., 2020), optimism (Dolfi & Andrews, 2007), and resilience (Nwaogu & Chan, 2022). However, further investigation of the influence of social factors (Yang et al., 2017) and psychological factors on job burnout symptoms (Pinto et al., 2016) and job performance is warranted (An et al., 2019). Only Todt et al. (2018) and, more recently, Xia et al. (2022) have empirically explored the effect of the holistic concept of PsyCap on work-related outcomes in the project context. Therefore, **Study 2** empirically examines how support from specific environmental resources, i.e., the work and family domains, influences PsyCap and the interplay of these resources with the nexus between subjective stress, job burnout, and job performance among project workers across economic sectors.

Research Objective 3: Empirically investigate coping strategies employed by project workers to handle the negative aspects of project work and its detrimental consequences. Determine the factors beyond rewards that influence these coping strategies.

Many project workers face mental health issues stemming from workplace psychological hazards (Frimpong et al., 2023; Nielsen et al, 2012), heightened work intensity, time pressures (Delisle, 2020), role stressors (Wu et al., 2019), cultural stressors (Chan et al., 2014; Liu et al., 2023), job insecurity (Yip et al., 2008), work-related stress (e.g., Aitken & Crawford, 2007), and job burnout (Naoum et al., 2018). However, some project workers fare better than others when they encounter workplace stressors (Lazarus & Folkman, 2004). Although previous project-related studies have explored how project workers employ coping mechanisms to deal with the challenges they face at work, including mental health problems (e.g., Zhang et al., 2023) and poor performance (Leung et al., 2006; Naoum et al., 2018), our understanding of these coping strategies remains limited (Frimpong et al., 2023; Jin et al., 2023; Tijani et al., 2021).

To provide insights into healthy coping strategies that enable project workers to navigate project work challenges adeptly, **Study 3** delves into project workers' experiences. In doing so, the study responds to the call for more profound investigations into the metacognitive (i.e., cognitive, emotional, and behavioral) coping strategies utilized by project workers to handle project-related demands and job strain reactions more effectively (Bowen et al., 2021; Delisle, 2020; Liang et al., 2022; Frimpong et al., 2023) and the factors other than coping motivations that may influence their choice of strategy (Tijani et al., 2021). Understanding these coping mechanisms is crucial because their direct effects on project workers' health and psychological well-being will give rise to indirect effects on work-related outcomes and overall project and organization outcomes. As a practical contribution, the findings can be used to foster healthier work environments and an innovative work culture that promotes and cultivates healthier coping strategies.

3. Past research and main concepts used in this dissertation

3.1. Understanding projectification

Midler (1995) coined the term "projectification" to refer to a form of business organization that involves organizational transformation through projects. Definitions of "projectification" vary in their components or driving causes. For example, projectification has been described as the process of turning activities that were previously organized differently into projects (Packendorff and Lindgren, 2014); as a significant organizational transformation that organizations still struggle with at both the project and organizational levels (Aubry & Lenfle, 2012); as restructuring to prioritize project management over functional units and create a flexible labor pool for projects (Bredin and Söderlund, 2011); as adapting contexts to fit project work (Lundin, 2016); and as promoting the project as the central entity of interest (Cicmil et al., 2016).

Projectification is a growing trend because of the flexibility and cost-effectiveness of project work and project/temporary organizations in pursuing agility and innovation (Lundin & Söderholm, 1995; Prouska & Kapsali, 2021). This trend has significantly increased the demand for project workers (Crawford et al., 2013), making project management careers an attractive choice for many employees

(Hodgson et al., 2011), although they can be less satisfying in practice (Asquin et al., 2010; Cicmil et al., 2009). Many project workers do not have a project management degree or training when they enter the field (Lloyd-Walker et al., 2016; Hodgson et al., 2011).

The trend towards project-based work and management has also led to numerous studies of the positive and negative effects of projectification. On the one hand, projects and project management are crucial devices for navigating complexity and pursuing innovation and progress (Bakker, 2010). They are also seen as engines of sustainable development (Cerne & Jansson, 2019) that are transforming the economies of many countries (Schoper et al., 2018). The temporary nature of projects opens up new market possibilities (Hobday, 2000) and opportunities for organizational learning (Maylor & Turkulainen, 2019) and personal and professional development (Palm & Lindahl, 2015). Project workers can develop a broader skill set and extend their knowledge beyond what would be possible in alternative work contexts or circumstances (Tempest & Starkey, 2004). For project workers, the perceived benefits of projects include heightened commitment, dynamism, support, solidarity, communication, and autonomy (Hovmark & Nordqvist, 1996; Bredin & Söderlund, 2011).

However, it is crucial to recognize the ethical challenges of projectification. For instance, illicit and unethical activities associated with projects, such as modern slavery in construction companies, sexism, and corruption, are significant issues that must be addressed (Locatelli et al., 2022). Projectification is a complex ethical problem with long-term consequences for the sustainability of organizations and society (Cicmil et al., 2016). Projectification makes jobs more precarious, drives the segregation of labor (Samimi & Sydow, 2021), and can negatively impact the overall well-being of the workforce (Aguilar Velasco & Wald, 2022). The temporary nature of project management organization (Kalff, 2022), the complexity and interconnectedness of projects, and the common practice of working on multiple projects simultaneously (Patanakul et al., 2016) create an "endless list of demands, deadlines, and problems throughout the project's life cycle" (Verma, 1996, p. 176). Project work may expose project workers to mental, social, and physical exhaustion (Cicmil et al., 2016) and make it difficult to achieve a healthy work-life balance (Gällstedt, 2003). Resistance to stressful and sometimes adverse work conditions may be viewed as illegitimate, unnecessary,

or even an example of poor individual performance (Hodgson, 2002; Rowlands & Handy, 2012). Moreover, managing several interrelated projects with limited resources may result in project overload (Zika-Viktorsson et al., 2006). Project overload is a psychological state in which "fragmentation, disturbances and disruptions" become highly relevant aspects of the overall workload (Zika-Viktorsson et al., 2006, p. 386). Project overload may arise due to disintegration, inefficiency, and disruption caused by switching between simultaneous and conflicting commitments, ultimately leading to frustration, ambiguity, and stress (Gustavsson, 2016). Thus, engaging in project work can have negative consequences for project workers.

The conceptualization of projectification may be narrow or broad (Packendorff and Lindgren, 2014). The narrow conceptualization of projectification emphasizes how projects as a product and goal unit affect the organization's practices, structures, processes, and performance. By contrast, the broad conceptualization of projectification focuses on cultural and discursive phenomena, such as project-oriented discourses and how the new economy is based on projects, knowledge, networking, flexibility, and short life cycles (Boltanski & Chiapello, 2005; Grabher, 2002). The broad projectification perspective is interested less in what a project is than in the activities a project comprises (Cicmil et al., 2006; Hodgson & Cicmil, 2006); how the projectification process is constructed, developed, established, and institutionalized (Packendorff & Lindgren, 2014); how the projectification trend became dominant; and what consequences projectification has for sustainable development (Cerne and Jansson, 2019), individuals, project teams, organizations, industries, and society (Packendorff and Lindgren, 2014).

In addition to different modes of conceptualization, projectification can be considered at different levels of analysis: macro (societal), meso (organizational/managerial projectification), micro (professional projectification), and meta (philosophical projectification) (Jacobsson & Jalocha, 2021).

3.1.1. Projectification as a societal trend (macro level)

Projectification as a societal trend (or projectification of societies) refers to the diffusion of project management to all sectors of society (Packendorff and Lindgren, 2014) or to the long-term embedding of project processes in social

structures (Lundin, 2016). This research area focuses on the various aspects of projects that make them habitual, legitimate, and performative responses, such as cultural symbols and discursive notions (Packendorff & Lindgren, 2014), project portfolios, program management, strategy, organizational change, industry development, innovation, and interproject learning (Geraldi & Söderlund, 2018). It also examines the impact of projects on individuals, project teams, organizations, industry networks, the economy, and society (Jacobsson & Jalocha, 2021). Examples of project studies at the macro level include research on projectification in Western economies (Schoper et al., 2018), the use of projects to combat epidemics (Meinert & Whyte, 2014), projectification of public policies (Hodgson et al., 2019), and strategic development of society (Lundin, 2016).

3.1.2. Projectification as a managerial approach (meso level)

Projectification as a managerial approach, also known as organizational projectification (Midler, 1995), involves restructuring an organization to increase the prevalence of projects. This impacts processes, governance structures, and institutionalization of project operations across industries (Packendorff & Lindgren, 2014). Studies in this stream of research mainly focus on the impact of projectification on organizational outcomes, such as human resources management (HRM) practices (Bredin & Söderlund, 2011). The effects of projects (temporary organizations) on permanent organization revenues, project mindset, and culture (Müller et al., 2016); the number of activities organized by projects; fundamental changes in companies (Lundin, 2016; Midler, 1995); and time, collaboration, conflicts, communication, deadlines, planning, learning, and competences at the project level are also of interest (Geraldi & Söderlund, 2018). However, this approach has been criticized as "too narrow" (Packendorff & Lindgren, 2014, p. 10).

3.1.3. Projectification as a human state (micro level)

Projectification as a human state, also known as professional projectification, refers to the impact of projectification on individuals, such as changes in work relationships and private lives (Jacobsson & Jalocha, 2021). This stream of research, also called "micro project studies," investigates the people in projects, project psychology, individual competencies, work-related motivations and

concerns, project careers, project overload, trust, stress, coping (Geraldi & Söderlund, 2018, p. 62), project role, work identity (Jacobsson & Jalocha, 2021), paradoxical tension (Hodgson et al., 2011), and project workers' overall well-being outcomes (Aguilar Velasco & Wald, 2022). Micro-level project studies are critical hubs that connect macro-level and meso-level project studies with problems in the project context and beyond (e.g., sustainable development, poverty, well-being, and gender equality) (Geraldi & Söderlund, 2018).

Although most micro-level project studies focus on the negative aspects of project work, i.e., the dark side of projectification (Jacobsson & Jalocha, 2021), some examine positive aspects—the bright side of projectification—such as job autonomy and opportunities for learning and professional growth (Palm & Lindahl, 2015). Research in this stream pays special attention to project-related stressors, precarious working conditions, and psychological hazards that negatively affect project workers' stress levels, performance, health, career paths, professional competencies, sense of power, personal worthiness, project commitment, hope, and resilience (e.g., Ballesteros-Sanchez et al. 2019; Borg & Söderlund, 2014; Darling & Whitty, 2020; Chak et al., 2019; Cicmil et al., 2016; Ekstedt, 2019; Leung et al., 2009, 2011).

3.1.4. Projectification as a philosophical concept (meta level)

As a philosophical concept, projectification represents a metaphysical shift in how we perceive time, space, and work (Jacobsson & Jalocha, 2021). This shift is exemplified by the widespread influence of project-related language and thinking on vocabulary, culture, and daily activities (Jacobsson & Jalocha, 2021). This projectification view parallels Pierre Bourdieu's concept of habitus, suggesting that projectification has become a kind of meta-habitus—an ingrained and subconscious way of thinking and behaving (Bourdieu, 1977).

Studies in this stream of research explore how the prevalence of projects as a central organizing principle influences social dynamics, identity formation, and cultural practices (Jensen et al., 2016; Packendorff & Lindgren, 2014). Project work is considered not only a temporary organization but also a crucial shaper of collaborations and interactions in various aspects of life (Jensen et al., 2016). For example, studies have investigated the influence of projectification processes on

elements such as "professional identities, the establishment of new power dynamics, and the (re)masculinization of post-bureaucratic work practices" (Packendorff and Lindgren, 2014, p. 13). Dollinger (2020) explores shifts in individuals' perception of time. Projectification often involves viewing time as restricted, quantifiable, and expressible in numerical terms, leading to the creation of a "projectified timescape" (Ylijoki, 2016, p. 29).

3.2. Projects as temporary organizations

The project research literature provides numerous conceptualizations of "project," such as an initiative undertaken to bring about change or institute new processes (Lundin & Söderholm, 1995) or "a temporally bounded group [or system] of interdependent organizational actors, formed to complete a complex task" (Burke & Morley, 2016, p. 1237). Although there is pronounced diversity in project conceptualizations, most define projects as (i) limited by a specific time frame, (ii) task-oriented, (iii) advanced by a designated team of actors, and (iv) initiated to achieve change or establish novel processes (Lundin & Söderholm, 1995). **This dissertation defines a project as a non-routine task with a specified target, a minimum duration of four weeks, and at least three participants** (Schoper et al., 2018).

Table 1 compares the main characteristics of project/temporary organizations (TOs) and permanent organizations (POs). The difference between TOs and POs is not clear-cut (Hanisch & Wald, 2014); in reality, organizational units are "hybrids containing a mix of temporary and permanent structures" (Bakker et al., 2016, p. 1705), where TOs exhibit elements of POs and vice versa (Henning & Wald, 2019; Gaetz & Wald, 2022). Due to these characteristics, TOs are considered highly complex, uncertain, and ambiguous (Keegan & Den Hartog, 2004). Typical characteristics of TOs that differentiate them from POs are "nonroutine work content," "higher uncertainty/and risk," and "interdivisional collaboration of heterogeneous teams" (Hanisch & Wald, 2014, p. 199); novelty and high interdependence (Burke & Morley, 2016); complex, knowledge-intensive tasks (Hodgson, 2004); hierarchy and coordination (Henning & Wald, 2019); and greater flexibility in internal operations and dissolution upon the attainment of the set goal (Montaudon-Tomas et al., 2023).

A TO requires a more dynamic work environment to respond quickly to customers, which may also be the PO (Ferreira et al., 2013). This has implications not only for HR configurations and practices and the temporariness of employment forms (Burke & Morley, 2016; Bredin & Söderlund, 2011; Samini & Sydow, 2021; Turner et al., 2008) but also for employee outcomes (Aguilar Velasco & Wald, 2022). In particular, employees who are assigned simultaneously to the TO and PO (Samimi & Sydow, 2021) must constantly cope with "the PO–TO tension and paradoxes inherent in this symbiotic interdependence" (Burke & Morley, 2016, p. 16). Other behavioral patterns unique to TOs are peaking workloads, uncertainty of future assignments, difficulties matching assignments with career objectives, and balancing work and personal life (Turner et al., 2008).

Table 1. Main characteristics of temporary organizations vs. permanent organizations (Source: Hanisch and Wald, 2014, p. 199).

Prevalent Manifestations/ Characteristics	Temporary organization (TO) (i.e., temporary teams, projects, programs)	Permanent organization (PO) (functional, divisional, matrix)
Duration	Ex-ante limited	Ex-ante unlimited
Novelty, uncertainty, and risk	High	Low
Routines	Missing	Present
Hierarchical clarity	Superior in line-function and project leaders as superiors	Employees usually report to only one superior
Diversity	Teams composed of experts with diverse skills and professional and cultural backgrounds	Teams composed of members with similar professional and cultural backgrounds belonging to the same functional department and division
Structures and coordinating mechanisms	Fewer formal structures and processes, more informal coordination	More formal structures and processes, less informal coordination

Projects are transient, complex, continuously evolving, and comprise numerous job demands (Gallagher et al., 2015). Regardless of whether the organization is a TO or PO, projects are subject to uncertainty due to internal and external factors, including market forces, technological advancements, societal evolutions, organizational transformations, and the client's requirements for the solution delivered (Geraldi et al., 2011). Therefore, projects are widely accepted to be unpredictable, uncertain, and interdependent (Franz et al., 2023). Finally, projects can be categorized as external, i.e., income generating, or internal, such as

organizational change, information technology (IT), and product development projects (Schoper et al., 2018).

3.2.1. Project work

The concept of project work (or project-based work) encompasses diverse situations and everyday realities for the people engaged in projects, as the nature, scope, duration, and complexity of projects can vary widely. Therefore, the implications of projects for individuals can range from routine (e.g., workers who solely work within project settings) or non-routine (e.g., workers who occasionally participate in a project) (Jemine et al., 2023; Borg & Söderlund, 2015). Project work is often portrayed as the opposite of "ordinary work" and positively characterized as challenging, knowledge-intensive, and controversial (Lindgren & Packendorff, 2006, p. 842). For project workers, project work is routine rather than the exception, as "individuals working by projects exercise a long-term trajectory consisting of a long series of projects" (Packendorff, 2002, p. 44). Project work takes place in time-limited TOs characterized by short-term logic and relies on decentralized temporary project team members who have a strong, short-term emphasis on project outcomes (Bredin, 2008). Project work is, therefore, characterized by temporality.

Furthermore, the tasks in project work may be unique and novel or repetitive and routine, similar to ordinary work in POs (Goetz & Wald, 2022). Although traditionally associated with construction, engineering, and IT, project work has extended its influence across diverse sectors (Morris, 2013), including healthcare (Chiocchio et al., 2010), education (Dollinger, 2020), and the public sector in general (Godenhejelm et al., 2015).

Finally, project work can be categorized as intra-functional and inter-functional (Bredin & Söderlund, 2011; Clark and Wheelwright, 1992). Intra-functional projects adopt a lightweight team structure, with project workers mainly co-located within their line functions. Line managers actively engage in problem-solving and resource control. By contrast, inter-functional projects employ a heavyweight or autonomous team structure, with workers dedicated to and co-located with the project team (Bredin & Söderlund, 2011). Here, project managers handle technical

problem-solving, while line managers focus on staffing and long-term career development (Bredin & Söderlund, 2007).

3.2.2. Project-based organizations

PBOs are temporary organizations designed for specific project tasks. The core activities of PBOs focus on creating products and services, which are the rationale and revenue stream for these organizations (Bredin & Söderlund, 2011; Lundin & Söderholm, 1995). PBOs have distinct features, including an emphasis on management paradigms such as empowerment, results orientation, and networking (Huemann et al., 2007). These organizations, which organize work around a series of current projects, often rely on outsiders to complete individual tasks while retaining a core group of employees who initiate, organize, and conduct separate projects (Whitley, 2006, p. 81). PBOs that specialize in certain industries tend to use the same pool of project workers due to the scarcity of human resources (Prouska & Kapsali, 2020). The unpredictable, temporal, and highly dynamic nature of PBOs poses challenges for employees, including time pressures, self-exploitation, chronic stress (Delisle, 2020; Cicmil et al., 2016; Bowen et al., 2013, 2014a), and compromised recovery time (Zika-Viktorsson et al., 2006).

Classic management theories such as McGregor's Theory X and Theory Y (1960) offer valuable insights into project contexts. Theory X assumes that employees are passive and resistant and require strict management mechanisms to control their behavior. Theory Y assumes that employees can exercise self-control and self-direction, are proactive, and seek to create an empowering and motivating work environment (McGregor, 2000; Lawter et al., 2015).

In PBOs, these two theories coexist. Theory X is evident in the need to meet deadlines and stick to plans, while Theory Y emphasizes motivation, work enjoyment, and a proactive approach to responsibility (Kopelman et al., 2008; Heil et al., 2000). Organizations that embrace Theory Y practices, such as decentralization and employee empowerment, tend to experience enhanced employee well-being and productivity. However, goal clarity is critical for meeting challenges that may arise (Galani & Galanakis, 2022). The successful implementation of Theory Y requires the alignment of individual attitudes,

expectations, and memberships within the organization with Theory Y principles (McGregor, 2000).

Recent research shows that agile project management can improve the psychological well-being of project workers. Agile working can create a stress-mitigating environment by enabling a sustainable pace that allows workload balance, especially near project completion (Pfeiffer, 2019; Tuomivaara et al., 2017). However, agile working is effective in reducing work-related stress and emotional exhaustion only in organizations that have a strong foundation in agile project management and foster a culture of psychological empowerment (Augner and Schermuly, 2023). Moreover, the sustained pace of agile working may compromise recovery time and job autonomy, challenging the balance between freedom and responsibility within the tight time frames of project work (Hoda et al., 2012; Tuomivaara et al., 2017). Thus, project-related stressors, including time deadlines, project overload, and a project culture characterized as rational, masculine, and performance-oriented, are significant barriers to the effectiveness of agile working as a coping strategy.

According to McGregor's theory, embracing Theory Y, i.e., adopting an agile approach, requires substantial shifts in individual mindset and organizational culture (Lawter et al., 2015). This transformation is essential for fully realizing the benefits of agile methodologies, which emphasize collaboration, empowerment, and flexibility and align with the principles of Theory Y.

3.2.3. Project workers

Project workers (also known as project personnel, project staff, project actors, or project participants) are the individuals involved in projects. Project workers serve in roles such as project directors, project leaders, project managers, project engineers, project planners, project-based consultants, portfolio managers, and program managers. Project workers are directly responsible for project-related tasks. While project managers are responsible for project outcomes (Leung et al., 2009), frontline project workers carry out demanding tasks under tight schedules and have limited job control because of their low position in the organizational hierarchy. Frontline workers may also lack support from supervisors because of the uncertain nature of projects and the high turnover of project team members

(Bowen et al., 2014a; Liang et al., 2022). An ideal project worker is competent, flexible, and employable (Bredin & Söderlund, 2011). They possess technical and soft skills, such as planning, negotiation, and self-confidence, to deal effectively with project-related demands (Zika-Viktorsson and Ritzen, 2005). Furthermore, project workers are likely to have high levels of self-efficacy to deal with the uncertainty inherent in projects and project-based employment (Lloyd-Walker et al., 2018).

The project workforce consists of both permanent and temporary project workers. Permanent project workers are engaged in direct employment relationships with PO (e.g., client organizations), which explicitly state pre-determined project durations and pre-specified deliverables (Prouska & Kapsali, 2021). Temporary project workers such as consultants (or mobile workers) usually work in client organizations and are hired on contingent contracts (Borg & Söderlund, 2015). Project workers may also be serially employed by a PO through a series of contracts; after the conclusion of specific projects, they are supervised and assessed by the PBO and enjoy a subset of the benefits given to regular employees (Prouska & Kapsali, 2020).

Project workers must rely on project participation for on-the-job training and reputation building (Bredin & Söderlund, 2011). This is even more important for temporary project workers, who do not have a formal affiliation with an organization or organizational unit and thus have fewer opportunities to broaden their learning (Borg & Söderlund, 2014; Tempest & Starkey, 2004). Temporary project workers need strong prioritization skills, the ability to adapt to changing prerequisites, and the ability to stay organized despite constant organizational changes (Zika Viktorsson et al., 2006). Whereas traditional employees depend on occupational and organizational credentials for negotiating work, contractual/temporary project workers adapt to the uncertainty of their transitional roles by acquiring fresh competencies and leveraging them to establish professional networks and forge future career paths (Borg and Söderlund, 2015). Most project workers enjoy the variety, challenge, and learning opportunities of project-based work and consider themselves “masters of their own destiny” who are responsible for carving out their career opportunities and direction (Lloyd-Walke et al., 2018, p. 896).

3.3. Stress and its consequences in the project context

3.3.1. Classifications of stress

Stress can be characterized as a stimulus, a reaction, a transactional, or a discrepancy (Sonnentag & Frese, 2003). Stress acts as a stimulus when stressors (e.g., high time pressure or interpersonal conflicts at work) trigger strain (Kahn & Byosiere, 1992). By contrast, stress as a reaction encompasses physiological responses that occur irrespective of situational characteristics (Seyle, 1956). Transactional stress is an outcome of interactions between individuals and the environment and incorporates perceptions, expectations, interpretations, and coping responses (Lazarus and Folkman, 1984). Finally, the discrepancy concept defines stress as a misalignment between an individual's aspirations and the environment (Edwards, 1992). This dissertation applies the transactional concept to explore project workers' subjective stress, its consequences, social resources (support from the workplace and family domains), PsyCap (self-efficacy, hope, optimism, and resilience), and coping strategies for navigating dynamic, complex project environments.

Stress can also be classified as positive (or eustress) or negative (or distress) (Selye, 1976). Positive stress, which is a self-imposed challenge that is stimulating and motivating and perceived as controllable, is not necessarily harmful (Lazarus & Folkman, 1984). Positive stress is generally short-term and results in motivation, better focus, improved personal coping abilities, excitement, and enhanced performance (Selye, 1976). By contrast, negative stress is not chosen or self-imposed by the individual and emerges when environmental or personal demands exceed the capabilities and resources of the individual (Lazarus & Folkman, 1984). Negative stress can be either short-term (acute) or long-term (chronic), resulting in strain (Selye, 1976). Negative stress is problematic because it can cause health problems (e.g., cardiovascular disease, burnout, and depression (Leung et al., 2011; Darling and Whitty, 2020), impair productivity, harm relationships (Leung et al., 2009; Naoum et al., 2018; Senaratne & Rasagopalasingam, 2017), and ultimately increase turnover (Yang et al., 2017).

3.3.2. Project-related stress and job burnout

Projects have been identified as a source of stress at work (Darling & Whitty, 2020) because they are temporal, ambiguous (Raetze et al., 2018), "frenetic, fast-paced, and dynamic" (Pinto et al., 2014, p. 578). This stress induces "physiological, psychological, and behavioral responses" to workplace stressors (Bowen et al., 2014a, p. 94). Negative aspects of project work, such as work intensification, increased individual responsibility, numerous concurrent activities, work-life imbalance, long hours, tight deadlines, multitasking, inadequate routines, and lack of support from supervisors, have been linked to work-related stress reactions (Bowen et al., 2014a; Jepson et al., 2017; Zika-Viktorsson et al., 2006). Moreover, project workers who are employed in a functional department while performing work on one or several projects are subject to increased structural ambiguity, risk of conflicts, confusing expectations, excessive demands, and time pressure, exacerbating negative stress (Borg and Söderlund, 2014; Ford & Randolph, 1992; Nordqvist et al., 2004). Psychosocial aspects of project work can cause work-related stress, such as interactions with new and diverse project team members, high-performance expectations, work culture, and psychological contract violations (Berg and Karlsen, 2013; Borg and Söderlund, 2014; Dainty et al., 2004). Finally, stress levels in project work are influenced by individual factors, including professional background, the need to prove oneself (e.g., Bowen et al., 2013, 2014a), type A personality (Weiss, 1983), and gender (Leung et al., 2008).

Project studies categorize work-related stress as subjective or objective (Leung et al., 2007). From the transactional view, subjective stress can be defined as "*a particular relationship between the person and environment that the person appraises as taxing or exceeding his or her resources and endangering his or her well-being*" (Lazarus and Folkman, 1984, p. 19). Subjective stress results from internal factors (e.g., personal demands and perceived workplace stressors) and subjective feelings (Leung et al., 2007). By contrast, objective stress is caused by external factors (project-related demands) that cause unfavorable events (e.g., numerous deadlines) (Leung et al., 2007). Individual responses to external or internal stressors are called outcomes, and adverse outcomes are referred to as strains (Lazarus, 2006). Because stress results from the interplay between environmental factors, including adverse work conditions, and personal factors, such as employees' perceptions and psychological reactions to these conditions (Cooper et al., 2001), objective stress can trigger subjective stress and lead to job

strain (Senaratne & Rasagopalasingam, 2017). Job strain can be classified into psychological strain (e.g., anxiety), physical strain (e.g., hypertension), behavioral strain (e.g., slowed responsiveness), and emotional strain (e.g., loss of self-confidence) (Motowidlo et al., 1986; Berg and Karlsen, 2013).

Strain can lead to burnout, a psychological syndrome of emotional exhaustion, cynicism, and reduced personal accomplishment associated with prolonged exposure to job-related stressors (Maslach & Leiter, 2016). The emotional exhaustion dimension is related to feelings of emotional fatigue and is associated with job demands (Maslach, 2003). Cynicism is a distinct manifestation of social depletion and involves feelings of rejection or alienation (Maslach, 2003). Cynicism can be seen as a callous and diminished connection to various aspects of one's professional life, including colleagues, clients, or the job itself (Schabram & Heng, 2022). Both cynicism and professional inefficacy are linked to job resources (Schaufeli et al., 1996). Professional inefficacy, which reflects a depleted sense of self and accomplishments, encapsulates negative self-evaluation and dissatisfaction regarding one's job achievements (Maslach and Leiter, 2016; Schabram & Heng, 2022). Professional inefficacy is intricately tied to performance and captures the self-evaluative facet of burnout (Maslach and Leiter, 2016).

In addition to health-related outcomes, job burnout is associated with low commitment and productivity, which is costly for organizations (Naoum et al., 2018; Singh et al., 2012). The literature on job burnout among project workers has mainly explored predictors of burnout in the project context (Ayalp, 2022), such as project-related demands (Pinto et al., 2014), abusive supervision (Zhang et al., 2020), organizational justice (Yang et al. 2018), and subjective fit perceptions (Song et al., 2020). Studies have also examined the negative consequences of job burnout for individual project workers' health (Yang et al., 2017) and for organizational outcomes such as organizational commitment (Singh et al., 2012), job performance (e.g., Leung et al., 2009, 2011), turnover (Franz et al., 2023), and project performance (Irfan et al., 2021). More recently, researchers have investigated personal factors influencing the relationship between job burnout and organizational outcomes, such as emotion regulation (Zhang et al., 2020), career calling (Wu et al., 2019), and perfectionism (Rice and Liu, 2020).

In summary, many project workers, particularly early-career project workers, experience mental health problems and other detrimental consequences as a result of the high levels of stress and burnout caused by the negative aspects of project work (Tijani et al., 2021; Franz et al., 2023). It is critically important to investigate how stress levels can be effectively managed to avoid or mitigate negative outcomes for individual project workers, the organizations where they work, and industries. Although work-related stress has been discussed extensively in the literature, more research on micro-level issues in the project context is needed.

3.4. Support, psychological capital, and future-time orientation as coping resources

3.4.1. Support

Support is defined as the "*instrumental aid, emotional concern, informational, and appraisal functions of others (…) that are intended to enhance the well-being of the recipient*" (Michel et al., 2010, p. 92). Support from appropriate individuals can substantially alleviate work-related stress and mitigate its impact on employee health (House, 1983). Notably, perceived support from family members, friends, and co-workers is more crucial than actual support in alleviating the adverse health effects of stress (Wethington and Kessler, 1986). Thus, support is a protective coping resource embedded in an individual's social network that can help to reduce stress (Cohen & Willi, 1985).

Support can be classified into two main categories: instrumental and social. Instrumental support involves practical assistance, such as advice and feedback from coworkers, whereas social support encompasses emotional elements, such as care and empathy (Bowen et al., 2014a). Social support from leaders and coworkers positively impacts an individual's well-being (Bakker et al., 2004; Hobfoll, 2002). Feeling supported in the workplace can lead to reduced stress levels and a sense of being valued, receiving fair rewards for one's efforts, emotional care, and being part of a network of relationships (Hobfoll, 2002). Similarly, social support from family and friends can help individuals develop positive emotions and resilience (Cohen and Will, 1985).

Furthermore, support can be differentiated based on its origin, with distinct roles of work-related sources, such as support from project leaders, and nonwork-related sources, such as support from family and friends (House, 1983; Todt et al., 2018). Project studies have explored the buffering effect of workplace support on the relationships between project demands, burnout, and organizational performance (e.g., Bowen et al., 2013; Irfan et al., 2021; Pinto et al., 2014; Wu et al., 2018). However, few studies have examined the role of work-related and nonwork-related social support in alleviating job strain among project workers (Love and Edwards, 2005; Todt et al., 2018) or in building project employees' positive personal resources, such as self-efficacy and resilience, which impact job strain responses (e.g., negative emotions induced by project failures or setbacks) and work-related outcomes (Shepherd et al., 2009; Todt et al., 2018). Therefore, this dissertation focuses on perceived support in the workplace and from family.

3.4.2. Psychological capital

PsyCap is a state-like psychological resource comprising self-efficacy, optimism, hope, and personal resilience (Luthans et al., 2007b). Self-efficacy, a concept based on social cognitive theory (Bandura, 1977), refers to "an individual's convictions (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to execute a specific task within a given context successfully" (Stajkovic & Luthans 1998, p. 66). Hope is a positive motivational state involving a sense of "agency (goal-directed determination) and pathways (planning of ways to meet goals)" (Snyder, 2002, p. 257). Optimism, a component of PsyCap, reflects realistic optimism, including a favorable view of the past, an appreciation for the present, and the recognition of future opportunities (Luthans et al., 2007b; Schneider, 2001). Resilience "is the positive psychological capacity to rebound, to 'bounce back' from adversity, uncertainty, conflict, failure or even positive change, progress and increased responsibility" (Luthans, 2002, p. 702). The commonalities among self-efficacy, optimism, hope, and resilience include positive event appraisal, a sense of control, agentic goal pursuit, intentionality, and a preference for selecting challenging goals with the motivation to achieve them (Luthans & Youssef-Morgan, 2017). Thus, the PsyCap construct encompasses core elements of future motivation and feelings of capability that affect how individual workers navigate perceived challenges within their project-based work. PsyCap is a critical personal resource that enhances individual and

organizational outcomes and fosters performance, resilience, and overall well-being.

Organizational research has found that PsyCap is a powerful tool for reducing job strain and improving innovation performance (e.g., Abbas & Raja, 2015; Luthans et al., 2007a), employee well-being, and performance (López-Núñez et al., 2020). Because PsyCap mitigates distress arising from work situations, it is a protective coping resource (Thoits, 1995). A handful of studies have explored the holistic PsyCap concept and its effect on individual well-being and performance in the project context project. For example, Todt et al. (2018) examined the impact of personal resources, including PsyCap components, on project workers' resilience and commitment to innovation projects. More recently, Xia et al. (2022) explored the influence of PsyCap on project manager initiatives that give organizations competitive advantages in the construction industry. Other studies of psychological resources in the project context have focused on the impact of a single component of PsyCap on project team performance (e.g., Karlsen & Berg, 2020), project success (Chak et al., 2022; Novieto & Kportufe, 2022; Mubarak et al., 2022), or the project environment (Dolfi & Andrews, 2007). No study has explored the effects of PsyCap on project workers' job strain responses (e.g., subjective stress and burnout) and job performance.

Unfavorable situations, issues, conflicts, and failure are inherent to projects, and project workers will inevitably experience difficulties, setbacks, and crises (Karlsen & Berg, 2020). Thus, research on the role of positive psychological resources such as PsyCap in project workers' psychological well-being and job performance is crucial for finding better ways to support employees in managing stress, which will benefit not only individual employees but also project outcomes, team morale, performance, and the overall health of the organization.

3.4.3. Future time orientation

The perception of time, especially in uncertain situations, affects the reactions of employees and influences whether they focus on present challenges or are distracted by non-work-related activities (Chang et al., 2021). Time orientation, i.e., reactive/present-oriented vs. anticipatory/future-oriented, shapes coping strategies and significantly impacts stress resistance (Eager et al., 2019). Present

orientation refers to the focus on managing or accepting current situations rather than attempting to change them, emphasizing immediate stressors and their impacts (Begley, 1998). Future time orientation (F-TO) is a crucial cognitive resource that reflects an individual's propensity to set and work toward long-term goals and their ability to manage time effectively in preparation for future outcomes (Aspinwall & Taylor, 1997). Employees with strong F-TO can delay gratification by considering future consequences. According to Simons et al. (2004), this ability contributes to effective resource management. F-TO positively adapts to stressors by engaging in tasks associated with favorable future outcomes, leading to the creation of additional personal resources such as proactive coping (Hobfoll et al., 2018). Employees with F-TO can better prioritize job assignments, delegate tasks, manage deadlines, and seek managerial support, a critical job competency skill, resulting in higher job performance (Reuter & Schwartzer, 2015).

3.5. Coping

Coping is traditionally conceptualized as a response, reaction, or deterrent to stress that has occurred or is threatened (Folkman, 2008). Examples include taking direct action, seeking information, doing nothing, or utilizing relaxation or defense mechanisms to prevent or alleviate harm, threat, loss, or distress (Lazarus & Folkman, 1984). Coping mechanisms (or processes) are the cognitive and problem-solving behaviors adopted to prevent, confront, reduce, or remove stress or efforts to mitigate tension by evading the problem (Lazarus and Folkman, 1984). Coping mechanisms are dynamic because they involve continuously adapting cognitive and behavioral efforts to handle external and/or internal demands perceived as challenging or surpassing an individual's resources (Lazarus and Folkman, 1984). Coping itself can be stressful (Nurmi, 2011).

Coping strategies can be broadly categorized into two types: problem-focused coping (P-FC) and emotion-focused coping (E-FC) (Lazarus and Folkman, 1984). P-FC is goal-directed and includes strategies such as active planning, cognitive reappraisal, confrontative coping, and seeking instrumental support from colleagues to manage problems. E-FC seeks to control psychological distress and return to normal social and psychological functioning through emotional support seeking, denial/escape, avoidance, and self-control (Chan et al., 2012; Gällstedt,

2003; Haynes and Love, 2004; Liang et al., 2022; Naoum et al., 2018; Yip et al., 2008). Those reactive coping, such as P-FC (e.g., changing the situation, symptom reduction, seeking instrumental support) and E-FC strategies (e.g., describing feelings, re-evaluating the situation), effectively mitigate the impact of stressors on health and well-being (Reuter & Schwarzer, 2015).

Several studies have explored the coping strategies employed by project workers to address work-related stress (e.g., Aitken & Crawford, 2007; Bergen & Karlsen, 2013; Bowen et al., 2014b, 2021; Chan et al., 2012; Frimpong et al., 2023; Haynes and Love, 2014; Leung et al., 2006; Naoum et al., 2018), primarily using quantitative approaches. These studies have identified active problem-solving and delegation by project managers (Aitken & Crawford, 2007; Haynes & Love, 2004; Naoum et al., 2018) and seeking support from certain team members to manage work-related stress and job strain symptoms (Bowen et al., 2014b; Richmond & Skitmore, 2007) as effective coping techniques. Interestingly, frontline project professionals, temporary contractors, architects, and construction workers tend to use E-FC, such as withdrawal behaviors and wishful thinking, to deal with psychological distress and its consequences (Bowen et al., 2014b; Yip et al., 2008). A considerable number of project workers use maladaptive coping strategies that pose challenges to well-being and organizational performance, such as alcohol consumption and extended working hours (Bowen et al., 2021; Frimpong et al., 2013; Liang et al., 2022).

Although both coping styles mitigate stress, P-FC alleviates job strain more efficiently than E-FC (Tijani et al., 2021). Nonetheless, P-FC is not the most frequently used coping mechanism among the project workforce (Bowen et al., 2021) because an individual's assessment of stressors and coping strategies is not the only factor influencing stress and its outcomes. Working conditions and the presence of available resources (e.g., social support) also contribute to the stress-strain relationship (Peiro, 2009). Furthermore, coping mechanisms are influenced by project workers' motivations (Chan et al., 2018). However, research on the coping mechanisms of project workers remains limited (Bowen et al., 2021; Delisle, 2020; Jin et al., 2023; Zhang et al., 2023). Considering the prevalence of psychological distress, job burnout, depression, and substance use disorders among project workers (Tijani et al., 2021), it is imperative to delve further into their coping strategies.

Recent studies highlight the effectiveness of proactive coping, an effort to cultivate resources for stress and future challenge management, compared to reactive approaches (Eager et al., 2019; Ersen & Bilgiç, 2018). Aspinwall and Taylor's framework identifies five components of proactive coping: Recognition, initial appraisal, preliminary coping, elicitation, and use of feedback, and resource accumulation, promoting a growth-oriented mindset in ambiguous and stressful situations (Aspinwall & Taylor, 1997; Chang et al., 2021). This future-oriented coping (F-OC) allows individuals to prepare for events, achieve goals, develop skills, and gather resources, minimizing adverse outcomes (Schwarzer & Taubert, 2002). According to the Conservation of Resources (COR) theory, employees can proactively acquire new resources, such as developing job skills, or anticipate and mitigate potential future resource depletion by identifying alternative ways to overcome obstacles (Hobfoll, 1989). Thus, coping can be future-oriented or anticipated before a stressor is encountered (Greenglass, 2002). Future-oriented coping (F-OC) is advantageous for entrepreneurs, as they must continually balance the present and future, investing current resources with the expectation of future gains (Bird & West, 1997; Eager et al., 2019). Therefore, project workers with entrepreneurial traits may exhibit a future-oriented perspective by employing proactive or preventative coping strategies.

3.6. Job performance

Job performance has been conceptualized in different ways, with different corresponding measurements:

- task performance and behaviors directly related to the formal job role and the organization's strategic aims (Motowidlo & Van Scotter, 1994);
- work outcomes achieved within a job function over time (Deadrick & Gardner, 1999);
- willingness to learn, explore, and be productive (El-Sabaa, 2001).

Job performance can also be categorized as task or contextual (Borman & Motowidlo, 1997). Task performance (also known as inter-role behavior) refers to meeting organizational goals by following established work-related practices, whereas contextual performance (also known as extra-role behavior) involves going beyond expectations in tasks, collaboration, and engagement (Borman & Motowidlo, 1997; Katz & Kahn, 1966).

In this dissertation, job performance refers to an individual employee's project work-related performance, including work-related outcomes such as task proficiency, i.e., the accuracy and effectiveness of delivering project work-related tasks within the expected quality standards and timeframes (Spanuth & Wald, 2017), and work-related behaviors that directly serve the goals of the project (or TO), such as adaptability and proactivity (Nuhn et al., 2019).

Studies have suggested connections of project-related stressors, job strain, and job performance (Leung et al., 2011; Senaratne & Rasagopalasingam, 2017) with coping mechanisms (An et al., 2019). For instance, many project managers trapped in multiple project demands find themselves "out of form" and lose control of less crucial tasks, further reducing their overall work performance (An et al., 2019, p. 207). However, such investigations remain limited to the mediating role of psychological states, such as perceived stress and burnout, in the relationship between environmental stressors and work performance (An et al., 2019). In addition, the influence of project workers' PsyCap on this relationship has not been comprehensively examined (An et al., 2019; Gallagher et al., 2015).

3.7. Positioning and Rationalization

Within the broader scope of scholarly inquiry, this dissertation is situated within the domain of project organization and management, specifically focusing on the individual or micro level.

Study 1 is positioned at the nexus between the narrow and broad conceptualizations of projectification and explores the negative aspects of project work and their implications for individual project workers. This position is necessary because "we live in a projectified world where projects, project-based work, and project-based processes are at the core to most organizations, by their governments or industries" (Geraldi et al., 2011, p. 966) and formal institutions (e.g., education) (Ekstedt, 2019). These complex and interconnected structural, organizational, and project practices (Geraldi et al., 2011) and the behavioral complexity of the human actors that carry out projects (Clegg & Courpasson, 2004; Roth & Senge, 1996, p. 126) impact individual project workers' work practices (Peticca-Harris et al., 2015) and overall well-being (Aguilar Velasco & Wald, 2022).

Compared with studies exploring project concerns and technical factors (macro level or type 1) or project characteristics, behaviors, and social dynamics (meso level or type 2 research), research exploring human factors (micro-level or type 3 research) in projects and general management is limited and underdeveloped (Geraldi & Söderlund, 2018). **Study 2 and Study 3** delve into job strain, social support, psychological resources, and the coping mechanisms employed by project workers to navigate the negative aspects of project work (and their potential detrimental consequences). The inclusion of environmental, project-related, and personal factors in this dissertation is justified by the need of project workers to prevent, avoid, mitigate, or cope with job strain, mental health problems, and poor performance (e.g., An et al., 2019; Naom et al., 2018; Pinto et al., 2016; Sun et al., 2020; Tijani et al., 2021; Frimpong et al., 2023). Thus, this dissertation aligns with the "micro-level project studies" (or type 3) research paradigm within the project organization field (Geraldi & Söderlund, 2018, p. 61).

4. Theoretical foundation

A theoretical foundation is a body of established theories, models, concepts, and principles on which a particular study or research field is built (Saunders et al., 2019). A solid theoretical foundation is essential to inform research objectives, address research questions, develop hypotheses, and place research in a proper scientific context (Saunders et al., 2019). The theoretical foundation of this dissertation consists of several well-established, generic theories that are applicable across stressful workplace environments (Folkman, 2008) (Figure 1): TO theory (Lundin and Söderlund, 1995), COR theory (Hobfoll, 1989, 2011), the JD-R model (Demerouti et al., 2001; Bakker et al., 2004), and extensions such as the JD-R and self-regulation model (Bakker & de Vries, 2021), TMS (Lazarus and Folkman, 1984), and CMR-E (Lazarus, 1991).

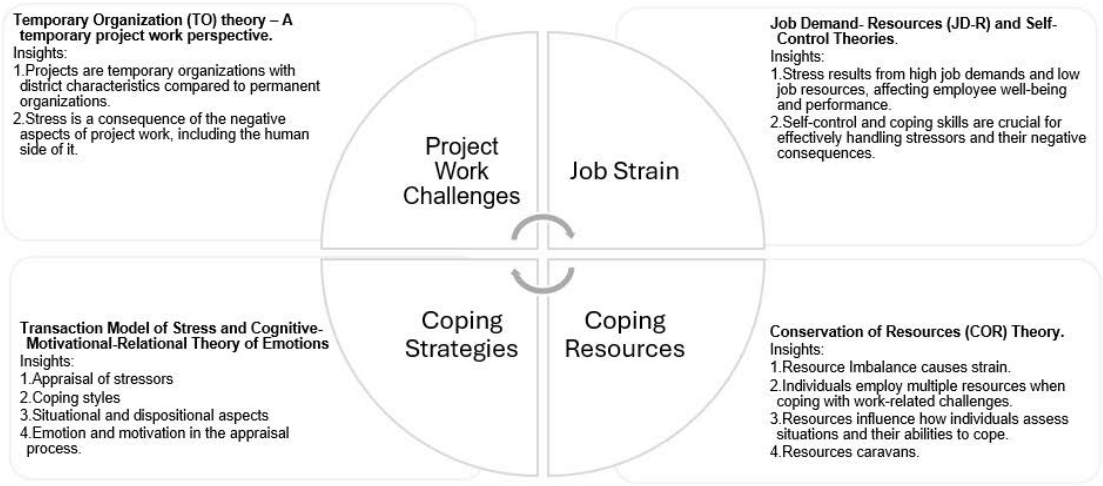
The systematic literature review in **Study 1** demonstrates that theories from the broader fields of psychology and occupational health, such as the JD-R model (e.g., Demerouti et al., 2001) and TMS (Lazarus & Folkman, 1984), are typically used to understand the impacts of project-related demands, work-related stress, burnout, and coping among project managers. **Studies 2 and 3** complement these theories with other theoretical frameworks in the project management literature. Specifically, **Study 2** employs the JD-R model (Demerouti et al., 2001; Demerouti

& Bakker, 2022; Bakker et al., 2004) and COR theory (Hobfoll, 1989, 2002, 2011) to understand how environmental factors such as work-related support and family support influence essential personal resources such as PsyCap and how the interplay between these critical coping resources affects the relationships between project workers' subjective stress, job burnout, and job performance. The JD-R model proposes that high job demands (e.g., work overload, intense work pressure, and poor working relationships) and low job resources (e.g., inadequate supervisor support) are sources of work-related stress, which can lead to job burnout and poor work-related performance (Demerouti et al., 2001). COR theory suggests that employee stress is caused by a lack of, depletion of, or inability to restore vital environmental resources, such as social network support, employment status, culture, and personal resources (e.g., time, human energy, and resilience) (Hobfoll, 1989). Because essential resources interact to form resource caravans, the loss or gain of resources can spiral (Hobfoll, 2011). In addition, COR theory holds that employees who are richer in essential coping resources such as social support, mental energy, self-efficacy, and resilience can prevent, avoid, or mitigate job strain and its detrimental consequences and are better able to cope with environmental stressors (Hobfoll, 2002).

Study 3 draws on TMS (Lazarus and Folkman, 1984), CMR-E (Lazarus, 1991), and the extended JD-R and self-regulation model (Bakker & de Vries, 2021). According to TMS, stress is the tension that occurs when an individual's perceived demands outweigh their perceived ability to cope (Lazarus & Folkman, 1984). The transactional perspective suggests that stress does not solely originate from environmental factors or individual attributes (Lazarus & Folkman, 1984). Instead, stress arises from the interactions of an individual's motives and beliefs, which represent their agendas, with an environment characterized by potential harms, threats, or challenges tailored to the individual's characteristics (Lazarus, 1991). TMS defines coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person's resources" (Lazarus & Folkman, 1984, p. 141). TMS also proposes that an individual's cognitive and behavioral coping strategies affect the impact of a stressor on psychological strain responses and outcomes (Lazarus & Folkman, 1984). CMR-E (Lazarus, 1991) is an extension of TMS that includes the crucial role of underlying motivational–emotional mechanisms in the stress response (Lazarus, 1991; Folkman, 2008). Finally, the JD-R and self-regulation

model (Bakker & de Vries, 2021) suggests dual paths to employee well-being: job demands/resources (i.e., self-efficacy, self-regulation, and coping flexibility) and the effectiveness of coping strategies in dealing with job strain.

Figure 1. Theoretical foundation of this dissertation



5. Research methodology

The research methodology encompasses the methods applied and the rationale guiding data collection, analysis, and the interpretation of the results (Kothari, 2004). Appropriate methodologies ensure the validity and reliability of an investigation. However, researchers must be aware of the philosophical underpinnings of their methodologies (Saunders et al., 2009), which can shape the entire research endeavor and ensure this philosophy aligns with the chosen research paradigm. Therefore, before delving into the research methods, the foundational elements of this dissertation, including the research philosophy, paradigm, approach, and strategy, are briefly introduced.

5.1. Research philosophy

Researchers embrace distinct philosophical positions driven by their beliefs. As outlined by Creswell (2007), a researcher's philosophical standpoint reflects four fundamental philosophical assumptions: ontology, epistemology, axiology, and methodological assumptions. More specifically, "the way we think the world is (ontology) influences what we think can be known about it (epistemology); how we think it can be investigated (methodology and research techniques); the kinds of theories we think can be constructed about it; and the political and policy stances we are prepared to take" (Fleetwood, 2005, p. 11). Table 1 summarizes the essential philosophical stances and the underlying assumptions they encompass.

Table 1. Essential philosophical stances and the underlying assumptions (source: Saunders et al., 2009, p. 119).

Assumption	Positivism	Realism	Constructivism	Pragmatism
Ontology	Reality is external, objective, and independent of social actors.	Reality is external but is interpreted through social conditioning.	Reality is socially constructed, subjective, and multiple and may change.	Reality is external, multiple, constructed, and stratified.
Epistemology	Only observable phenomena can provide credible data and facts. Focus on causality and law-like generalizations, reducing phenomena to their simplest elements.	Observable phenomena provide credible data and facts. Hypotheses about phenomena are initially stated, and the postulated mechanism must then be ascertained.	Subjective meaning and social phenomena. Focus on the details of a situation, the reality behind these details, subjective meanings, and motivating actions.	Observable phenomena and/or subjective meaning can provide acceptable knowledge, depending upon the research question.
Axiology	Research is value-free; the researcher is independent of the data and maintains an objective stance.	Research is conscious of the values of human systems and researchers.	Research is value-laden. The research is part of what is being researched; thus, research is subjective.	Values play a prominent role in interpreting results; the researcher adopts both objective and subjective points of view.
Methods	Systematically structured, large samples, measurements, quantitative, but can use qualitative.	The methods chosen should align with the subject matter, whether quantitative or qualitative.	Small samples, in-depth explorations, qualitative methodology.	Mixed or multiple methods designs, quantitative and qualitative.

5.2. Research paradigm

Research is based on "beliefs about the world around us and what we can possibly discover by research" (Sekaran & Bougie, 2013, p.28), and the choice of a research paradigm can significantly influence the research process, including the research strategy, data collection, and data interpretation (Saunders et al., 2019). A research paradigm offers insights and a foundation for explaining the phenomena under investigation (Saunders et al., 2019). Positivism, constructivism, pragmatism, and critical realism are prominent research paradigms in social science (Saunders et al., 2009).

Positivism, which is rooted in empiricism, posits that knowledge must be derived from empirical experience and views reality as universal, objective, and quantifiable (Saunders et al., 2009). Positivism pursues factual knowledge through analytical detachment in examining phenomena (Sekaran & Bougie, 2013). By contrast, constructivism, also known as the interpretative paradigm, asserts that individuals and groups perceive situations based on their unique experiences, memories, and expectations, resulting in diverse interpretations. From a constructivist standpoint, interpretation gives rise to social reality (Saunders et al., 2009). Consequently, researchers adopting a constructivist perspective explore and comprehend the meanings and contextual factors that influence and determine these interpretations (Sekaran & Bougie, 2013).

Critical realism embraces elements of both positivism and interpretivism but maintains a realist foundation (Mingers, 2000). Lastly, pragmatism permits the mixing of paradigms, assumptions, approaches, and methods of data collection and analysis (Creswell, 2014). Pragmaticism focuses solely on "what works" and is simply oriented toward solving practical problems in the real world rather than being built on assumptions about the nature of knowledge (Creswell, 2014). Hence, pragmatic research is designed and conducted in the manner that best answers the research questions, regardless of its underlying philosophy (Creswell, 2014; Saunders et al., 2009). According to this view, reality is external and multiple simultaneously, and a researcher chooses the philosophy that best serves his research purposes (Saunders et al., 2009).

This dissertation adopts critical realism as the research paradigm. According to Walter and Young (2001), critical realism acknowledges the adjunct concept of naturalism while recognizing that the naturalist viewpoint is contingent on accepting genuine distinctions between the natural and social sciences in the subject matter of study. Critical realism recognizes that the social sphere has characteristics and structures that cannot be adequately comprehended through only positivist or constructivist methodologies. Critical realism suggests that when researching human behaviors (e.g., coping behaviors) and society (e.g., environmental factors), it is crucial to understand the specific factors (e.g., project work/individual characteristics) and complexities of the phenomena under investigation (Saunders et al., 2009). Essentially, critical realism emphasizes the significance of acknowledging the unique nature of the social world.

The critical realism paradigm also suggests that reality is complex and cannot be simplified into a linear or flat structure. According to critical realism, reality comprises three domains: the intransitive domain of the actual (unobservable events), the domain of the actual (independent unfolding of events), and the transitive domain of the empirical (observable events) (Mingers, 2000). Critical realism aims to explain generative mechanisms using abduction, retroduction, and retrodiction as modes of inference (Danermark et al., 2019; Mingers & Standing, 2017). Abduction is used to understand the relationship between data and theory and leads to retroduction, which delves deeper into the actual domain, abstracting generative mechanisms (Danermark et al., 2019; Mingers & Standing, 2017). Retrodiction then conceptualizes the interactions between these mechanisms in the real domain that cause effects in the actual domain (Danermark et al., 2019; Mingers & Standing, 2017).

The current investigation is founded upon critical realism principles for several reasons. First, Critical realism, like positivism, posits a singular, tangible reality, whereas constructivism acknowledges diverse perspectives regarding a specific and objective reality external to human cognition (Healy and Perry, 2000). Second, previous project studies have adopted critical realism approaches to explore project work challenges and their implications for individual project workers (e.g., Delisle, 2020; Hodgson, 2002, 2004, 2011). Third, the critical realism approach enables a detailed understanding of the negative aspects of project work, the crucial roles of environmental and personal resources, and coping mechanisms. Fourth, the studies

of this dissertation recognize that project work aspects and their consequences are influenced by socio-economic (macro level), organizational (meso level), and individual (micro level) factors, and the critical realism approach allows a more comprehensive exploration of these factors and potential mediators and moderators that affect project workers' overall well-being (**Study 1**). We acknowledge that these factors are dynamic and context-specific and may vary depending on project type, employment contract type, project role, project tenure, organizational type, industry type, specific events, and individual attributes (**Study 2**, **Study 3**).

Finally, the critical realism paradigm recognizes that environmental factors influence perceptions of reality. Researchers must consider these influences to uncover observable and underlying structures and mechanisms that exist independently of the factors that give rise to them. This dissertation recognizes the limitations and subjective aspects of the research process. According to Tsoukas (1989), critical realism aims to unveil the underlying structures and mechanisms of reality by observing the study domain and uncovering knowledge through theoretical inference. Therefore, research conducted from the critical realism vantage point takes an empirical approach and seeks to uncover the fundamental aspects of reality (Outhwaite, 1987).

5.3. Research approach

The researchers' philosophical stance refers to their core beliefs about the nature of reality and knowledge, influencing how they approach a study and their perceptions of the subject under investigation (Saunders et al., 2019). It is essential to determine whether knowledge will be constructed at the beginning or end of the research process (Saunders et al., 2009). Three research approaches exist: deductive, inductive, and abductive. According to Saunders et al. (2019), the deductive approach begins with a theory and then tests that theory by conducting a study. Conversely, the inductive approach generates a theory based on data analysis. Finally, the abductive approach combines elements of both, iterating and refining theoretical frameworks based on data (Dubois & Gadde, 2002; Saunders et al., 2019).

Study 2 employs a deductive approach: it starts with a theory and then tests it via quantitative data analysis. The deductive approach is chosen because the research focuses on the effects of workplace and family support on PsyCap and the effects of these coping resources on the relationships between subjective stress, burnout, and job performance. COR theory (Hobfoll, 1989, 2011) and the JD-R model (Demerouti et al., 2001) provide a sufficient basis for tentatively answering the research questions. **Study 3** utilizes an abductive approach to analyze and interpret qualitative data. The study combines qualitative data with established theories and previous research on stress management and coping mechanisms.

5.4. Research strategy

A research strategy is a comprehensive plan or roadmap for systematically investigating a phenomenon (Marshall & Rossman, 2014). Research strategies encompass various methodologies, including experiments, surveys, archival analysis, case studies, ethnographies, action research, grounded theory, and narrative inquiries (Saunders et al., 2019). Yin (1994) emphasizes the importance of selecting an appropriate research strategy based on several factors. These factors include the nature of the research questions, the level of control needed over behavioral events, and whether the study examines contemporary or historical events. Yin (1994) recommends a case study research design when addressing "why" and "how" questions that do not require strict control over behavioral events and focus on contemporary occurrences, whereas studies that address "what," "who," and "where," "how much," and "how many" questions can be carried out through surveys. According to Pratt (2009), "qualitative research is great for addressing 'how' questions – rather than 'how many'; for understanding the world from the perspective of those studies (i.e., informants); and for examining and articulating processes" (p. 856).

In this dissertation, **Study 2** addresses specific research questions that necessitate the use of a survey-based research method. This method, which is widely used in quantitative research, permits the systematic collection of empirical data related to the subject of investigation. It offers several advantages, including the ability to apply various data analysis techniques, such as descriptive and inferential statistics, structural equation modeling, and hypothesis testing. These advantages enhance the objectivity, reliability, validity, and generalizability of the results

(Forza, 2002). A web-based survey is used as a fast and convenient means of distributing questionnaires and gathering targeted participant data (Saunders et al., 2019).

By contrast, **Study 3** aims to explore the coping mechanisms ("how" and "why") of project workers ("who") to provide a deeper understanding of how to effectively navigate the negative aspects of project work and their detrimental consequences for individual project workers' overall well-being (Aguilar Velasco & Wald, 2022; Bowen et al., 2021; Cicmil et al., 2016; Delisle, 2020) and the factors that influence coping strategies (Tijani et al., 2021). Hence, this study adopts a qualitative exploratory method and uses data from multiple sources, including semi-structured interviews, observations, and publicly available organizational information, to investigate these questions.

5.5. Research design, context, and data sources

In the research design process, the researcher must decide the number and type of questions, answers, scale items, variables, target population, sample size, inclusion and exclusion criteria, and other design aspects (Saunders et al., 2019).

5.5.1. Study 1

In **Study 1**, a systematic review was conducted following a three-stage approach (Tranfield et al., 2003). First, the search strategy, keywords, and research objectives were defined. Second, a method that allowed replication was employed to gather and analyze relevant data, resulting in a comprehensive understanding of the research findings. Finally, the findings were related to ongoing academic discussions.

In the first stage, three databases (ISI Web of Science, EBSCOhost – Business Source Complete, and Scopus) were used to identify pertinent sources published up to 2020 and covering a broad range of industries, including construction, O&G, and the public sector. The search encompassed titles, keywords, and abstracts of articles, restricted to English-language, peer-reviewed academic journals. A total of 18,982 contributions were initially identified. After a thorough screening, 290 articles addressing projectification, project organizing, project work, and project

workers were retained. Data extraction involved an in-depth examination of the full-text papers. An Excel spreadsheet was used to create a comprehensive database containing general information about each article, such as title, author, year, and journal, as well as details on the main objective, research context, theoretical foundations, methodology, sample size, and significant findings.

In the second and third stages, data analysis and synthesis were performed qualitatively, with categories and sub-categories emerging from the text material. An inductive approach guided the coding process, and the NVivo tool facilitated systematic coding. The categories were further refined through several iterations. The analysis uncovered potential determinants and individual outcomes, which were categorized under dimensions of project participants' overall well-being at work. These sub-categories were then synthesized into more generic categories. The analysis generated four core categories: environmental factors, organizational factors, project factors, and individual factors. The findings of the review were reported and classified based on these categories and sub-categories.

5.5.2. Study 2

In **Study 2,** a cross-sectional quantitative approach was employed to gather and analyze data from professionals engaged in project work. A web-based survey was used to collect data and yielded 304 valid responses after eliminating errors and incomplete responses. The selection of project-oriented and non-project-oriented organizations was influenced by the increase in the share of projects across various economic sectors in Western economies (Schoper et al., 2018) and calls to investigate the links between perceived stress, job burnout, psychological factors, and work performance among project workers across industries (An et al., 2019) and in different contexts (Pinto et al., 2016). The study encompassed various industries from Mexico and Norway, including construction, O&G, healthcare, and education. Respondents were required to have a minimum of six months of project-based work experience.

As there are no conventional databases for research in the project context and gaining access to project workers is challenging (Bjorvatn & Wald, 2018), the sampling procedures used in previous project research (Nuhn et al., 2019; Spanuth & Wald, 2017) were complemented with convenience and snowball sampling

strategies. First, we collaborated with several project management associations in Norway and the International Project Management Association (IPMA) in Mexico to insert links to a web-based questionnaire in their newsletters and websites. Second, we collaborated with two research assistants and several organizations in various industries to email our questionnaire link to their project employees.

The senior managers of the participating organizations were contacted through multiple channels, including email, telephone, face-to-face meetings, and video calls. Each contact person from the recruited organizations received a personalized invitation, followed by a reminder a few weeks later. The invitation provided information about the study's objective, data confidentiality, voluntary participation, and the estimated time to complete the questionnaire. In addition, the author's contact information was provided for any participant inquiries. Snowball sampling was encouraged by inviting initial participants to forward the survey to other project participants, emphasizing that the invitation should be extended solely to those engaged in projects. Due to the utilization of both probabilistic and non-probabilistic sampling methods, the exact response rate for the survey is unknown.

All questionnaire items were derived from established scales used in previous project studies. The questionnaire captured demographic information and included scales for various constructs in separate sections. All items were anchored using a seven-point Likert scale. The cover page of the questionnaire stated the study's aim, data confidentiality, voluntary participation, the estimated time it would take to complete the questionnaire, and the research team's contact information. In addition, the questionnaire included a clear definition of a project as a non-routine task with a specified target, a minimum duration of four weeks, and at least three participants (Schoper et al., 2018). Respondents were asked to report their experience based on their last completed project.

The questionnaire was administered in four languages: English, Norwegian, Swedish, and Spanish. Items and anchors were translated and then back-translated by independent bilingual individuals. A pilot study was undertaken involving 27 project practitioners. This initiative aimed to identify and address any ambiguities present in the questionnaire and to enhance the reliability and validity of the survey instrument. This process confirmed the reliability and validity of the constructs

and led to refinements in the wording of several items. Assurance of anonymity was emphasized continuously throughout the data collection process. Some of these items were previously used by Aabel and Aasland (2019). Data for this study were collected from March 2019 to April 2022.

Before data analysis, descriptive statistical analysis was performed, including checking for normality, examining frequencies, calculating means, and identifying outliers. The data were analyzed using partial least squares-structural equation modeling (PLS-SEM) employing Smart-PLS 4 software. In addition, common method bias was assessed to ensure a robust survey design (Podsakoff et al. 2003).

5.5.3. Study 3

Study 3 applies a qualitative research design and uses primary data collected from 37 project workers at different companies in the Norwegian O&G industry. The O&G industry was chosen to explore the coping mechanisms employed by project workers because it has well-established project management practices and a diverse, highly skilled project workforce. Furthermore, the O&G industry is one of the most essential in Norway, and companies in this industry are facing multiple challenges, such as organizational changes, an aging workforce, a shortage of skilled project workers, and talent retention (Sumbal et al., 2021). Moreover, within this industry, work is inherently project-based, characterized by temporary assignments, collaborative teamwork, resource limitations, and a diverse set of competencies spanning various departments (Gustavsson, 2016). Project workers in this environment frequently confront high pressure, stress, and long working hours due to excessive workloads and tight deadlines (Delisle, 2020). Finally, as this industry employs a diverse group of employees with different professional and cultural backgrounds on a permanent and temporary basis, the work environment has been identified as challenging and, in some cases, toxic, negatively affecting employees' overall well-being (Mahipalan & Garg, 2023; Nielsen et al., 2012).

This study centered on individual project workers as the primary unit of analysis and employed purposive and snowball sampling procedures to recruit interviewees who fit the study's selection criteria (Patton, 1990): accessibility, a minimum of two years of project-based work experience, engagement in projects in the O&G industry at the time of the study, gender diversity, and project professionals based

in Norway. Purposive sampling was applied because this method is considered appropriate for exploratory research (Neuman, 2014). Because this study was exploratory, the sample included a range of demographic and job characteristics, such as gender, tenure, and role in the project.

The participants were recruited through various strategies. The researcher, who was also the author of the study, met contact personnel (gatekeepers) and some participants at an annual O&G industry exhibition (called ONS) in Stavanger in 2018. These contact people were used to reach more eligible participants at the start of the study. The researcher sent emails containing an invitation to participate to those who had previously expressed an interest in participating. Interested participants were contacted by email or phone, where the researcher provided more detailed information about the study and addressed any individual concerns regarding participation. After confirming that the interested participant met the selection criteria, an appointment was made to conduct the interview. These participants were used to identify additional potential participants via snowball sampling. In total, 37 interviews (the point of data saturation) were conducted with project workers in project-oriented organizations in Norway's O&G industry. The participants varied in age, tenure, and hierarchical positions and included both "internal" project workers (permanent employees) and "external" project-based consultants. Most of the participants held university degrees equivalent to master's degrees in economics and engineering.

Data were collected through face-to-face and online semi-structured interviews. The semi-structured interview format was developed based on findings from the literature review (Study 1). Prior to implementation, the researcher's supervisor rigorously reviewed the interview guidelines. Subsequently, the researcher conducted preliminary interviews with colleagues to gain feedback (the responses were excluded from the final analysis). The interviews encompassed questions designed to capture the interviewees' perceptions, experiences, and coping strategies for handling project work challenges and their associated consequences. The interview process began with background inquiries and incorporated numerous follow-up questions to clarify interviewee statements, ensuring a more accurate interpretation of the interview material (Alvesson, 2003). Specific examples of how project workers cope with perceived challenges and their consequences were sought during the interviews.

Twenty-three interviews were conducted in person at the participants' workplaces, which included one operator and one supplier company. In addition to conducting the interviews, the researcher took notes on impressions and observations of interactions around workstations, coffee corners, and lunch tables while onsite. Notes were handwritten during the observations or immediately afterward by the researcher. These observations, insights, and impressions were captured as field notes that helped the researcher understand the company's setting and were later used to confirm emerging theoretical perspectives during the analysis (Atkinson, 2015). Due to the COVID-19 pandemic, the remaining interviews were conducted online via Microsoft Teams or Zoom. Participation in the study was voluntary, and all participants were assured of the confidentiality of any gathered information and that their statements could not be traced back to them. The participants were also allowed to withdraw without stating any reason for withdrawing. The interviews were recorded with the participant's permission and subsequently fully transcribed and anonymized for analysis. The participants were informed that the recordings would only be used for transcription and then deleted. The interviews lasted approximately 30 minutes on average and were conducted in English. Some interviews were followed by telephone calls to clarify responses. Responses did not differ between face-to-face and virtual interviews.

Interview data were systematically gathered from various sources, including project participants across different hierarchical levels, organizations, tenures, and genders (Eisenhardt & Graebner, 2007). The overarching goal was to understand the coping mechanisms employed by various project participants, including leaders, managers, and team members, to handle potential project-related stressors and their potential detrimental outcomes. This objective was fulfilled by conducting interviews until data saturation was attained. Data for this study were collected from September 2018 to April 2022.

The analysis commenced with the transcription of all interviews. The researcher thoroughly reviewed the transcripts to ensure exact correspondence between the accounts and the original recordings. The data were analyzed using the Gioia methodology (Gioia et al., 2013) to ensure rigor and to gather informant-centric content rather than impose an understanding based on the literature (Gioia et al., 2013). The Gioia methodology is a predominantly "bottom-up" approach to theory

building that prioritizes informants' lived experiences and language, incorporating existing literature only after the theoretical model has substantially evolved (Gioia et al., 2012). Data analysis begins with the assumption that organizational phenomena are socially constructed by "people [who] know what they are trying to do and can explain their thoughts, intentions and actions" (Gioia et al., 2012, p. 17). The Gioia approach aligns with the overarching goal of investigating and gaining deeper insights into project workers' coping mechanisms to navigate challenges in project work and mitigate potential adverse outcomes.

Following the Gioia methodology, an abductive research approach was adopted (Mantere & Ketokivi, 2013) as a dialogical process between theory and data (Cannon & Kreutzer, 2018). During the interactive data analysis, codes, themes (categories), and aggregated dimensions were labeled, clarified, and refined over time. To prevent confirmation bias, the existing literature was partially ignored in the earliest stage of data collection and analysis (Gioia et al., 2012; Murphy et al., 2017, p. 296). Confirmation bias is the tendency to implicitly select and use evidence conforming with the researcher's beliefs (Murphy et al., 2017). Emphasizing the informants' language and experiences rather than the researcher's theoretical terms can mitigate confirmation bias (Gioia et al., 2012).

Furthermore, the Gioia approach suggests presenting the data structure to show how "first-order" and "second-order" codes or categories are related to each other (Corley and Giogia, 2004, p. 184). More specifically, the first-order codes (or categories) are those closest to the informants' words or lived experiences and are shown in detail. The first-order codes are aggregated into second-order codes, which are more abstract terms and labels created by the researcher. The second-order codes then feed into one or more aggregate dimensions (the central constructs of the study) (Murphy et al., 2017, p. 295). Consistent with the grounded theory of emergence, during the coding process, the researcher continually looked for new emerging codes or terms used by informants in the interview (Charmaz, 2006), which became part of the data structure (Gioia et al., 2012). Finally, the data were coded using NVivo software. Following academic norms and scientific research ethics, the names of the companies and participants were not visible during coding.

5.6. Research quality

Generalizability and rigor are essential elements of a scientific investigation, as they ensure that the study methodology is transparent and help readers to assess the research quality and applicability of the findings to different populations or settings (Saunders et al., 2019). To strengthen the overall quality of **Study 1**, the findings and conclusions were drawn from the studies included in the review, ensuring their applicability to professionals engaged in projects in different organizations across economic sectors. To ensure the reliability and credibility of the systematic review, the literature survey was performed using different scientific search engines and databases (i.e., Web of Knowledge, Business Source Premier, and Scopus), stringent criteria for study inclusion (e.g., only peer-reviewed scientific articles), and transparent and replicable methods.

Study 2 utilized a survey-based approach, an objective method that facilitates the assessment of reliability and validity and enhances result generalizability (Forza, 2002). Quality was assured through several key steps. First, established scale items were integrated into the questionnaire, contributing to the robustness of the study. Additionally, the survey underwent a pilot test before dissemination, validating its effectiveness and relevance. In the subsequent phase, the dataset was meticulously prepared for data analysis, which involved excluding incomplete responses to ensure data integrity, and appropriate data analysis software was used.

Furthermore, a comprehensive set of analyses was systematically conducted, including preliminary descriptive statistics, construct reliability, validity assessments, evaluations for multicollinearity, and examinations for common method bias. As recommended by Forza (2002) and Hair et al. (2017), these analytical procedures collectively contributed to a robust survey design. The methodological rigor at each stage underscored the reliability and validity of the study's findings and complied with established best practices in research design and analysis. These efforts ensured the generalizability of the results (Saunders et al., 2009).

Study 3 adhered to Lincoln and Guba's (1985) criteria for establishing trustworthiness in qualitative research, namely credibility, transferability, dependability, and confirmability. Credibility refers to whether the findings are "true" or "accurate" and can be achieved by aligning the findings with the

interpretations by the study participants (Lincoln & Guba, 1985). Credibility can be enhanced when researchers acknowledge and communicate the biases they hold at the initiation of the investigation (Creswell, 2014). To establish credibility, the researcher first verified that all participants in **Study 3** met the selection criteria (e.g., at least two years of project-based work experience) (Whittemore et al., 2001). Second, probing techniques were employed throughout the interviews, as recommended by Kvale (1996). For example, the participants were asked to provide detailed explanations, which ensured that their responses were accurately understood.

Transferability—the applicability of findings across contexts—depends on the similarity between earlier and later contexts (Lincoln & Guba, 1985). To meet this criterion, detailed descriptions of the research context and conceptual models are provided in this dissertation, thus allowing future researchers to assess the extent to which the study's conclusions can inform our understanding of similar phenomena in different settings (Lincoln & Guba, 1985).

Dependability refers to consistency (i.e., accuracy from multiple viewpoints), which can be achieved using multiple data sources and researchers (Lincoln & Guba, 1985). This criterion was achieved by drawing on the primary data (e.g., transcripts), observations from site visits, and secondary data. The researcher also sought feedback on the coded data from the researcher's supervisor to establish the accuracy of the categories that emerged.

Confirmability, like replicability, requires impartial assessment (Lincoln & Guba, 1985), which can be achieved only if the researcher reports the methodology and findings transparently (Murphy et al., 2017). Confirmability was strengthened by the use of the Gioia approach, which enhances qualitative rigor by ensuring that the research findings are meticulously presented, highlighting coherent connections among the collected data, emergent concepts, and the resulting proposed model (Gioia et al., 2013). Figure 2 depicts the research design landscape of the doctoral dissertation.

Finally, to ensure the accuracy and credibility of the data obtained in Study 3, the researcher followed specific criteria involving authenticity, reflexivity, and criticality. Authenticity was achieved by maintaining an "awareness of the subtle

differences in voices of all participants" (Whittemore et al., 2001, p. 534) and by being conscious of the potential influence of the researcher during data collection. The researcher avoided making preconceived assumptions about the participant's project work-related experiences by being open-minded and curious about their responses. Reflexivity was actively pursued throughout the analysis processes through multiple readings of the coding to identify and address potential competing interpretations (Alvesson et al., 2003). The criteria of "criticality" (e.g., exhibiting critical appraisal throughout the research process) and "integrity"—which requires reflection and humility in presenting the results (Whittemore et al., 2001, p. 531)—were fulfilled by seeking feedback on the results from the researcher's supervisor and six study participants.

6. Synthesis of the findings

The themes and concepts of the three studies of this dissertation are interconnected. **Study 1**, *"The dark side of projectification: A systematic literature review and research agenda on the negative aspects of project work and their consequences for individual project workers,"* develops a multi-level framework incorporating determinants of the negative aspects of project work at the societal, organizational, project, and individual levels. The systematic literature review shows that socio-psychological and occupational health theories are the dominant theoretical frameworks in studies of the effects of projectification. The most frequently studied individual outcomes are affective symptoms such as stress and work-related outcomes such as turnover intentions. Detrimental individual consequences are primarily associated with psychosocial risk factors, including job insecurity and a poor work environment. By identifying the macro-, meso-, and micro-level determinants and consequences of the negative aspects of project work and emphasizing the prevalence of JD-R theory in current research, this study serves as a conceptual foundation, setting the stage for a deeper comprehension of project work challenges and providing a framework for the subsequent empirical investigations in **Study 2** and **Study 3**.

The empirical analyses in **Study 2**, *"Mitigating the negative aspects of project work: The role of psychological capital and coworker and family support,"* show that support from coworkers and family is positively associated with PsyCap. Additionally, PsyCap mediates the effects of social resources on subjective stress,

which can lead to job burnout and poor work performance. Both environmental resources (e.g., co-worker and family support) and PsyCap can mitigate perceived stress, job burnout, and their negative consequences. By employing COR theory and the JD-R model, **Study 2** connects the theoretical framework established in **Study 1** with empirical data, enhancing the practical relevance of the research.

Finally, **Study 3**, "*Dealing with the dark side of projectification: The influence of coping strategies and resources on job strain,"* finds that senior project workers employed by operator companies are active agents who employ adaptive coping strategies, including job-crafting activities, strategic relationship building, voice behavior, self-control of negative thoughts and emotions, and proactive vitality management (e.g., creating opportunities for recovery and managing energy levels), to effectively address organizational/job and personal stressors and cope with job strain. By contrast, project workers from supplier companies, early-career project workers, and those with perfectionistic tendencies are more likely to adopt maladaptive coping strategies, including extending working hours, ignoring job strain symptoms, self-blame, passive acceptance (e.g., silence), negative work-related rumination, and avoidant behaviors (e.g., turnover intentions). Additionally, **Study 3** identifies resilience, time orientation, and instrumental support as crucial coping resources for project workers. Finally, this study shows that in addition to project-related demands (e.g., project/work/role overload and time pressure), organizational demands (e.g., project culture, inadequate workplace support, and psychosocial hazards) and personal demands (e.g., perfectionistic tendencies) are antecedents of the negative aspects of project work and their detrimental consequences, consistent with the findings of **Study 1**. **Study 3** finds that these stressors may influence some project workers to employ maladaptive coping strategies.

By focusing on coping strategies employed by project workers to manage stressors inherent in project work, **Study 3** extends the exploration of the overall aim of this dissertation. It identifies and emphasizes the crucial role of personal resources, such as coping time orientation, adequate support, and PsyCap, in shaping coping strategies. This study enriches the overall understanding of how individuals at different stages of their careers cope with challenges and offers insights into adaptive and maladaptive strategies. The qualitative nature of this investigation

brings depth to the empirical findings, providing a more nuanced perspective on the coping mechanisms utilized by project workers.

The studies explore four interconnected themes and concepts. The first is the dark side of projectification: the negative aspects of project work and their consequences for individuals involved in projects. **Study 1** identifies macro-, meso-, and micro-level determinants of the negative aspects of project work and potential mediators and moderators, such as workaholic behaviors and social and psychological factors. The study also reveals that the negative aspects of project work can affect employees' well-being, health, and work-related outcomes. These elements are discussed in all three studies.

The second theme—the role of psychological factors in job stress, burnout, and job performance among project workers—is addressed in **Study 2** by the concept of PsyCap (which encompasses self-efficacy, optimism, hope, and resilience; Luthans et al., 2007b). These protective coping resources are highlighted and discussed in all three studies. PsyCap plays a crucial role in reducing job stress and job burnout and enhancing job performance. **Study 2** also highlights the importance of developing positive psychological resources, such as PsyCap, in employees. The third theme is interrelated with the second and focuses on social resources: support from the work and family domains enhances PsyCap and mitigates job strain. **Study 2** also emphasizes the importance of creating a supportive work environment to enhance individual positive cognitive resources, well-being, and, ultimately, job performance.

Finally, the fourth theme is the coping strategies employed by project workers to effectively handle the negative aspects of project work and job strain symptoms. **Study 3** enriches our understanding of how project workers who are engaged in multiple projects simultaneously handle project-related demands and job strain. Adaptive and maladaptive coping strategies are identified, and the alignment of these strategies with the broader theme of addressing the negative aspects of project work is discussed. Additionally, **Study 3** reveals the crucial influence of coping resources such as resilience, self-control abilities, future time orientation, and work and nonwork support on coping mechanisms and the use of coping strategies.

Collectively, the three studies of this dissertation cohesively explore the challenges of project work and their implications for individual project workers. The research systematically delves into project-related stressors, responses to job strain, and potential influencing factors, shedding light on the perceptions and experiences of individual project workers. Implications for well-being and job performance are thoroughly examined. The studies progress from the conceptualization of negative aspects of project work to empirical analyses of coping resources, coping mechanisms, strategies, and potential factors affecting them. Overall, the studies provide detailed explanations of PsyCap, social resources, and coping strategies, contributing to the literature on project management and advancing the theoretical understanding of these concepts. The studies also offer practical insights for leaders of organizations and HR specialists who want to create a supportive work environment for project workers. The comprehensive frameworks forged by this research contribute significantly to understanding and addressing the challenges inherent in project work.

Following this summary of the dissertation, Chapters 2, 3, and 4 present Studies 1, 2, and 3, respectively. Chapter 5 offers a concluding synthesis and outlines implications, limitations, and directions for future research.

Figure 2. Research design landscape of the doctoral dissertation

Chapter 1: Extended Summary of the Doctoral Dissertation

	Chapter 2 (Study 1)	Chapter 3 (Study 2)	Chapter 4 (Study 3)
Article title	The dark side of projectification: A systematic literature review and research agenda on the negative aspects of project work and their consequences for individual project workers.	Mitigating the negative aspects of project work: The roles of psychological capital and coworker and family support.	Dealing with the dark side of projectification: The influence of coping strategies and resources on job strain.
Research Objective	Review and synthesize the most frequently employed theories in project studies at the micro level and identify the negative aspects of project work and their implications for individual project workers across economic sectors.	Explore the influences of workplace and family support on cultivating and nurturing psychological capital (PsyCap) and how these essential coping resources influence the relationships between perceived job stress, job burnout, and individual performance.	Explore the coping strategies adopted by project workers to deal with job strain, the causes of job stress and stressful situations, how these strategies are employed, and what factors influence them.
Research Questions	1. What negative aspects of project work and their consequences for project workers and managers have been addressed in prior studies? 2. What are the predominant theories mentioned in the reviewed studies? 3. What potential directions should future research in this area take?	1. What are the environmental and individual factors that may help project workers avoid, prevent, or reduce job burnout? 2. How do these factors influence the relationships between subjective stress, job burnout, and job performance in project workers?	1. How do project workers cope with job strain and stressful situations? 2. What factors influence their coping strategies?
Research Approach	Conceptual	Quantitative approach based on deductive reasoning	Qualitative approach based on abductive reasoning
Methods and Data	Based on 290 scientific articles from Web of Science, EBSCOhost, and Scopus.	Primary data from an online structured questionnaire administered to professionals in Mexico and Norway engaged in projects across economic sectors (304 responses).	Primary data from semi-structured interviews with 37 project workers in multi-project settings in different types of companies in Norway's oil and gas (O&G) industry.
Data Analysis	Systematic content and thematic analyses	Structural equation modeling	Gioia methodology

Main findings	JD-R theory is a dominant theory in research. The most frequently studied individual outcomes are job strain, such as job burnout, and work-related outcomes, such as turnover. Detrimental individual outcomes are mostly associated with psychosocial work factors such as poor work environments and job insecurity.	Co-workers and family support are positively associated with PsyCap. Additionally, PsyCap mediates the effects of social resources on subjective stress, which can lead to job burnout and poor work performance. Thus, coworker and family support and PsyCap can mitigate perceived job stress and its negative consequences.	Senior project workers use adaptive coping strategies. By contrast, juniors, consultants, or those driven by perfection and/or concerns about failure use maladaptive coping strategies to react to stressors and avoid or mitigate job strain symptoms. Maladaptive coping strategies eventually become counterproductive, as they can add stress and amplify an individual's job strain symptoms. Coping resources such as coping time orientation, resilience, and instrumental support appear to play crucial roles in coping mechanisms and the employment of coping strategies.

Chapter 5: Conclusion

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Chapter 2: The Dark Side of Projectification: A Systematic Literature Review and Research Agenda on the Negative Aspects of Project Work and their Consequences for Individual Project Workers[1]

Abstract

Purpose – Project work usually has a positive connotation and is considered innovative and modern. However, many project workers suffer from chronic stress, work overload, and burnout. This study aims to integrate the determinants of the negative aspects of project work and their implications for individuals involved in projects.

Design/methodology/approach – A systematic review was used to analyze 290 papers from various disciplines to identify the most used theories, determinants of the negative aspects of project work, and the consequences of these aspects for project participants' work-related and overall well-being.

Findings – Based on the findings of the review, this paper develops a multi-level framework that includes determinants at the levels of society, organizations, projects, and individuals and discusses opportunities for further research. The findings show that socio-psychological theories and occupational health theories are the dominant theories used in research. The most frequently studied individual outcomes are affective symptoms and work-related outcomes. Detrimental individual outcomes are mostly associated with psychosocial work factors.

Originality/value – The study contributes to the literature by providing a comprehensive review of research on the negative aspects of project work and their implications for project workers. The multi-level framework can serve as a guide for future research and provide important insights for practitioners.

Keywords: Project work, Project worker, Personnel, Well-being, Burnout, Stress, Performance

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[1] This article was co-authored with Andreas Wald. It was published in 2022 in the *International Journal of Managing Projects in Business*, Vol. 15(2) pp. 272-289.

1. Introduction

Projectification describes the increasing use of projects and its "destabilizing effects on permanent logics of the firm such as task definitions, hierarchic regulations, carrier management, functions, and suppliers relations" (Midler, 1995, p. 363). Projectification impacts both the economy and society (Maylor et al., 2006; Lundin et al., 2015; Henning & Wald, 2019), as projectification can drive individuals to embrace project work, run their personal lives as a project, and view themselves and others as projects (Berglund et al., 2020). Firms use projects to organize work to enhance organizational performance, innovativeness, and competitiveness (Bakker, 2010; Spanuth & Wald, 2017).

The increase in projectification (Schoper et al., 2018) has led to a significant demand for highly skilled and experienced project personnel (Crawford et al., 2013; Packendorff & Lindgren, 2014). For individual project workers, projectification corresponds to greater uncertainty and new career paths (Lloyd-Walker et al., 2018). The project workforce must be highly agile, flexible, and efficient, as many project workers (temporarily) leave their functional unit roles to adopt a project work role and vice versa (Dube, 2014). Project work can be engaging and inspiring, but it also involves tight deadlines, intense pressure on individuals (Gällstedt, 2003), and higher workloads that may even pose risks to the health and well-being of project workers (Palm & Lindahl, 2015; Zika-Viktorsson et al., 2006). Empirical research has shown that project participants are exposed to multiple challenges and paradoxes, which may lead to counterproductive outcomes such as job dissatisfaction, anxiety, and frustration (Dube, 2014). Project work can also contribute to burnout, health problems, and turnover intentions, among other detrimental consequences (Cicmil et al., 2016; Pinto et al., 2014; Yang et al., 2017).

Although project studies have begun shifting focus from more technical to people-oriented aspects (Shurrab et al., 2018), research adopting individual workers as the unit of analysis remains relatively scarce (Geraldi & Söderlund, 2018). In particular, analyses of the negative aspects of project work for individuals are scattered across several fields of study, including operations and technology management, organization studies, project management, and information

management, and thus are published in a variety of journals from different disciplines. Although Darling and Whitty (2020) highlight the impact of stressors on the project workforce's physical and mental health in a recent review of stressors in project work, no review has synthesized and integrated the diverse set of determinants of the negative aspects of project work and their manifold implications for the workforce. This dispersion of research in the field hinders the accumulation of knowledge and the progress of research. The present paper reports the results of a systematic literature review of the current state of research on the negative aspects of project work at the individual level. The review is guided by the following three questions:

1. What negative aspects of project work and their consequences for project workers and managers have been addressed in prior studies?
2. What are the predominant theories mentioned in the reviewed studies?
3. What potential directions should future research in this area take?

A comprehensive review of research on the negative aspects of project work and their implications for project workers is conducted, and the findings from diverse disciplines are published in various publication outlets are synthesized. Ultimately, the current body of knowledge is summarized in a multi-level framework that can serve as a guide for future research.

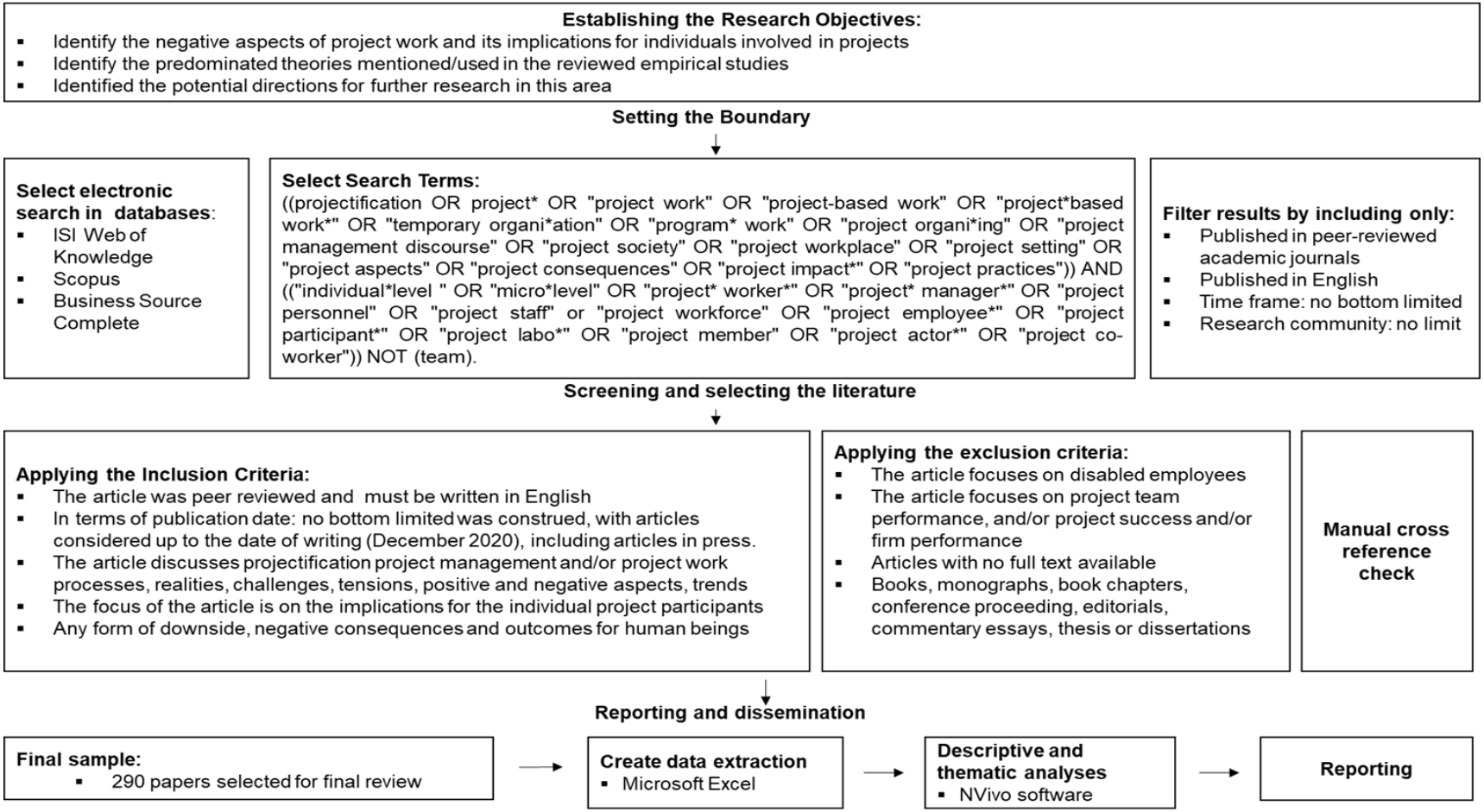
This review is organized as follows. The next section describes the methodology. This is followed by the presentation of the descriptive and thematic findings, which are then used to develop a research framework that integrates the different research streams. Finally, emerging trends, future research directions, and limitations are explained.

2. Methodology

A systematic review was performed following the three-stage approach suggested by Tranfield et al. (2003), as shown in Figure 1. First, the overall search strategy, keywords, and research objectives were defined. Next, a systematic review process using an approach permitting replication was performed. Accordingly, detailed information about the assembled data was collected, analyzed, and synthesized to

permit an explicit understanding of the research findings. In the final stage, the research findings were related to ongoing conversations in the academic literature.

Figure 1. Flow diagram of the systematic review



2.1. Search strategy

To identify relevant sources, the search terms shown in Figure 1 were used with three databases, i.e., ISI Web of Science, EBSCOhost – Business Source Complete, and Scopus, for all years until 2020 to ensure the inclusion of articles published in recent decades. Combinations of the search terms were used to search titles, keywords, and/or abstracts of articles. The search was limited to articles published in the English language in peer-reviewed academic journals. Subject areas were not limited. In terms of publication dates, no limit was set. The sample includes publications from 1973 to 2020.

The initial search yielded a total of 18982 contributions. At this stage, the titles, abstracts, and in some cases, the full text of the identified papers were read, and only those studies discussing projectification, project organizing, project work, and individuals involved in project work were retained, resulting in 2088 papers. The selected studies were retrieved and stored in a local repository for further analysis. Subsequent deletion of duplicates reduced the number of articles for further filtering to 970. After reading through each of the 970 publications, another 697 were excluded due to a lack of topical fit, e.g., studies without a focus on the individual level or studies focusing on project team outcomes. In addition, following Denyer and Tranfield (2009), the systematic literature search procedure was strengthened by reviewing the references of the core studies to identify additional papers that were not returned by our database search, which generated another 46 relevant contributions for inclusion. Finally, a total of 290 articles were included in the analysis.

2.2. Data extraction

Data were extracted by in-depth reading of the full-text versions of all papers in the sample. An Excel spreadsheet was used to create a database to ensure that all contributions from the sample were thoroughly analyzed. To facilitate the analysis of the vast amount of textual data, Denyer and Tranfield's (2009) guidelines for extracting data were followed to collect general information about the article (e.g., title, author, year, journal) and features such as the main objective, research context, theoretical foundations, methodology, sample size, and major findings. Additionally, all items identified as determinants of the negative aspects of project

work and outcome variables for project participants were extracted, clustered, and preliminarily coded. The full description of the extraction form can be found in Appendix 1A. During the data extraction process, each study was classified according to the main topics that emerged from the literature.

2.3. Data analysis and synthesis

The text material was qualitatively analyzed to obtain a deeper understanding of the emerging categories and link the categories, sub-categories, and sub-(sub-) categories. The coding evolved inductively as the analysis progressed. After several iterations, the categories were refined. The NVivo tool was used to further analyze and systematically code the material, and the inductive technique of Corbin and Strauss (1990) was used to identify the most popular research categories, as suggested by Wolfswinkel et al. (2013). In reviewing the identified themes/categories and patterns, the analysis captured potential determinants (e.g., project work-related stressors) and individual outcomes (e.g., work-life imbalance). Based on the research questions and identified determinants, as well as the explanations provided, a list of factors affecting dimensions of project participants' overall well-being at work (e.g., affective state, cognitive functioning) was created. Specific sub-(sub-)categories were assigned to each research paper and then synthesized into a more generic category. This was done in three stages: First, during the thematic analysis, open coding was performed to identify, name, categorize, and describe the events/actions/interactions found in the data (the final pool of articles). Many papers shared the same sub-category. For example, of the 290 articles, ten studied project work-related factors (e.g., Bowen et al., 2014; Pinto et al., 2014), and those ten articles shared the same sub-categories, namely, job demand and job resources problems. Second, sub-categories were identified following an axial coding approach, which involved the gathering of the open codes into respective axial codes (concepts). For example, the sub-(sub-)categories of "role ambiguity," "role conflict," "role overload," and "role stress" were grouped to form a sub-category called "role problems." Third, the sub-categories (axial codes) were compared based on their similarities and differences. For example, the sub-categories labeled "organizational structure and climate," "organizational culture," "organizational justice," "hybrid systems," "HRM practices," and "contractual type, remuneration, and benefits" were considered similar, as these sub-categories highlight the complexities of the

organizational context that cause tensions and stress for people involved in projects. Thus, this group of sub-categories formed a category labeled "organizational factors." This process generated a total of four core categories: environmental factors, organizational factors, project factors, and individual factors. Lastly, the review findings were classified according to the four main categories as well as the sub-categories within each of these categories generated through the thematic analysis (see Appendix 1B for the analysis of the data moving from first-order concepts to themes and dimensions). The identified core categories and sub-categories were consistent with the taxonomy for the antecedents of turnover intention among project engineers developed by Ghapanchi and Aurum (2011). Subsequently, a classification framework comprising all identified elements was created.

3. Descriptive findings

3.1. Temporal development

The negative aspects of project work and the implications of project work for individual project workers received only minor scrutiny in the early 1990s. Publications increased slightly in the early 2000s when up to five papers were published yearly, followed by more significant proliferation in the last decade. The largest share (approximately 85%) of the papers were published between 2010 and 2020.

3.2. Publication outlets

Research on the negative aspects of project work has been published in diverse outlets covering a broad range of disciplines (see Table 1). Among them, *International Journal of Project Management* (66), *International Journal of Managing Projects in Business* (23), *Project Management Journal* (19), *Construction Management and Economics* (13), and *Engineering Construction and Architectural Management* (13) are top-ranked. The remaining papers were published in various journals in management and organization research and in areas such as organizational psychology and information systems (IS). Due to the interdisciplinary nature of projects, research on the negative aspects of project work has found a home in various outlets.

Table 1. Publication distribution among the most popular journals

Journals	Number of articles
International Journal of Project Management	66
International Journal of Managing Projects in Business	23
Project Management Journal	19
Construction Management and Economics	13
Engineering, Construction and Architectural Management	13
International Journal of Human Resource Management	8
Human Relations	8
Journal of Construction, Engineering, and Management	6
IEEE Transaction on Engineering and Management	5
New Technology Work and Employment	5
International Journal of Environmental Research and Public Health	5
International Journal of Construction Management	4
Organization	4
Journal of Management Studies	4
Scandinavian Journal of Management	4

3.3. Research methodology and data

Of the 290 articles, the majority are empirical (245) and use quantitative methods (118), mainly cross-sectional survey data. Many empirical papers also use qualitative methods (100), including case studies, interviews, focus groups, secondary data, and observations. Only 25 publications use mixed methods, typically in the form of an online survey with follow-up interviews, and an experimental or quasi-experimental design is used in only one study each. A small number of empirical studies use other approaches, such as action research (two), network analysis (two), grounded theory (five), and ethnographic research (five). Finally, purely theoretical/conceptual contributions are limited to 44 articles.

3.4. Industry and geographical focus

Empirical research has been conducted in 44 countries, with most studies focusing on European countries and North America. Furthermore, of the 245 empirical papers based on primary data, 153 have a specific industry focus, and 70 use multi-industry samples.

3.5. Theories employed

Sociological and psychological theories (e.g., social exchange theory, social identity theory, occupational stress theory) are the predominant theories in our sample, followed by management and organization theories (see Table 2). Only 98 empirical articles explicitly draw on sociopsychological and management theories/models. With respect to individual theories and models, the job demands-resources (JD-R) model is the most frequently used theoretical framework for studying how workplace stressors affect employees' attitudes, behaviors, and well-being and for predicting the experience of burnout. This model provides an essential base for research on the negative aspects of project work, as job demand and job resources are considered critical elements for understanding the contemporary working conditions that cause occupational stress and consequently negatively affect employees' work performance, health, and well-being. For example, empirical work by Yang et al. (2017) draws on the JD-R model and finds that job stress significantly aggravates the level of job burnout and that the primary stressors are the stakeholder's relationship management and management systems. Accordingly, scholars have used the JD-R model to argue that performance and health outcomes often result from constant exposure to adverse project work-related factors such as high workloads, insufficient resources, and lack of support from managers/supervisors.

Leadership theories are also frequently used to study how leadership (e.g., leadership styles) influences employees' work outcomes and well-being. For example, empirical work by Ding et al. (2017) draws on two theoretical frameworks—leadership theory and social identity theory—and finds that transformational leadership is positively related to an employee's work engagement and negatively related to turnover intentions.

Career theories are also frequently employed to study project-based career choices, attitudes, trajectories, and challenges. For example, Lloyd-Walker et al. (2016) use social cognitive career theory to explore the reality of careers in project management (PM) and find that those who choose to pursue a career in PM have appropriate personal characteristics and sufficiently high levels of self-efficacy to cope effectively with the uncertainty inherent in projects and project-based employment.

Finally, organization and management theories are used to understand the potential influence of organizational mechanisms (e.g., citizenship behavior) on employees' work behaviors. For example, Lindgren and Packendorff (2006) combine project management theory with the management of gender systems theory to study how project work reproduces both masculine work practices (e.g., rationality, control) and feminine work practices (e.g., the rhetoric of the organizational context and expectations), although the tendency to reproduce masculine work practices is stronger.

Table 2. Most prevalent theories

Topic covered	Theory/Model	(Sample) Study
Organizational mechanisms	Theory of positional competitions, organizational support theory, exchange theory, organization theory, organizational role theory	Peticca-Harris et al., (2015); Borg & Soderlund, 2015; Braun et al., (2013); Ekman, (2015); Ekrot et al., (2018); Kabiri & Hughes, 2018; Saunders et al., (2016)
Gender inequalities	Social category theory, social role theory, gender role theory, role congruency theory, path-goal theory, Theoretical framework of inequality regimes, goal theory	Henderson et al., (2013); Olofsdotter & Randevag, (2016); Pinto, et al., (2015, 2017); Sieben et al., (2016)
Leadership style and competencies	Theory of leadership, Situational Leadership, Coaching leadership theory, transformational leadership, leader exchange theory, path-goal leadership styles, the great man theory	Berg & Karlsen, (2013); Ding et al., (2017); Famakin & Abisuga, (2016); Jiang, et al., (2017); Kerdngern & Thanitbenjasith, (2017); Leban & Zulauf, (2004); Muller & Turner, (2010)
Project-based careers	Social capital theory, Social cognitive career theory, boundaryless career theory, career development theory, protean career theory, traditional career theory, capital career theory, theory of career motivation	Akkermans, et al., (2019); Baugh & Roberts, (1994); Cha et al., (2009); Crawford et al., (2013); Lloyd-Walker et al., (2018); Lloyd-Walker et al., (2016); Skilton & Bravo, (2008); Welch & Welch, (2015)
Role problems	Organizational role theory, role theory, side bet theory of work commitment	Dube, (2014); Kabiri & Hughes, (2018); Wang & Armstrong, (2004)
Engagement	Role conflict theory, social identity theory, identity theory, job design theory, theories of culture	Dwivedula & Bredillet, (2010b); McKevitt et al., (2017); Robertson & Swan, (2003); Wang et al., (2017); Webber, (2011)
Workplace stressors	Stress theories, transactional stress theory, and the transaction stress model.	Ford, (2014); Ng et al., (2005); Raetze et al., (2018); Zika-Viktorsson et al., (2006)
Work-family conflicts	The role theory, the social exchange theory, the conservation resources Theory	Lingard & Francis, (2004); Wu et al., (2018); Xia et al., (2018); Zheng & Wu, (2018)
Stress Burnout Health issues	JD-C Model, JD-C-S Model, JD-R Model, occupational stress theory, boundary theory, psychometric theory	Andreassen et al., (2018); Bowen et al., (2013); Bowen et al., (2014); Bowen et al., (2018); Cattell et al., (2016); Chiocchio et al., (2010); Pinto et al., (2014); Singh et al., (2012); Turner & Lingard, (2016b); Yang et al., (2017)
Commitment	Social identity theory, role conflict theory, job design theory, theories of culture, site bet theory of work commitment, social exchange theory	Dwivedula & Bredillet, (2010b); McKevitt et al., (2017); Robertson & Swan, (2003); Wang et al., (2017); Wang & Armstrong, (2004); Webber, (2011)
Job performance	Goal-setting theory, inverted U theory, inverted U-shape model, job performance theories	Djebarni, (1996); Leung et al., (2008); Senaratne & Rasagopalasingam, (2017); Omorede et al., (2013)

Motivations	Motivational theories, self-determination theory, social learning theory, learning theories, human capital theories	Dwivedula & Bredillet, (2010a); Fisher, (2011); Holzle, (2010); Hu et al., (2012); Savelsbergh et al., (2016); Schmid & Adams, (2008); Shurrab et al., (2018)
Soft skills	Emotion theory, affective theory, theory of emotional Intelligence, emotional intelligence model, basic emotions theory	Clarke, (2010); Davis, (2011); Rezvani et al., (2016); Sunindijo et al., (2007)

In summary, existing research focuses on more practical rather than theoretical implications (Geraldi & Söderlund, 2018). Many studies lack a clearly pronounced theoretical contribution, and only a few organization and management theories are referenced.

4. Thematic findings

4.1. Environmental factors

Environmental factors include societal-level factors that affect an organization and its members, such as a country's culture, socioeconomic differences, legal and political systems, and formal (e.g., Ekstedt, 2019; Jalocha, 2019; Lundin, 2016) and informal institutions (Ghapanchi & Aurum, 2011). Societal-level factors play an important role in shaping organizational policies and procedures. Prior research examines projectification as the result of various types of mechanisms at the workplace that continuously challenge and transform a set of institutions (e.g., laws and mindsets) (Lundin, 2016). Factors external to the workplace (e.g., work-family conflicts) also influence project personnel's well-being (Liu & Low, 2011). Empirical research shows that project workers experiencing work-family conflict (WFC) are at greater risk of burnout (Singh et al., 2012). The national context, industry characteristics, formal institutions (e.g., employment regime), and family and friends [support or conflicts] are subcategories of environmental factors (see Table 3 for examples). As illustrated in Figure 2, environmental factors are studied as both determinants and moderators.

Walker and Lloyd-Walker (2019) point out that the proliferation of business and government project work is leading to more job and career opportunities for project professionals. However, success is linked to always being available, flexible, and

connected while sacrificing lifelong plans, stable conditions, and social predictability (Chiapello & Fairclough, 2002). Thus, projectification affects not only how people work in projects but also how they live their lives while working in projects (Lindgren & Packendorff, 2006).

4.2. Organizational factors

Organizational factors relate to the organizational context of projects that affect management practices (Maylor et al., 2006) and employees. Within this category, five interrelated sub-categories can be identified: (1) organizational structure and climate (e.g., complexities, ethical dilemmas), (2) organizational culture (e.g., parallel cultures), (3) contractual, remuneration and benefits, (4) human resources management (HRM) practices (e.g., staffing, appraisal systems), and (5) control mechanisms (e.g., discursive practices). Table 3 provides examples of the organizational factors and their implications.

The literature shows that organizational stressors affect projects and their members. There is empirical support for paradoxical tensions and practices (Gaim et al., 2019), increased organizational professionalization (Legault & Chasserio, 2012), competing organizational logics and resources constraints (Arvidsson, 2009), organizational dualities (Hodgson et al., 2011), bureaucracy and different views of decision-makers (Ng et al., 2005), job uncertainty (Rowlands & Handy, 2012), management systems (Yang et al., 2017), and organization structures and policies that do not consider employees' well-being (Senaratne & Rasagopalasingam, 2017; Naoum et al., 2018) as major contextual roots of psychological distress in project work. Therefore, organizational support is crucial for a project manager’s well-being and career path (Ekrot et al., 2018).

Empirical research also indicates that organizations extract long hours from employees through the process of neo-normative control, that is, by instilling in employees a profound sense of personal commitment to the goals and values of the organization and a sense of autonomy over their selves, careers, and lives (Ekman, 2015). However, project professionals often do not take advantage of the benefits of such high job autonomy (Osnowitz & Henson, 2016) and instead prioritize work over their health (Asquin et al., 2010).

Table 3. Illustration of multi-level determinants and implications

Environmental factors and implications	
National context	Projectification has influenced and transformed society into a project society (Lundin, 2016).
Industry characteristics	The construction industry is [at] high risk for [work-related] stress associated with excessive workloads, timed constraints, and deadlines (Leung et al., 2008).
Formal institutions	(…) institutions such as lawmakers of labor and education systems are supporting, regulating, and preparing for projectified work life (Ekstedt, 2019).
Family and friends' support/issues.	(…) non-work-related support was found to be more significant in alleviating psychological strain (Love & Edwards, 2005)
Organizational factors and implications	
Organizational structure and climate	A career-developing environment, poor organizational structure, and role dualities affect both psychological stress and performance (Naoum et al., 2018). Work environments produce emotions such as [anger] in attaining the desirable outcomes (Lindebaum & Fielden, 2011).
Organizational culture	Many problems of project management are due to the organizational culture rather than inherent in project work (Wearne, 2014).
Control mechanisms	Projectified organizations are using inexpensive behavior control systems based on the rhetoric of professionalization by promoting entrepreneurial-like commitment behaviors –self-discipline, self-directed, self-motivating, self-control, self-censorship, self-realization, and self-exploitation (Legault & Chasserio, 2012).
HRM practices	[Those] who are satisfied with their firm's HRM practices and job rewards also have higher job satisfaction (Ling et al., 2018).
Contract/ Remuneration and benefits	Short-term contracts increase the odd[s] of depression and anxiety (D' Souza et al., 2003).
Project factors and implications	
Job demand and resource issues	The lack of opportunities for recuperation, inadequate routines, limited time resources, and many simultaneous projects cause project overload, in turn, psychological stress reactions, decreased competence development, and deviations from the schedule (Zika-Viktorsson et al., 2006).
Role problems	Project workers experiencing role ambiguity [and] role conflicts (…) are at greater risk of burnout (Singh et al., 2012).
Project manager's leadership style	The project manager's behaviors and leadership styles can influence the turnover intention of the project workers (Kerdngern & Thanitbenjasith, 2017).
Teamwork issues	The most active stressor is workgroup cooperation (Naoum et al., 2018).
Project-(sub) culture	A project culture based on the acceptance of ambiguity [is] promoted by the development of highly committed and effective workers who can sustain multiple identities and flexible forms of project working overtime (Robertson & Swan, 2003).
Individual factors and implications	
Demographic characteristics	Project workforce tenure was found to increase job satisfaction and performance but also may increase job conflicts with supervisors (Baugh & Roberts, 1994).
Human capital	Human capital and social networks are critical for project-based career progress (DeFillippi & Arthur, 1998).
Career orientation	Those who continue with project-based roles value change, flexibility, variety and take responsibility for their own career progression (Lloyd-Walker et al., 2018).
Psychological [capital]	(…) resilience helps [to] reduce stress and cope with it (Berg and Karlsen, 2013).

Personality traits	Type A personality has a significant negative relationship with both psychological and physiological strain among project workers (Weiss, 1983).
Copying style	Project managers apply more active coping and planning strategies when dealing with stressful situations (Aitken & Crawford, 2007).
Motivations	Project managers are motivated by compensation, personal development, and empowerment (Shurrab et al., 2018).
Emotional states	Project workers tend to internalize negative emotions and externalized feelings of certainty and confidence (Lindgren et al., 2014).
Work-identities	Work identities are influenced by both the working conditions and normative beliefs of the ideal self and what they are capable of achieving (Styhre, 2012).
Perceived Job-related concerns	(…) physical and psychological risk problems [are] caused by job insecurity (Turner and Lingard, 2016a).
Psychological contract	Project workers experiencing psychological contract violation[s] are [at] a greater risk of job burnout (Singh et al., 2012).
Mindset	Paradoxical tensions require paradoxical mindsets (…), so project members do not fall to defensive responses (Gaim et al., 2019).

4.3. Project factors

Project factors include project-related aspects impacting project participants' work outcomes (Leung et al., 2008) and health (Darling & Whitty, 2020). Within project factors, seven interrelated determinants can be recognized: (1) job demand and job resource issues, (2) role problems, (3) teamwork issues (e.g., conflicts, turnovers), (4) project manager's leadership style and behavior, (5) project (sub)cultures (e.g., a culture of long hours), (6) past episodic events (e.g., project failure), and (7) work-home interference (e.g., constant connectivity). Table 3 illustrates the project factors and their implications. Within this category, job demand and job resource issues, the project manager's skills and competencies, leadership style, and behaviors are the most frequently studied, followed by occupational stress.

Research in this category emphasizes project stressors that affect project participants. Project management can be a complex political and social process (Hodgson & Cicmil, 2008). The review identified the following determinants of the negative aspects of project work: First, projects are carried out by human beings with potential conflicts of interest and difficult personalities (Clegg & Courpasson, 2004). Second, projects are driven by deadline and gate models, which can give rise to hypocrisy and malfunction in communication (Palm & Lindahl, 2015). In addition, leading people of different backgrounds (e.g., multidisciplinary professionals) is challenging (Matthews et al., 2018), and a poor

project leader and a perceived lack of appreciation are major factors encouraging turnover (Longenecker & Scazzero, 2003). Lastly, the project workforce can experience emotional dissonance, which is another source of stress (Rutner, 2008). Hence, project work can create conditions that are difficult to cope with, justify, and control, despite the grand promise of project management to deliver reasonable, rational, and controllable processes and outcomes (Cicmil et al., 2016). Project participants are exposed to frustrating processes and stress created by conflicts, overload, and unfavorable working conditions (Havermans et al., 2019).

4.4. Individual factors

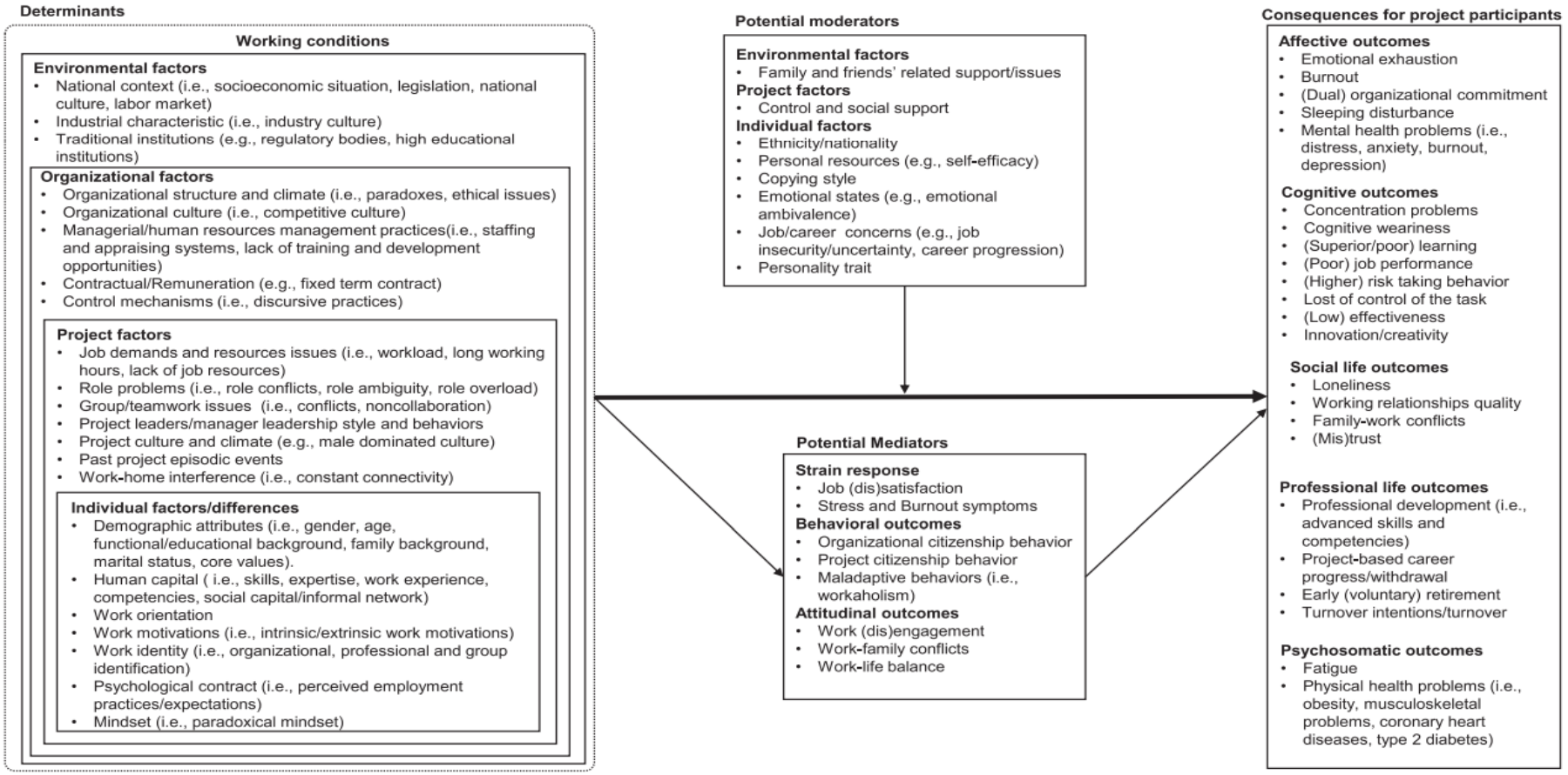
Individual factors concern individual attributes and psychological factors (e.g., emotional processes) that play a role in the development of job-related strain responses (e.g., job dissatisfaction) under the influence of high job demands (Demerouti & Bakker, 2011). Within the individual factors, twelve interrelated sub-categories can be recognized: (1) demographic characteristics, (2) human capital (e.g., competence), (3) career orientation, (4) personal resources (e.g., self-efficacy), (5) personality traits, (6) coping style (problem-focused, emotion-focused orientation), (7) motivations, (8) emotional states, (9) work identities (e.g., professional identification), (10) perceived job concerns (e.g., job insecurity), (11) mindset (e.g., paradoxical mindset), and (12) psychological contract (e.g., perceptions/expectations of employment practices). Table 3 outlines the individual factors identified in this study. The most frequently studied topics in this category are work motivation, gender differences/challenges, and coping strategies.

Research in this category explores individual factors and different combinations of personality traits, emotions, and perceptions of work and organization processes that cause people to react differently to stressors (e.g., El Baroudi et al., 2019). For example, justice perceptions affect the emotional states and behavioral responses of project workers, such as venting and engagement (Chaudhry et al., 2020) and project citizenship behaviors (Lim & Loosemore, 2017). Empirical evidence shows that age and level of education influence the way people cope with stress (Haynes & Love, 2004), and lack of competence or mismatch of competence may contribute to project overload (Gustavsson, 2016) and psychological distress (Turner & Lingard, 2016a, b).

5. A multi-factor and multi-level model of the negative aspects of project work

The proposed framework integrates the principal dimensions and respective sub-categories in a model that captures the identified determinants of the negative aspects of project work and their consequences for individuals (see Figure 2). In contrast to consequences, where the focus has been on the individual level, literature has identified determinants of negative aspects at different levels. Accordingly, the proposed framework includes several interconnected levels as determinants: macro (environmental/societal/country/industry), meso (organization and project), and micro (individuals). Additionally, the framework highlights potential mediators and moderators that may influence the relationships between the negative aspects of project work and individual outcomes. The framework and the following discussion provide an answer to the first research question of this paper.

Figure 2. Model of the negative aspects of project work and its consequences



5.1. Macro level

Environmental factors, which consist of macro-level factors such as socioeconomic, political, institutional, and cultural context, influence all other factors at all levels. As Ekstedt (2019, p. 275) points out, core institutions regulate, prepare, and support the diffusion of the "projectified" work life. The projectified work life includes the precarization of work (e.g., looser forms of employment contracts/financial insecurity) and segregation of labor (Cicmil et al., 2016; Ekstedt, 2019; Herschberg et al., 2018; Osnowitz & Henson, 2016; Simini & Sydow, 2021).

5.2. Meso level

At the meso level, organizational contextual factors affect the project and its members. For example, matrix organizations force employees to navigate between functional units and projects and expect high performance in both (Dube, 2014). In these dynamic and complex organizational environments, changes in the project due to uncertainty may occur, internal politics (e.g., hidden agendas, biased plans) may emerge, and project participants' motivation levels and efficiency may decline (Geraldi et al., 2011). These dynamics can be further complicated by constant changes, unrealistic deadlines, and intense pressures (Turner et al., 2008). Additionally, employees may encounter ethical issues such as gender inequalities (Olofsdotter & Rasmusson, 2016; Greer & Carden, 2021) and dishonesty (Kvalnes, 2014). The governance structure influences the way employees encounter and respond to such ethical issues (Müller et al., 2014). Adverse situations, e.g., miscommunication, negatively affect project participants' engagement (Mysore et al., 2021) and employee productivity (Van Tam et al., 2021). Moreover, an *"ideal project-oriented company has a specific management culture expressed in the empowerment of employees, process orientation and teamwork, continuous and discontinuous organization change, customer orientation, and networking with clients and suppliers"* (Huemann et al., 2007, p. 317). In this high-pressure work environment, project managers are often forced to "do more with less"; as a result, project managers engage in either high-performance or abusive supervision behaviors (Gallagher et al., 2015, p. 10). Abusive supervision behavior negatively affects employee well-being and triggers employee turnover (Gallagher et al., 2015). Furthermore, project-based organizing

and the normalization of temporary work create new employment relationships and changes in the design of human resources management (HRM) processes and voice behaviors (Bredin & Söderlund, 2011; Prouska & Kapsali, 2021). In project-based organizations (PBOs), HRM practices are the domain of the project manager rather than either line managers or the HRM department (Keegan et al., 2012).

At the project level, job demands, job resources, teamwork issues, the project manager's leadership style, and project culture are aspects of project work that can become stressors depending on individual attributes, personal resources (e.g., self-efficacy), and context. Moreover, projects can be rife with complex and paradoxical demands due to the need for both efficiency and flexibility to navigate a complex and evolving environment (Havermans et al., 2019). Even in the presence of high professionalism, it can be difficult for project managers to accomplish what is planned, as they must frequently deal with unrealistic deadlines, resource constraints, and, sometimes, a lack of stakeholder engagement (Ballesteros-Sanchez et al., 2019).

An excessive workload is partially due to parallel activities that demand extensive prioritization (Hovmark & Nordqvist, 1996; Panojan et al., 2019) in addition to poor planning, inadequate allocation of resources (Celkevicius & Russo, 2018), insufficient workforce, loss of control, lack of feedback (Pinto et al., 2014), and constant transitions from project to project, which requires social interactions with various project participants (Patanakul et al., 2016). Such situations create project overload, which is associated with stress reactions, poor job performance, and illness (Weiss, 1983; Zika-Viktorsson et al., 2006; Bråthen et al., 2021). Furthermore, project workers are often expected to deliver the impossible regardless of the consequences for life in general (Lindgren & Packendorff, 2006). Hence, project work exposes individuals to risks of excessive involvement and commitment, destabilization of professional identities, and precarization of project careers (Asquin et al., 2010).

The leadership style and behaviors of project managers can also negatively influence the work-related outcomes of subordinates. For example, project managers can impose multiple pressures on their team members, resulting in high levels of stress and ill-being (Bouwmeester & Kok, 2018), and can emotionally manipulate the environment to their own advantage (Whitty, 2010). Furthermore,

project culture can be used by managers to trigger employees' citizenship behaviors, which in turn drive success (Aronson & Lechler, 2009). However, in settings with a culture of long working hours, the demand for citizenship behavior causes job burnout (Wu et al., 2018; Yip & Rowlinson, 2009) and work-family conflicts (Xia et al., 2018), which can lead to depression and sleep problems (Zhang & Bowen, 2021). These negative consequences highlight the importance of appropriate job design (manageable workloads) and manager behaviors as well as a safe psychological workplace culture to ensure sustainable and responsible treatment of employees.

5.3. Micro level

At the micro level, research has looked at individual differences, such as demographic differences, skills and competencies, personal resources, and coping orientation, that affect the way project personnel handle and cope with the adverse impact of project stressors (e.g., Bowen et al., 2021; Haney & Love, 2004; Gustavsson, 2016; Henderson et al., 2013; Panojan et al., 2019). Women, for example, tend to experience greater emotional exhaustion than their male counterparts (Pinto et al., 2014). Moreover, personal attributes shape the way in which knowledge and skills are applied to a situation, the way team members respond to group collaboration (Walker & Lloyd-Walker, 2019), and job burnout symptoms (Sun et al., 2020). Motivation factors (e.g., rewards, work satisfaction) affect project workforce productivity (Van Tam et al., 2021).

People who choose a project career are usually highly committed and willing to self-sacrifice; they voluntarily engage in project work on a regular basis because they cannot imagine doing or daring to do something else (Cicmil et al., 2016). Regardless, all project participants are vulnerable to stressful working conditions, which can impair work-related outcomes, health, and well-being in the long run.

5.4. Adverse effects on project workers

The review revealed a variety of negative effects on people who work in projects, especially project managers (Jugdev et al., 2018), women (Olofsdotter and Rasmusson, 2016), and junior project workers (Bouwmeester & Kok, 2018). The individual outcomes are classified into seven categories in Figure 2: behavior,

attitudinal, affective, cognitive, social life, professional life, and psychosomatic outcomes. Stress, for example, is a recurring factor. Stressful working conditions can affect project personnel's motivations (Gällstedt, 2003; Van Tam et al., 2021), job satisfaction, performance, and work-life balance (De Silva et al., 2017; Panojan et al., 2019; Pirzadeh & Lingard, 2021) and, over time, turn into chronic stress, increasing the risk of poor mental health and chronic illnesses (e.g., Darling & Whitty, 2020). Other individual outcomes are loneliness, disrupted family lives, and superficial workplace relations (Lindgren & Packendorff, 2007). Projects can be "mental prisons" that often stimulate and cause stress, work-life conflicts, and social isolation (Cicmil et al., 2016; Lindgren & Packendorff, 2006). The ramifications of stress are also evident in poor competence development, schedule deviations (Zika-Viktorsson et al., 2006), loss of control over tasks (An et al., 2019), substance abuse (Bowen et al., 2013), and mental health problems (e.g., burnout) (Sun et al., 2020; Zhang & Bowen, 2021).

5.5. Potential mediators

Multiple mediating variables that influence the relationship between project work and employee well-being have been reported. For example, workaholism mediates the relationship between work-related stressors and health outcomes (Andreassen et al., 2018). Organizational citizenship behavior (OCB) mediates the relationship between the project manager's leadership style and job performance (Jiang et al., 2017). Moreover, employees' work-life conflicts mediate the relationship between organizational aspects and organizational commitment (Spanuth & Wald, 2017). Job burnout/engagement may mediate the relationships among organizational- and project-related stressors, individual differences, and turnover/retention (Jugdev et al., 2018). Lastly, work-life balance mediates the effects of work hours, work pressure, work engagement, and work-life interference on psychological well-being (Pirzadeh & Lingard, 2021).

5.6. Potential multi-level moderators

At the macro level, national culture influences the way employees understand and perceive values such as honesty and the need for trust (Padhi & Mishra, 2017) and how they handle conflicts, perceive quality, meet deadlines, and interpret the behavior of others (van Marrewijk, 2010). The review also revealed that social

support from family and friends alleviates psychological stress (Love & Edwards, 2005) and reduces work/family conflicts (Zheng & Wu, 2018). At the firm level, parallel cultures may lead to frustration and greater uncertainty (Ekstedt, 2019). Furthermore, a workplace culture of long hours (Lingard et al., 2012) and competition (Bowen et al., 2014) can promote greater work intensification, leading individuals to overwork not only to prove their worth but to sustain employability (Osnowitz & Henson, 2016). At the project level, control and social support serve as moderators of burnout dimensions (Pinto et al., 2014). At the individual level, psychological factors such as concerns about job security impact employees' health behaviors (Turner & Lingard, 2016a). Furthermore, career calling can positively moderate the effects of role conflict and burnout (Wu et al., 2019). Coping strategies such as problem-solving significantly moderate the relationships between role overload and all three dimensions of burnout, while work-related social support is a significant moderator of only the relationship between role overload and emotional exhaustion (Yip et al., 2008; Bowen et al., 2021). Finally, personal resources (e.g., emotional intelligence) moderate the choice between high-performance work practices and abusive supervision behaviors (Gallagher et al., 2015). In a recent study, Zheng et al. (2021) found that emotional intelligence moderates the effects of work interference with family on emotional exhaustion.

5.7. Connecting theory to the model

Most empirical studies of the negative aspects of project work draw on theories from several disciplines in social science and psychology. Project participants can be negatively affected by external (macro level) and internal organizational (meso level) factors. For instance, the neo-institutional theory is used to explain the external environmental, legal, and political logics that trigger projectification and subsequent changes in the organization, e.g., in operations and professional practices (Jalocha, 2019). Thus, the projectification process can create paradoxical tensions for the HRM function (Keegan et al., 2018). A combination of paradox theory with the Ulrich-style three-legged model is used to study employees' responses to paradoxical tensions (Keegan et al., 2018). Paradoxical tensions do not operate in isolation but are linked to the people and the organization (Keegan et al., 2018). To accommodate paradoxical tensions, organizational structures, leadership styles, roles, employment relationships, mindsets, and careers also change (e.g., Gaim, 2019; Arvidsson, 2009; Prouska & Kapsali, 2020; Mysore et

al., 2021). Thus, the complex, dynamic, and ambivalent organization mechanisms (e.g., ambiguous HRM systems) and human behaviors are a source of job strain, which can affect employees' work performance, health, and well-being.

Other organization and management theories are used to explore the impact of projectification on individuals at the meso level. For example, the theoretical framework of inequality regimes is used to investigate how temporary contracts, masculinity work culture, recruitment, and promotion systems in PBOs produce poor working conditions and division of labor (Olofsdotter & Rasmusson, 2016). Packendorff and Lindgren (2014) use structural organization theory, contingency theory, and critical management theory to study the reasons for projectification despite its problematic consequences for individuals. Problematic consequences of projectification may be indelible features of neo-liberal work systems (Ekman, 2013; Cicmil et al., 2016; Berglund et al., 2020).

Peticca-Harris et al. (2015) apply the theory of positional competition to explain how employees are caught in a competitive "rat race" in which they strive for organizational advancement and material success by working long hours. The authors argue that this theory is not sufficient to fully understand how the precarious nature of project work is masked by the power of neo-normative control and responsibilization mechanisms (Peticca-Harris et al., 2015). Negative consequences for project workers are also investigated using occupational health theories (e.g., demand-control model, JD-R model; Pinto et al., 2016; Bowen et al., 2018; Xia et al., 2018). These theories are imported from various disciplines to explore the psychodynamics of project work (e.g., motivation, commitment, personality traits). For instance, social cognitive theory is used to assess the influence of psychosocial functioning on project managers' job performance (Blomquist et al., 2016). Role theory combined with social exchange theory serves as a theoretical foundation to study role overload, professional commitment, and work-life conflicts (Zheng & Wu, 2018). Likewise, Hanes and Love (2004) apply the cognitive theory of stress and coping to study the psychological flexibility of project workers. Studies on emotions draw on the emotional intelligence framework and attribution theory (Sunindijo et al., 2007; Shepherd et al., 2014). Lastly, the Big Five personality model is combined with the person-organization theory to analyze project managers' personalities (Cohen et al., 2013).

In summary, this section answers the second research question: various theories from different disciplines are used to study the determinants of the negative aspects of project work at the three levels of the model (see Figure 2) and their consequences for individual project workers. There is no dominant (meta-)theory; rather, the choice of theory seems to depend on the specific research problem, and theories are also used in combination.

6. Conclusion

Research on the negative consequences of project work is increasing, but the multi-disciplinary nature corresponds to a dispersion of research findings, which may be detrimental to the accumulation of knowledge. To consolidate the current body of knowledge, this paper presented a comprehensive systematic literature review and integrated the different determinants of the negative aspects of project work and their consequences for individuals in a multi-level model.

6.1. Implications for research and practice

The model presented in Figure 2 and the findings of this review provide a foundation for theory development. Theory can be developed not only at each level of the determinants of the negative aspects of project work but also at multiple levels, including their potential interactions.

Furthermore, the model can guide empirical research in choosing the relevant levels of analysis of determinants and, depending on this choice, the appropriate theory. The model and the findings regarding the use of theory can also be helpful for combining the macro, meso, and micro levels of theorizing and empirical research and for integrating theories. For instance, combining institutional theory with conservation of resources theory can help explain the internal and external institutional pressures that force firms to behave in a certain way, the role of the organization in determining the resources available for project participants, and how the lack of such resources may affect individual outcomes.

The results of the present study can also inform practitioners about the most prevalent determinants of the negative aspects of project work. This can facilitate the creation of work environments that mitigate the negative consequences for

individual project workers. In particular, the model presented in Figure 2 allows efforts to be focused on the determinants at each level that may be relevant in the specific organization. Regarding individual factors, the selection of project personnel can be facilitated to obtain a high degree of fit between individual attributes and the work characteristics of the project environment (Goetz et al., 2021). The factors identified at the project level can help project managers create a positive project work environment. Organizational factors are mostly relevant for managers in the permanent organization and managers at the interface of the permanent organization and the temporary (project) organization (e.g., the project management office). Finally, environmental factors are relevant for policy makers; since projectification is increasing in all sectors of the economy (Schoper et al., 2018), reducing the negative aspects of project work may not only improve individuals' well-being but also translate into better economic performance.

6.2. Emerging topics and future research agenda

First, this study calls for a better theoretical foundation for research on the negative aspects of project work. One important topic warranting further examination is the applicability of sociological and psychological theories to project stressors and their impact on project participants' health and well-being (Pinto et al., 2014; Bowen et al., 2018). Empirical research on novel working conditions and their impact on employees' health is particularly scarce (Raetze et al., 2018). Future research should also explore how work-related contact affects the experience of workplace stress, productivity, and workaholism (Bowen et al., 2018).

Another emerging topic is "personal projectification," which encompasses a project worker's identities, mindsets, skills and competencies, social capital (Berglund et al., 2020), and the psychological factors that influence the response to the negative aspects of project work (e.g., Yip et al., 2008; Pinto et al., 2016). The consequences of project-based fragmentation of careers and lives (Berglund et al., 2020) and the influence of personal traits on the relationship between project stressors and work-related outcomes (An et al., 2019; Lawani & Moore, 2021) merit further research.

This study also calls for research on paradoxical practices and hybridity in PBOs and their impact on employees' well-being and performance (e.g., Gaim et al.,

2019). Further research should address the co-evolution of paradoxes and responses in terms of employees' well-being versus work performance (Keegan et al., 2018) and how HR specialists can embrace the contextual development of PBOs and the increased complexity of actors involved in hybrid HRM processes (Keegan & De Hartog, 2019). Empirical research should also explore the influence of governance systems and organizational climate on project workers' voice behaviors (Prouska & Kapsali, 2021).

Finally, this review encourages advances in research design by advocating the use of ethnography, mixed methods, action research, multi-level modeling, and longitudinal approaches, which have rarely been applied to this topic, to provide greater breadth and depth of knowledge on the negative aspects of project work.

6.3. Limitations

This study has several limitations. The first limitation is the selection criteria, as the search strategy was limited to the specific terms used as keywords and to three academic databases. Relevant contributions may have been filtered out or overlooked because they did not include the search terms in their text. Likewise, the search only included research published in peer-reviewed journals. Given the practical nature of project management, publications in practitioner journals or publications by professional project management associations may also provide essential insights into the determinants of negative aspects of project work and their consequences for individuals. Finally, the review was limited to negative aspects of project work and their implications for individual project participants. The positive aspects of project work may outweigh some of its negative aspects.

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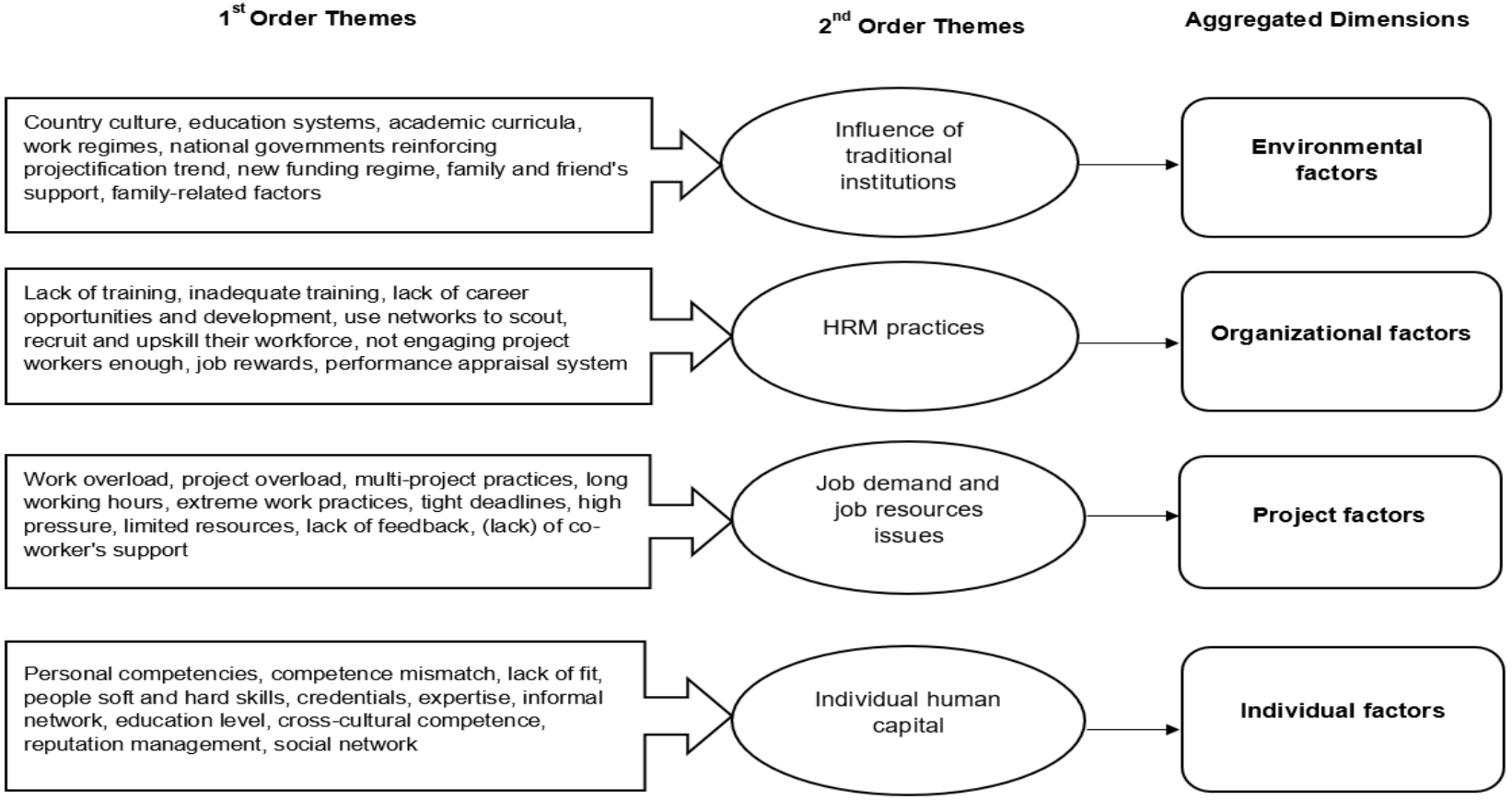
Appendix 1A. Data extraction form

Initial Code	Definition of the code
Author	List of authors
Year	Year of publication
Journal	Publication in which the article was published
Geographical jurisdiction	The country from which the data was collected
Theory or Model	The theoretical framework used in the paper
Sample	Sample size and participants
Research questions	Research questions explicitly stated in the article.
Aim of the paper	The main objective of the paper
Methodology used	Qualitative, quantitative, mixed methods, and others.
Data source	Survey, interview, secondary data, others
Determinants mentioned in the study	Negative aspects of project work
Outcome variables in the study	Consequences for project participants
Dependent variable	Dependent variable(s) used in the study
Independent variable	Independent variable(s) used in the study
Mediator variable	Mediator variable(s) used in the study
Moderator variable	Moderator variable(s) used in the study
Findings	Significant findings are explicitly stated in the research paper.

Appendix 1B. Illustration of the data structure and coding



Chapter 3. Mitigating the Negative Aspects of Project Work: The Roles of Psychological Capital and Coworker and Family Support[2]

Abstract

Purpose – Research on mitigating the negative effects of project work on project workers is scarce. This study analyzes the roles of psychological capital as an individual factor and coworker and family support as environmental factors in reducing the negative effects of project work.

Design/methodology/approach – Building on the job demands-resources model and conservation of resources theory, the influence of these factors on the relationships between subjective stress, job burnout, and individual job performance is examined. The research model is empirically tested using data from a sample of 304 project workers.

Findings – The results show that coworker and family support are positively associated with psychological capital. Additionally, psychological capital mediates the effects of social resources on subjective stress, which can lead to job burnout and poor work performance. Thus, coworker and family support and psychological capital can mitigate stress, job burnout, and their negative consequences.

Originality/value – This study contributes to project management literature by addressing the need for further research on the environmental and individual factors influencing job burnout and its detrimental effects on project workers. It provides insights into how psychological capital and support from work and family domains affect the relationship between subjective stress, job burnout, and job performance, opening avenues for further research.

Keywords: Project Workers, Social Support, Family Support, Stress, Burnout, Psychological Capital, Job Performance

[2]This article is co-authored with Andreas Wald.

1. Introduction

Projects and project management are essential means of structuring and managing work in challenging environments (Lundin, 2016). However, for project workers, projectification poses potential threats to job security, performance (Cicmil et al., 2016), and physical and mental health (Darling & Whitty, 2020). Work-related health problems, including psychological distress and burnout syndrome, affect not only the project workers themselves but also productivity and collaborative dynamics within workgroups (Naoum et al., 2018). Further repercussions include increased turnover rates, prolonged sick leave, presenteeism, medical interventions, and, in some cases, premature voluntary retirement (Cicmil et al., 2016).

Across economic sectors, technological advances, demographic changes, workforce diversification, mergers, downsizing, and organizational restructuring are heightening stress levels in work environments (Karlsen & Berg, 2020; Lechler & Huemann, 2024; Sumbal et al., 2021; Walker & Lloyd-Walker, 2019). Extensive research in psychology, occupational health, organizational behavior, organizational psychology, and management has shown that workplace stress adversely impacts employee health, well-being, and job performance (De Jonge & Schaufeli, 1998; Leung et al., 2011; Love & Edwards, 2005; Pinto et al., 2014; Senaratne & Rasagopalasingam, 2017; Xanthopoulou et al., 2012; Yang et al., 2017). The complex global environment in which today's project-oriented organizations are embedded provides a steady stream of adverse events and potential stressors that may negatively affect worker well-being (Tijani et al., 2021). Thus, it is crucial to investigate ways to mitigate the adverse effects of projectification on the well-being and performance of project workers.

Compared with the abundant literature on work stress and its detrimental implications for employees in permanent organizations (POs), considerably less attention has been paid to project workers (Ayalp, 2022), and gaps remain in the project management literature (An et al., 2019; Jugdev et al., 2018; Pinto et al., 2016; Yang et al., 2017). Although POs and temporary organizations (TOs) share some commonalities, these organizational forms differ in key ways that may influence specific determinants of work stress and its adverse effects (Packendorff, 1995). TOs are, by definition, temporary and transitory and are characterized by

higher risk, greater unpredictability and instability, fewer routine tasks, greater reliance on temporary team-based arrangements, and greater engagement of employees from diverse disciplinary backgrounds with more autonomy than their PO counterparts (Hanisch & Wald, 2014; Hobday, 2000).

Even exceptionally skilled project workers with high degrees of autonomy can experience stress and work intensification due to challenges such as project overload, role conflicts, leadership style issues, workgroup conflicts, resource constraints, and project culture (Berg & Karlsen, 2007; Delisle, 2020; Zika-Viktorsson et al., 2006). Moreover, some project workers are employed in different organizations or departments while simultaneously performing their project roles (Lingard & Turner, 2023), which can increase stress and negatively affect their resources (e.g., reputation), mental well-being, and performance (Cicmil et al., 2016).

Project work is a "double-edged sword" (Lingard & Turner, 2023, p. 11). Project work can be satisfying, meaningful, and exciting for project workers, who must continuously learn, adapt, and find solutions to problems while collaborating with their fellow project members. However, project work can also be highly demanding and stressful (Gällstedt, 2003). Project workers are expected to do more with less (Gallagher et al., 2015) and experience work pressures brought by uncertainty, complexity, and temporality (Wu et al., 2019). In addition, they must interact with multiple stakeholders and deal with dysfunctional conflicts, personality clashes, and weak managerial support (Mysore et al., 2021). As a result, many project workers experience significant levels of work stress, which can lead to job burnout (Leung et al., 2011; Senaratne & Rasagopalasingam, 2017; Aguilar Velasco & Wald, 2022).

Occupational stress (or work stress) is a complex biopsychosocial reaction arising from challenging or unfavorable situations within work environments (Wang et al., 2017). Work stress is not necessarily harmful (Leung et al., 2008), especially if resource levels are adequate (Hobfoll, 2002; Bakker et al., 2004; Leung et al., 2008). However, an individual's subjective interpretation of project-related stressors can lead to high levels of work-related stress (Leung et al., 2009). Job burnout is a psychological syndrome generally described as a long-term response to unmanageable work stress that manifests as overwhelming emotional

exhaustion, cynicism, and a low sense of personal accomplishment (Leiter & Maslach, 2016). Many stress theories, including the influential demand-control-support (DC-S) model (Johnson & Hall, 1988), job demands-resources (JD-R) model (Demerouti et al., 2001), and conservation of resources (COR) theory (Hobfoll, 1989), posit that resource availability can mitigate negative stress and its detrimental consequences (e.g., job burnout). The JD-R model is more flexible than the DC-S model because it does not restrict the set of job resources that can mitigate job burnout (Schaufeli & Bakker, 2004). According to COR theory, resources that enable individuals to achieve goals and protect their well-being can be external (such as cultural factors) or internal (inherent to the individual) (Hobfoll, 1989). The JD-R model and COR theory suggest that some of the most valuable resources are support from social networks (external) and resilience (internal) (Demerouti et al., 2001; Hobfoll, 2002). The instrumental (or material) and/or social (or emotional) support that an individual receives from work and family (House, 1983) influences job burnout (Sun et al., 2020; Pinto et al., 2014) and psychological capital (PsyCap) (Todt et al., 2018).

PsyCap is *"an individual's positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success"* (Luthans et al., 2007, p. 3). We focus on PsyCap because PsyCap is a critical cognitive resource for coping with job stressors and predicting organizational outcomes (Avey et al., 2009) and has been examined holistically at the micro level in the project context (e.g., Todt et al., 2018; Xia et al., 2022). Some studies have explored the impacts of single components of PsyCap, such as hope (Chak et al., 2022), optimism (Dolfi & Andrews, 2007), self-efficacy (Jani, 2011; Novieto & Kportufe, 2022), or resilience (Khan et al., 2022; Mubarak et al., 2022), on project outcomes. However, no research has examined the mediating effect of PsyCap on the relationships between perceived support, stress, burnout, and individual performance in the project context. Therefore, this study examines the systematic influence of social support, psychological capital, and occupational stress on job burnout and performance.

Despite the significance of environmental and personal factors in mitigating the negative aspects of project work (Gällstedt, 2003), research has yet to examine the influence of individual factors (e.g., PsyCap) on job burnout and its negative consequences for project workers (An et al., 2019; Pinto et al., 2016). In addition, research on environmental factors (e.g., social support) could provide a more in-depth understanding of the mechanisms leading to job burnout (Yang et al., 2017) and how job burnout can be mitigated (Sun et al., 2020). Accordingly, we seek to answer the following questions: (1) What are the environmental and individual factors that may help project workers avoid, prevent, or reduce job burnout? (2) How do these factors influence the relationships between subjective stress, job burnout, and job performance in project workers?

Our work makes several contributions to the project management literature. First, we use the JD-R model (Bakker et al., 2004; Demerouti et al., 2001) and COR theory (Hobfoll, 1989, 2011) to empirically identify the environmental and individual factors that help project workers mitigate job burnout and its detrimental consequences and how personal factors, i.e., family support, workplace support, and PsyCap, affect the relationships between subjective stress, job burnout, and job performance. In doing so, we address the call for research on the socio-psychological factors and mechanisms that influence job burnout (Yang et al., 2017; Pinto et al., 2016) and, consequently, work performance among project workers (An et al., 2019). This leads to the second contribution of this study: enriching theoretical knowledge of how to mitigate job burnout and its detrimental outcomes caused by the negative aspects of project work. Third, we contribute to the extended JD-R model (Demerouti & Bakker, 2022) by providing evidence of the key role of family support in project workers' personal resources and, in turn, their responses to environmental stressors. Fourth, by applying the PsyCap concept to the project context, we enrich the project management literature with new insights into the positive personal psychological resources that can help prevent or reduce job burnout and represent powerful advantages for both project workers and organizations. Finally, this paper has practical implications for managers, as it documents the critical roles of both environmental and personal resources in counteracting the negative consequences of job burnout in the project context. This is important because it demonstrates that the quality, availability, and level of both environmental and personal resources influence project workers' vulnerability to

job burnout and can be strengthened and developed through organizational interventions.

In the following sections, the theoretical background and hypotheses of this paper are introduced. Next, we describe our sample, data collection, and measurement approach. We then explain the data analysis and present and discuss the findings. Finally, we conclude with theoretical and practical implications, limitations, and directions for further research.

2. Theoretical background and hypothesis development

2.1. Theoretical background

We draw upon the JD-R model (Demerouti et al., 2001; Bakker et al., 2004) and COR theory (Hobfoll, 1989, 2011), as both propose that resources can mitigate job burnout. The JD-R model is useful for explaining how project-related demands (or stressors) are likely to result in burnout and undesired work and individual outcomes (Gallagher et al., 2015). However, the traditional JD-R model assumes that burnout is a joint effect of job demands and job resources (Demerouti et al., 2001). By contrast, COR theory suggests that this joint effect is simply additive (Halbesleben et al., 2014) and focuses on the notion that burnout arises when individuals experience high job demands and/or have inadequate resources to address and mitigate these demands (Hobfoll, 1989). Hence, COR theory (Hobfoll, 1989) complements the JD-R model in explaining how psychological mechanisms lead to job stress and burnout (Halbesleben et al., 2014). Together, the two theories provide essential links in our hypothesized model of socio-psychological resources that may help mitigate job burnout and affect the relationships between subjective stress, job burnout, and job performance in the project context. Figure 1 shows our conceptual model.

2.2. Environmental and individual factors

2.2.1 Impact of perceived workplace support on psychological capital

Resources that enable employees to achieve goals and protect their well-being can be internal (or personal), i.e., inherent to the individual, such as PsyCap, energy,

time, and attention, or external (or contextual), i.e., emanating from the environment (e.g., money, social support, working conditions) (Hobfoll, 1989). Previous research has found that job-related factors such as weak or absent workplace support are often more strongly related to burnout than personal factors (Maslach et al., 2001). Workplace support refers to employees' perceptions of whether they can rely on the instrumental (e.g., advice on performing tasks) and social support (e.g., opportunities for emotional expression) of other project members (Bowen et al., 2014). In the project context, workplace support has been shown to buffer the negative stress and burnout experienced by project workers (Bowen et al., 2014; Pinto et al., 2014) and boost their PsyCap (Todt et al., 2018). COR theory suggests that organizational resources (e.g., supervisors' support) can help employees obtain other resources (e.g., resilience) that allow them to adequately cope with the negative aspects of their work (Hobfoll, 2002, 2011). When employees perceive that organizational resources are adequate, they gain a sense of stability and security, which reduces harmful stress levels (Halbesleben et al., 2014). Conversely, the perceived absence or inadequacy of workplace support in a challenging work environment leads to a loss spiral of resources (Hobfoll, 2002). Thus, the following hypotheses are outlined:

Hypothesis 1a: Perceived workplace support is positively related to PsyCap levels among project workers.
Hypothesis 1b: Perceived workplace support is negatively related to subjective stress levels among project workers.
Hypothesis 1c: Perceived workplace support is negatively related to job burnout levels among project workers.

2.2.2. Impact of perceived family support on psychological capital

Family social support that promotes positive emotions and a sense of worth is particularly effective in buffering the detrimental consequences of work-related stress (Cohen & Wills, 1985; Love et al., 2010). Family support is the perceived tangible and social/emotional support from family members and significant others (House, 1983). According to COR theory, family support can help individuals when they encounter stressors inherent in the organizational context (Hobfoll, 2011) by fostering motivation and satisfaction in both the work and family domains (Halbesleben et al., 2014). Moreover, family emotional support enhances

essential personal resources such as self-efficacy, optimism (Kwok et al., 2015), and resilience (Cohen & Wills, 1995). Thus, perceived workplace and family support may be crucial environmental factors that can help prevent or reduce subjective stress and job burnout by enhancing project workers' PsyCap. Accordingly, the following hypotheses are proposed:

Hypothesis 2a: Perceived family support is positively related to PsyCap.
Hypothesis 2b: Perceived family support is negatively related to subjective stress.
Hypothesis 2c: Perceived family support is negatively related to job burnout.

2.3. PsyCap, subjective stress, job burnout, and job performance

2.3.1. PsyCap and its influence

PsyCap is a higher-order construct with interrelated dimensions encompassing four first-order positive psychological resources: (i) self-efficacy, (ii) hope, (iii) optimism, and (iv) resilience (Luthans et al., 2007). Self-efficacy is the "belief in one's capacity to mobilize the motivation, cognitive resources, and course of actions needed to meet given situational demands" (Bandura, 1989, p. 408). Hope is the drive to persevere and find a way to overcome obstacles and challenges to achieve goals successfully and strategically (Snyder et al., 1996). As a component of PsyCap, optimism is realistic optimism (Luthans et al., 2007), i.e., optimistic leniency toward the past, appreciation for the present, and recognition of future opportunities (Schneider, 2001). Resilience is the developable capacity to rebound from adversity, conflict, failure, and increased responsibility (Luthans et al., 2006). An important reason for choosing PsyCap over other psychological factors is its state-like nature, which makes it more open to development and change than a fixed trait (Luthans et al., 2007). Moreover, PsyCap is a better predictor of organizational outcomes than any of the four first-order constructs (Luthans et al., 2007) because it acts as "a solid resources reservoir" (Hobfoll, 2002, p. 318) that incorporates psychological mechanisms from each of its first-order constructs (Luthans et al., 2017). The positive cognition and motivation effects of PsyCap have unique effects on various individual and organizational outcomes because the proactive property of psychological resilience allows individuals to go beyond simple reactive adaptations or perseverance in response to adversity (Luthans et al., 2007). COR theory posits that different psychological resources can support or

replace each other. This linkage and interplay are called “resource caravans” (Hobfoll, 2011, p. 349), and PsyCap is consistent with the notion of resource caravans of positive cognitive resources that travel together and interact synergistically to produce different manifestations over time and across contexts (Luthans et al., 2007).

PsyCap directly influences job performance (Luthans et al., 2007, 2008) and is negatively associated with job stress (Abbas & Raja, 2015) and job burnout (Nguyen & Ngo, 2021). According to COR theory, the gain spiral effect of crucial resources such as PsyCap guarantees continuously increasing resources; thus, employees with higher PsyCap levels can gain sufficient resources to recover effectively from stress (Hobfoll, 2011). Project research has determined that hope (Chak et al., 2022), optimism (Dolfi & Andrews, 2007), and resilience (Mubarak et al., 2022; Todt et al., 2018) are vital individual capabilities that help project workers overcome project-related stressors. In addition, self-efficacy has been identified as a crucial individual characteristic that significantly influences job performance (Novieto & Kportufe, 2022), job burnout (Sun et al., 2020), and project commitment (Jani, 2011). Thus, PsyCap could act as a protective psychological resource that helps prevent or reduce job burnout and its detrimental consequences among project workers. In line with this, the following hypotheses are presented:

Hypothesis 3a: PsyCap is positively related to job performance in project work.
Hypothesis 3b: PsyCap is negatively related to subjective stress in the project work context.
Hypothesis 3c: PsyCap is negatively related to project worker job burnout in the project work context.

2.3.2. Mediating effects of psychological capital

PsyCap mediates the relationship between workplace support and project commitment among professionals in innovation projects (Todt et al., 2018). The JD-R model proposes that this mediation occurs because project workers’ positive emotions from workplace support facilitate the building of personal resources such as self-efficacy and optimism (Xanthopoulou et al., 2012). COR theory suggests

that these resource-generation pathways foster positive reactions (e.g., positive coping) that may help employees effectively deal with job strain (Hobfoll, 2011).

Moreover, empirical evidence indicates that personal resources (e.g., self-efficacy and optimism) mediate the link between family emotional support and job satisfaction among white-collar employees (Kwok et al., 2015). The JD-R model (Demerouti & Bakker, 2022) proposes that in crises within or outside the workplace, an employee's job demands, job resources, and family regulatory strategies interact with each other to determine mental well-being and work-related outcomes. In addition, COR theory suggests that a supportive family can enhance key personal resources by fostering positive emotions, motivation, and satisfaction in the family and work domains (Halbesleben et al., 2014). However, Todt et al. (2018) did not find evidence of family support's impact on project workers' key personal resources. A potential reason for this surprising finding is that the family members/partners of project workers might be unable to provide the "right" support or be instrumental in tackling project work-related problems (House, 1993; Todt et al., 2018, p. 535). Thus, empirical findings on the mediating role of PsyCap in the relationship between PFS and individual outcomes among project workers are inconclusive. We propose that environmental resources such as adequate workplace and family support may create the positive environment necessary for PsyCap to develop and mitigate the negative stress and job burnout experienced by project workers. Hence, we suggest that PsyCap serves as a mediating link between environmental factors (e.g., perceived workplace and family support) and subjective stress experienced by project workers. Accordingly, the following hypotheses are formulated:

Hypothesis 4a: PsyCap mediates the relationship between perceived workplace support and subjective stress.
Hypothesis 4b: PsyCap mediates the relationship between perceived family support and subjective stress.

2.4. Subjective stress, job burnout, and job performance

The JD-R model assumes that job demands deplete employees through an impairment process that results in job strain (Demerouti et al., 2001). Job strain is stimulated by stressors that induce a stress process and increase anxiety, tension,

and exhaustion (Jex, 1998). Following this line of reasoning, project demands are likely to result in negative stress for project workers, which can lead to job burnout and poor performance in the long term (Jugdev et al., 2018). On the other hand, COR theory proposes that stress is a reaction to environmental factors that threaten or eliminate resources (Hobfoll, 1989). Therefore, stress is inevitable because individuals tend to accumulate and protect personally valued resources while simultaneously investing and replenishing used resources to meet their environmental demands (Hobfoll, 2011). Accordingly, chronic stress can deplete an individual's resources and provoke job burnout (Hobfoll et al., 1989). In this study, stress (or subjective stress) is defined as a worker's subjective feelings based on their appraisal of work-related stressors (Leung et al., 2008) that manifest as dissatisfaction with the work environment, feelings of depression, and low confidence in the organization (Leung et al., 2009). Project studies have demonstrated that excessive subjective stress has a strong negative effect on project worker performance (Leung et al., 2009; Senaratne & Rasagopalasingam, 2017) and is a significant factor leading to job burnout (Leung et al., 2011; Naoum et al., 2018).

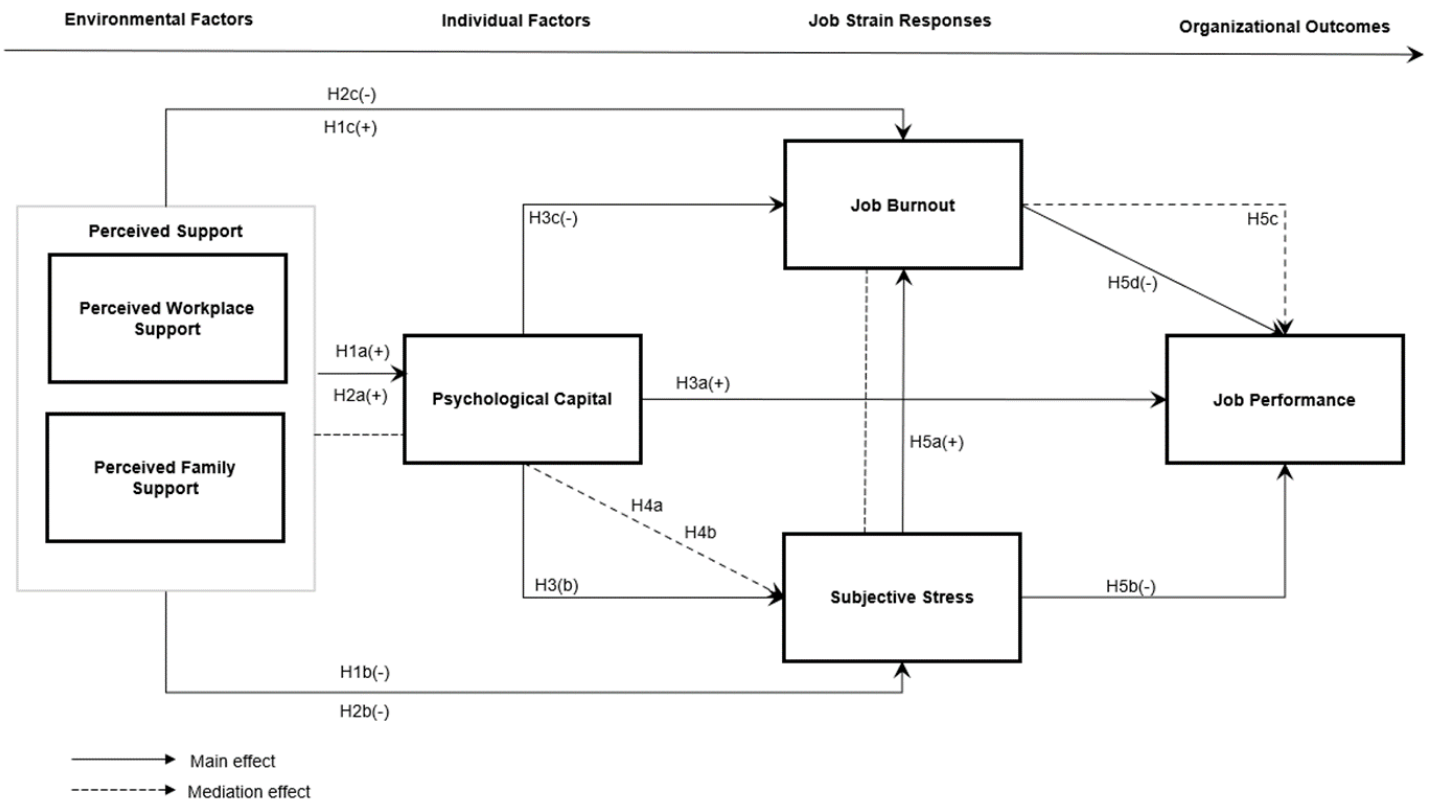
Job burnout is a process that begins with prolonged exposure to job demands that are interpreted by individuals as stress (Maslach et al., 2001). Burnout can be measured by the degrees of emotional exhaustion, cynicism, and professional inefficacy (Leiter & Maslach, 2016). Emotional exhaustion describes an individual's feelings of being physically fatigued and depleted of emotional resources by work, and it is caused by work-related stressors such as poor working conditions (Maslach et al., 2001). Cynicism refers to detachment or depersonalization (Leiter & Maslach, 2016). The latter is a negative, callous, or excessively detached response to other people and may manifest in feelings of rejection or alienation, such as negative job attitudes, excessive concerns, or irritability toward job responsibilities or other people (Maslach, 2003). Professional inefficacy is a depleted sense of oneself or accomplishments based on a negative self-evaluation and dissatisfaction with job achievements (Leiter & Maslach, 2016). Although research on burnout in the project management domain is limited (Ayalp, 2022; Jugdev et al., 2018), studies have shown that job burnout is harmful to general health (Yang et al., 2017) and ultimately negatively affects job performance (Leung et al., 2011; Naoum et al., 2018; Wu et al., 2019).

Job performance can be conceptualized as the formal requirements of the job role and includes the task performance and behaviors directly related to the organization's strategic aims (Motowidlo & Van Scotter, 1994). While there are numerous definitions and categorizations of job performance, in this study, job performance refers to and manifests in the degree of proficiency with which an employee fulfills the prescribed or predictable requirements of the project work role, the degree of adaptability in coping with, responding to and supporting change; and the degree of proactivity in initiating changes (Nuhn et al., 2019). According to the JD-R model, employees experiencing high levels of burnout can become trapped in a vicious cycle in which they are not inclined to search for support or are not motivated to change the situation, resulting in a decline in job performance (Bakker et al., 2004). Accordingly, the following hypotheses are proposed:

Hypothesis 5a*:* The level of subjective stress is positively related to job burnout in the context of project work.
Hypothesis 5b*:* The level of subjective stress is negatively related to job performance in project work.
Hypothesis 5c: Job burnout mediates the relationship between subjective stress and job performance in project work.
Hypothesis 5d: High levels of job burnout are negatively associated with job performance such that project workers experiencing increased burnout exhibit decreased effectiveness in their project work.

In Figure 1, the hypotheses are integrated into a research model.

Figure 1. Research Model



3. Data and methods

3.1. Data and sample

For sample selection, the major challenges were reaching respondents with project work experience and including a diverse range of industries and national contexts (Spanuth & Wald, 2017). To address these challenges, we included respondents from Norway and Mexico. In both countries, a wide range of industries, including construction, oil and gas (O&G), and the public sector (healthcare and education), were targeted because projects are prevalent in all sectors in modern economies (Schoper et al., 2018). As there are no conventional databases for research in the project context and gaining access to project workers is challenging (Bjorvatn & Wald, 2018), we chose to follow the sampling procedures used in previous project research (Nuhn et al., 2019; Spanuth & Wald, 2017). First, we collaborated with several project management associations in Norway and the International Project Management Association (IPMA) in Mexico to insert links to a web-based questionnaire in their newsletters and websites. Second, we collaborated with two research assistants and several organizations in a range of industries to distribute our questionnaire link to their project employees via email. Because we used a combination of sampling approaches, we cannot determine the exact response rate. However, this approach enhanced representativeness by targeting a variety of industries in two culturally different countries and ensuring that replies were obtained from employees working on projects who were potentially suitable respondents (Spanuth &Wald, 2017). These advantages compensate for the disadvantage of soliciting an undeterminable population of participants (Bjorvatn & Wald, 2018).

The respondents were asked to report on the last completed project in which they participated. The survey assessed project workers' self-rate perceived stress, burnout symptoms, support, psychological capital, and demographics. The questionnaire was administered in English, Norwegian, Swedish, and Spanish. Items were translated and back-translated by independent bilingual individuals (Brislin, 1986). To control for intersubjective validity and reliability, the questionnaire was pilot tested with 27 project practitioners. The results of the pilot test indicated that no major changes were needed.

A total of 375 complete responses were collected. After discarding 63 unusable responses due to missing values (incomplete), the data of 304 valid responses were considered for analysis. To test for potential systematic differences between the samples obtained from the different sources, an independent-sample t-test was performed. The results revealed that there were no statistically significant differences in subjective stress, job burnout, and PsyCap between sources. As indicated in Table 1, the participants were a mix of project managers (56.6%) and project team members (43.4%) from different industries, such as the public sector (30.6%), construction (22%), and O&G (12.5%), and had worked in projects for an average of 15 years. Among the 304 valid respondents, 184 (60.5%) lived in Norway, 154 (50.7%) were male, and 297 (97.7%) had received a bachelor's degree or higher.

Table 1. Sample composition

Measure	Category	Number	Percent (%)
Age	18-23	0	0
	24-28	14	4.6
	29-38	69	22.6
	39-48	116	38.1
	48 above	105	34.5
Gender	Male	154	50.7
	Female	150	49.3
Marital status	Married/living with a partner	211	69.4
	Single/living alone	93	30.6
Education level	High school and below	7	2.3
	Bachelor's degree	129	42.4
	Master's degree and above	168	55.3
Job title	Project manager/leader	172	56.6
	Project team member	132	43.4
Number of years working in projects	<1	1	.3
	1-3	15	4.9
	4-5	36	11.9
	6-10	31	10.2
	11-15	48	15.8
	<15	136	44.6
Country of residence	Norway	184	60.5
	Mexico	120	39.5
Project type	Internal projects carried out within the organization	114	37.5
	External—commissioned projects	91	29.9
	Both	99	32.6
Industry type	Manufacturing	18	5.9
	Construction	67	22
	Oil and gas, energy, & mining	38	12.5
	Retail, transport, warehousing, &	15	4.9
	hospitality, tourism	14	4.6
	Banking, financial services, & insurance	15	4.9
	Information & communication	11	3.6
	Other services (excluding financial)	5	1.6
	Fishery, forestry, agriculture	93	30.6
	Public sector, education, & healthcare	4	1.3
	Non-governmental sector (NGO)/non-profit	24	7.9
	Other: cultural or not specified		

3.2. Measures

The questionnaire items were adapted from established scales (see Appendices A and B for details). All items of the latent constructs were answered using a seven-point Likert scale anchored by "1" for "strongly disagree" and 7 for "strongly agree" (Spanuth & Wald, 2017). These items were previously used by Aabel and Aasland (2019).

The *subjective stress* (SST) construct was adapted from (Senaratne & Rasagopalasingam, 2017), who developed the scale from Leung et al. (2009). The scale includes three formative items. *Job burnout* (JB) was measured by employing the scale of Yang et al. (2017), who adapted the measurements of all burnout dimensions from Maslach's Burnout Inventory General Survey (MBI-GS) to the project context. In this study, the scale includes 14 reflective items, and Cronbach's alpha is 0.748. *The job performance* (JP) construct was measured by employing the scale of Nuhn et al. (2019), who adopted and developed the scale from Griffin et al. (2007) measurements of employees' job proficiency, adaptability, and proactivity in the project context. The scale includes nine reflective items (Cronbach's alpha = 0.77). The *psychological capital* (PsyCap) construct was measured by using the established scales of resilience (Luthans et al., 2006), self-efficacy (Riggs & Knight, 1994), optimism (Scheier et al., 1994), and hope (Snyder et al., 1996) used by Todt et al. (2018). In this study, the PsyCap scale includes 11 reflective items (Cronbach's alpha = 0.805). The perceived workplace support (PWS) construct measured the perceived frequency of project members' support by using the workplace support scale used by Bowen et al. (2014). The scale includes four reflective items (Cronbach's alpha = 0.820). The perceived family support (PFS) construct measured the perceived support from family members/partners by using the PFS scale from Spreitzer (1996), which includes a single item.

3.3. Control variables

To strengthen the validity of the results and remain consistent with previous project research exploring job burnout and/or job performance, we added gender, level of education, functional role on the project, number of years working in projects (Pinto et al., 2016), marital status (Lingard et al., 2007), industry type, and country

(Spanuth & Wald, 2017) as control variables. All control variables were dummy-coded.

3.4. Common method bias

As this study adopted a self-report survey measurement method, the findings may be subject to common method bias (CMB) (Bowen et al., 2014). To reduce this risk, established scales employed in previous project studies were adopted. Furthermore, the items in the questionnaire were kept as simple as possible, the independent and dependent variables were separated from each other, anonymity was assured, and the instrument was pilot-tested (Podsakoff et al., 2012). In addition, Harman's single-factor test showed that no substantial amount of the total variance was explained by a single factor (e.g., 24.82%) (Podsakoff et al., 2003). Finally, a full collinearity test was conducted, and all variance inflation factor (VIF) values were lower than the cut-off point of 3.3 (Kock, 2015). The results of these tests indicate that CMB is not a problem in this study.

3.5. Analysis

To test our hypotheses, we applied partial least squares–structural equation modeling (PLS-SEM). PLS-SEM is suitable for assessing our complex model because it allows the measurement of higher-order constructs in a single framework (Hair et al., 2017). To test our proposed model, we used the software SmartPLS 4. We followed a two-stage approach, and standard errors were calculated by using non-parametric bootstrapping with 10,000 subsamples (Becker et al., 2023).

4. Results

4.1. Measurement model results

Several statistical tests were conducted to determine the quality of our measurement model (see Appendices 2A-C). First, we assessed the reflective first-order constructs. Most indicator loadings exceeded the threshold of 0.7 (Hair et al., 2017). For all constructs, both the composite reliability (CR) and average variance extracted (AVE) values met the respective thresholds of 0.7 and 0.5 (Hair et al.,

2017). Discriminant validity was assessed using the traditional Fornell–Larcker criterion (see Appendix E) and heterotrait-monotrait (HTMT) ratio (Fornell & Larcker, 1981; Henseler et al., 2015). For each construct, the square root of the AVE value was higher than the construct's correlation with any other construct. In addition, each HTMT ratio (see Appendix C) was lower than the threshold value of 0.85 (Henseler et al., 2015). We further assessed our formative construct by evaluating the items' outer weights, collinearity, statistical significance, and relevance (Chin, 2010). All variance inflation factor (VIF) values were below 3.3, indicating no potential collinearity issues (Diamantopoulos & Siguaw, 2006). The significance of the outer weights met the threshold of t >1.96 for all but one item (Chin, 2010). We decided not to delete the exception because formative items are not interchangeable; removing any item can change the content validity of the model (Hair et al., 2017). Thus, all items were retained for further analysis (see Appendix 2A).

Second, we validated the quality of our second-order reflective constructs, e.g., PsyCap, by assessing multicollinearity and the quality of the measurement model (Sarstedt et al., 2019). For all constructs, Cronbach's alpha (α), CR, and AVE were greater than 0.70, 0.70, and 0.50, respectively, demonstrating the internal consistency, reliability, and convergent validity of the second-order model (Hair et al., 2017). In addition, the VIFs did not exceed the threshold of 5 for any of the constructs (see Appendix B), indicating that multicollinearity was unlikely in the model (Becker et al., 2022).

4.2. Structural model estimation and hypothesis testing

To test the structural model and hypotheses, we evaluated (i) collinearity, (ii) path coefficients, (iii) coefficient determination (R^2), (iv) effect size (f^2), and the predictive relevance of the endogenous constructs (Becker et al., 2022; Shmueli et al., 2019). Each set of predictor variables had VIF values well below 3, suggesting that the model was free of collinearity (Hair et al., 2017). Furthermore, the model seemed to fit the data, as the R^2 values of most of the endogenous constructs exceeded the threshold of 0.26 (Cohen, 1988). The results are shown in Figure 2. Statistically significant effect sizes (f^2) were established for all relationships in the model: SST on JB (0.457, p=0.000), SST on JP (0.241, p=0.000), JB on JP (0.272, p=0.000), PFS on JB (0.114, p=0.011), PFS on PsyCap (0.279, p=0.000), PFS on

SST (0.08, p=0.029); PWS on JB (0.153, p=0.01), PWS on PsyCap (0.225, p=0.000), PWS on SST (0.226, p=0.000), PsyCap on JB (0.310, p=0.000), PsyCap on JP (0.415, p=0.000), and PsyCap on SST (0.170, p=0.002). Most were medium and large effects (Cohen 1988). The predictive relevance of the model was assessed using the PLS-predict technique $(Q^2_{predict})$ (Shmueli et al., 2019). For most of the endogenous construct indicators, the root mean squared error (RMSE) was smaller for the PLS model than for the linear regression model (LM) (see Appendix D), indicating that the structural model had medium predictive power (Shmueli et al., 2019). Moreover, the predictive relevance (Q^2) values of all endogenous constructs were greater than zero, indicating that the model had sufficient predictive relevance. Hence, the predictive relevance of the endogenous constructs was established.

Finally, we analyzed the statistical significance and relevance of the path coefficients (β), coefficient intervals (CIs), and significance levels (t values and p values) of the hypotheses (see Table 2 and Fig. 2). Only H2b and H5b were not supported. PWS was positively and significantly related to PsyCap (β= 0.122, p < 0.006) and negatively and significantly related to SST (β= -0.310, p < 0.000) and JB (β= -0.150, p < 0.000), supporting H1a, H1b, and H1c. PFS was positively and significantly related to PsyCap (β= 0.098, p < 0.002) and negatively and significantly related to JB (β= -0.048, p < 0.027), supporting H2a and H2c.

Furthermore, as expected, PsyCap was positively and significantly related to JP (β= 0.290, p < 0.000) and negatively and significantly related to SST (β= -0. 429, p < 0.000) and JB (β= -0.257, p < 0.000), supporting H3a, H3b, and H3c. H5a was supported, as SST (β= 0.374, p < .0.000) was strongly and positively related to JB. Finally, JB was negatively and significantly related to JP (β= -0.170, p < 0.017), supporting H5d.

The results of the mediation analysis (see Table 2) revealed that PsyCap significantly mediated the relationship between PWS and SST (β= -0.053, p < 0.012). Further assessment showed that the total effect of PWS on SST was also significant (β= -0.362, p < 0.000), and this relationship remained significant in the absence of the mediator (β= -0.310, p < 0.000), suggesting a competitive partial mediating role of PsyCap in the relationship between PWS and SST. Hence, H4a was supported. The indirect effect of PFS on SST through PsyCap was significant

(β= -0.042, $p < 0.006$), whereas the total effect (β= 0.014, $p < 0.688$) and direct effect of PFS on SST (β= 0.056, $p < 0.086$) were not significant. This suggested that PsyCap fully mediates the relationship between PFS and SST, and H4b was supported. Finally, the mediation effect of JB on the relationship between SST and JP was significant (β= -0.064, $p < 0.022$). Further assessment indicated that the total effect of SST on JP (β= 0.005, $p < 0.897$) and the direct effect of SST on JP (β= -0.069, $p < 0.136$) were not significant, indicating full mediation by JB. Hence, H5c was supported.

The effects of all control variables except gender and education were significant. The country variable was significantly related to SST (β= 0.290, $p < .0.012$), JB (β= -0.325, $p < 0.000$), JP (β= 0.550, $p < .0.000$), and PsyCap (β= 0.586, $p < .0.000$). Industry (β= 0.157, $p < .0.043$) and marital status were significantly related to JP (β= -0.233, $p < .0.009$), whereas work title (β= -0.183, $p < .0.026$) and experience (β= 0.301, $p < .0.001$) were significantly related to PsyCap.

Figure 2. Results of the structural model

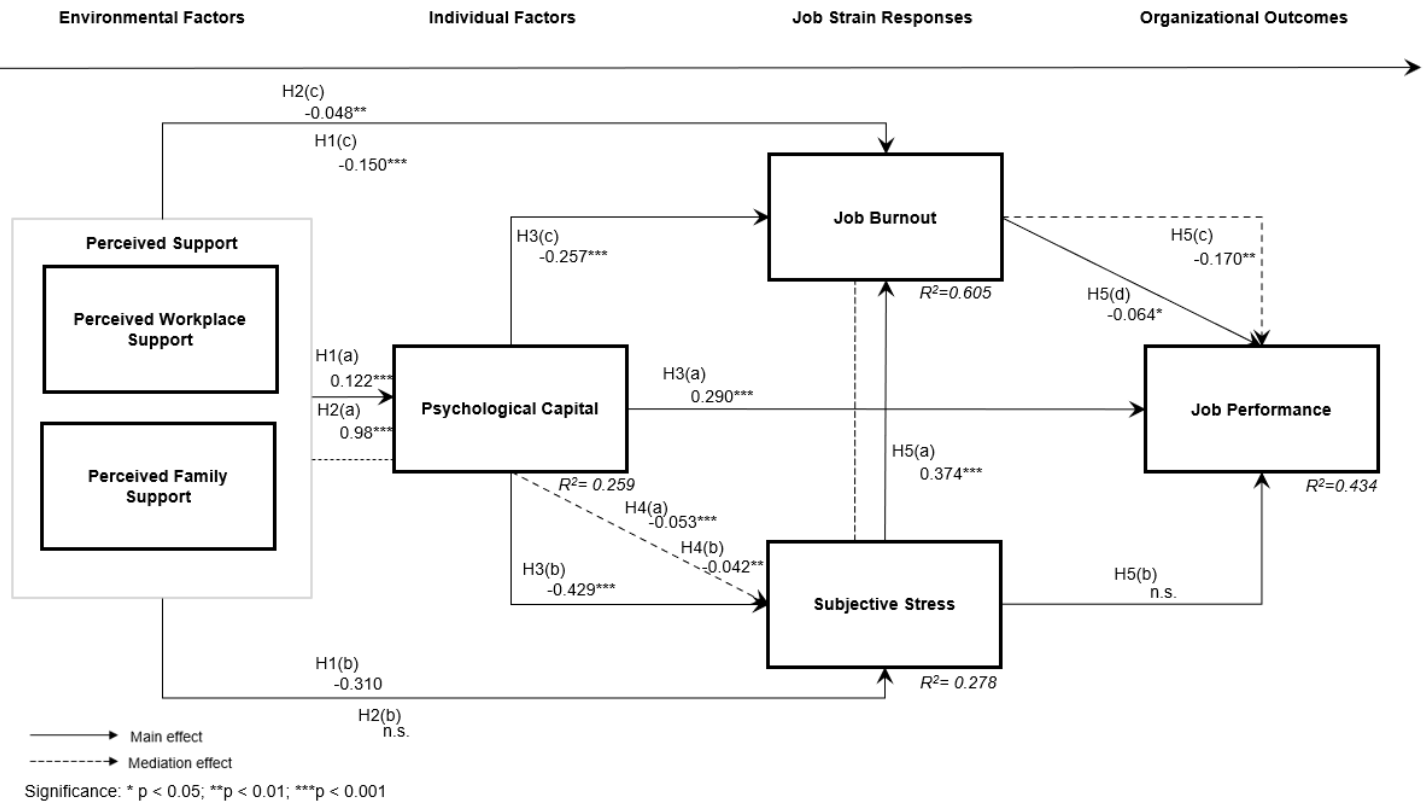


Table 2. Structural model and mediation analysis

	Direct paths	**Direct effects**					
Hypotheses		Std. coefficients (O)	Mean	STDEV	T statistics	P values	Remarks
H1a	PWS -> PsyCap	0.122	0.123	0.043	2.816	0.005	Supported
H1b	PWS -> SST	-0.310	-0.310	0.051	6.091	0.000	Supported
H1c	PWS -> JB	-0.150	-0.150	0.039	3.843	0.000	Supported
H2a	PFS -> PsyCap	0.098	0.099	0.032	3.036	0.002	Supported
H2b	PFS -> SST	0.056	0.056	0.033	1.725	0.085	Not supported
H2c	PFS -> JB	-0.048	-0.049	0.023	2.125	0.034	Supported
H3a	PsyCap -> JP	0.290	0.291	0.066	4.387	0.000	Supported
H3b	PsyCap -> SST	-0.429	-0.431	0.073	5.920	0.000	Supported
H3c	PsyCap -> JB	-0.257	-0.255	0.049	5.251	0.000	Supported
H5a	SST -> JB	0.374	0.374	0.035	10.563	0.000	Supported
H5b	SST -> JP	0.069	0.068	0.046	1.491	0.136	Not supported
H5d	JB -> JP	-0.170	-0.169	0.071	2.400	0.016	Supported
	Mediation paths	**Indirect effects**					
H4a	PWS -> PsyCap -> SST	-0.053	-0.053	0.021	2.545	0.011	Supported
H4b	PFS -> PsyCap -> SST	-0.042	-0.043	0.016	2.715	0.007	Supported
H5c	SST -> JB -> JP	-0.064	-0.063	0.027	2.315	0.021	Supported
	Total effects paths	**Total direct effects**					
	PWS -> SST	-0.362	-0.363	0.053	6.873	0.000	Significant
	PFS -> SST	0.014	0.013	0.035	0.404	0.686	Not significant
	SST -> JP	0.005	0.005	0.039	0.129	0.897	Not significant

5. Discussion and conclusion

Following calls by An et al. (2019), Pinto et al. (2016), and Yang et al. (2017) to identify environmental and individual factors that influence job burnout and its detrimental consequences, this study aimed to explore the impact of environmental factors, such as social support, and psychological factors, such as PsyCap, on psychological states, including subjective stress and burnout. Additionally, the study examined the influence of these factors on the work performance of project workers. This study builds on previous research that focused only on specific elements of PsyCap by extending the analysis to multiple elements.

5.1. The role of workplace and family support

The results suggest that environmental resources such as workplace and family support and PsyCap help prevent and mitigate the negative aspects of project work and their potential detrimental consequences for individual project workers and organizations. In line with the JD-R model (Xanthopoulou et al., 2012), COR theory (Halbesleben et al., 2014; Hobfoll, 2002, 2011), and earlier empirical findings (e.g., Todt et al., 2018), we find that perceived workplace support (i.e., project members' trust, respect, and cooperation) enhances project workers' PsyCap, which is a key personal factor that helps prevent or mitigate psychological distress and burnout (Avey et al., 2009). Perceived workplace support also directly impacts subjective stress and job burnout, in line with the finding by Sun et al. (2020) that weak or absent perceived workplace support contributes to burnout.

Moreover, in line with the JD-R model (Demerouti & Bakker, 2022) and COR theory (Hobfoll, 1989) but in contrast to Todt et al. (2018), we find that perceived family support enhances project workers' PsyCap and individual outcomes at work. Sample differences may explain the discrepancy between our findings and those of Todt et al. (2018). Our findings regarding perceived family support align with those of Kwok et al. (2015) and Cohen and Wills (1995), who reported that family social/emotional support helps employees develop self-efficacy, optimism, and resilience, which are components of PsyCap. Additionally, we find that perceived family support mitigates job burnout symptoms, consistent with Lingard and Francis's (2006) conclusion that family social support helps project workers better cope with burnout symptoms. The underlying psychological mechanism is

that experiencing positive emotions (e.g., care, love, and encouragement) from a supportive family can help project workers alleviate negative emotions related to adverse work-related situations, thereby reducing emotional exhaustion levels (Hobfoll, 1989, 2002). Emotional exhaustion is strongly related to job performance (Bakker et al., 2004). Hence, both perceived workplace and family support that allows project workers to receive care, empathy, and opportunities for emotional expression can cultivate/nurture PsyCap, which, in turn, helps them adequately deal with project-related stressors and function positively. These findings support the resource-gain mechanism proposed by Hobfoll (2011) and are important because the relationship between support and PsyCap has rarely been explored in project management research.

Finally, our results show that family support does not significantly affect perceived work-related stress levels. This finding contradicts past research that found that family support alleviates the perceived job strain symptoms and uncertainty (Ersoy et al., 2023). Sample differences and contextual differences may explain the discrepancies between our findings and those of Ersoy et al. (2023).

5.2. The role of PsyCap

Consistent with Avey et al. (2009), we find that PsyCap is strongly and negatively related to job strain responses, particularly subjective stress, and strongly and positively related to job performance. In line with COR theory (Hobfoll et al., 2018) and Gallagher et al. (2015), these findings indicate that PsyCap is a coping resource and a powerful weapon for combatting stress and adverse situations in the project context (Hobfoll, 2011). Employees with high levels of PsyCap may be more capable of effectively coping with the negative aspects of project work and may display higher job performance. Finally, similar to the work of Todt et al. (2018), our findings reveal that PsyCap mediates the relationship between social support and project workers' psychological states (in our case, subjective stress). This finding extends scarce empirical evidence on the crucial role of both resources in employees' psychological well-being in the project context. Social support can boost individual and project performance by fostering project workers' PsyCap and reducing their subjective stress levels.

5.3. Subjective stress, job burnout, and job performance

In line with the JD-R model (Bakker et al., 2004), COR theory (Hobfoll, 1989, 2011), and earlier project management research (e.g., Leung et al., 2011; Naoum et al., 2018), we find that high levels of perceived work-related stress can lead to job burnout and, ultimately, poor performance. The total impact of subjective stress on job performance is mediated by job burnout. These findings also support the COR theory proposition that (project) workers who experience high initial levels of job burnout may perceive a threat to resources or may have already lost resources. As a result, according to the resource-depletion mechanism (Hobfoll, 2011), they expect to be exhausted, less efficient, and disillusioned about their work performance, coworkers, and the (project) organization (Hobfoll, 1989).

In contrast to prior studies that have established negative relationships of subjective stress with employee productivity, effectiveness, and work quality (Senaratne & Rasagopalasingam, 2017), we find that subjective stress does not have a direct negative impact on the job performance of project workers in Mexico and Norway. This result aligns with the findings of Leung et al. (2011) and suggests that project workers can thrive under certain stress levels—adequate stress may enhance their focus without disrupting their performance. Several factors may account for the difference between our results and those of Senaratne and Rasagopalasingam (2017), including variations in industry types, organizations, project characteristics, roles, and macro-level elements such as the cultural values of participants. Experienced project workers may possess the coping efficacy required to manage stress effectively (Lloyd-Walker et al., 2018), and they may perceive stress as an inherent aspect of their projectified work life (Jepson et al., 2017). Additionally, project workers tend to be results-oriented, as their performance appraisals primarily center on accomplishing project tasks, deliverables, and objectives. Consequently, the direct correlation between subjective stress and job performance may not be as pronounced in project work as in occupations where workplace stress more directly impacts routine tasks.

5.4. Theoretical contributions

This study makes several theoretical contributions to the project management literature. First, this study enriches research on the negative aspects of project work and its detrimental consequences for individual project workers (Aguilar Velasco

& Wald, 2022). This study, therefore, responds to the call for more research on the environmental and individual factors that influence job burnout and its detrimental consequences (An et al., 2019; Pinto et al., 2016; Yang et al., 2017) and how to mitigate them (Sun et al., 2020). Moreover, the findings emphasize the key roles of social resources and PsyCap, which not only serve as coping resources to combat job burnout and its negative consequences but also contribute to protecting project workers' psychological well-being, creating healthier work environments, and enhancing organizational productivity (Jugdev et al., 2018). Second, our research contributes to the understanding of the important role that social resources outside the organizational setting play in the development of PsyCap (Neuman et al., 2014). We demonstrate that positive emotions and psychological well-being fostered by social support from both the work and family domains are crucial underlying socio-psychological mechanisms of PsyCap cultivation. This is important because project workers with optimal PsyCap levels may be better equipped to cope with project-related stressors and their negative consequences. Third, we contribute to the extended JD-R model by providing evidence that family resources influence personal resources, which can help employees positively respond to adverse events at work and outside of work (Demerouti & Bakker, 2022). Finally, our study is the first to assess the impact of interactions between PsyCap and environmental resources from both the work and family domains on the relationships between subjective stress, job burnout, and job performance among project workers.

5.5. Practical implications

The findings of this study suggest opportunities to design strategies and interventions to better support project workers who are susceptible to burnout. One option is to enhance PsyCap levels. This could be done through microlearning (e.g., web training via mobile applications), coaching, gamification (Carter & Youssef-Morgan, 2022), or various face-to-face training interventions (Avey et al., 2009). Interventions should aim to make project workers feel efficacious and build their ability to look for alternative pathways to reach their goals in their work and daily lives. By fostering PsyCap, human resources (HR) managers may provide a new HR development approach to help project workers strengthen and build the psychological capacities they need to prevent or mitigate job burnout and improve organizational performance (Avey et al., 2009). Adequate PsyCap levels would

provide a competitive advantage for both employees and organizations and are needed in today's complex and dynamic project management environments. However, PsyCap alone may be insufficient to eliminate the detrimental consequences of job burnout. Therefore, leaders should also pay attention to the powerful role of workplace social resources in buffering or promoting burnout. The working environment must enable efficient and resource-rich social relationships.

5.6. Limitations and future research

This study has several limitations. First, the cross-sectional design does not allow casual relations to be examined. A longitudinal design would further unravel the presence of possible reverse effects. Second, the sampling strategy prevents a calculation of the precise response rate, limiting the findings' generalizability. Third, convenience sampling may lead to sampling bias, and we used only single self-report measures due to the difficulty of obtaining objective data. Future research should employ objective data, such as supervisor ratings of job performance. Fourth, despite using procedural and statistical controls, the results may be influenced by CMB (Podsakoff et al., 2003). Finally, we found that PsyCap mediates the relationships of perceived workplace and family support with individual work-related outcomes. However, we only focused on one type of environmental resource factor. Future research could explore the effects of different factors that may influence project workers' PsyCap and job burnout levels, such as culture (Pinto et al., 2016), perceived organizational justice (Yang et al., 2017), and job autonomy (Sun et al., 2020). Future research should explore the mechanisms by which PsyCap mitigates stress and its detrimental consequences, such as coping mechanisms (Jin et al., 2023; Senaratne & Rasagopalasingam, 2017), to produce more complete results and applicative implications.

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Appendix 2A. First-order hierarchical measurement model results

Construct	Level			
2nd-order	1st-order	Item labels	Factor loadings	Sign. (t-value)
Job Burnout	**Emotional Exhaustion**	Project work made me feel emotionally drained.	0.905	84.486
	CR=0.95, AVE=0.80	I felt used up after project work.	0.888	61.116
		I felt tired when I got up in the morning and had to face another day on the project.	0.924	108.129
		Working all day on a project was a strain for me.	0.903	73.855
		I felt that I was weak and susceptible to illness.	0.866	48.552
	Professional Inefficacy	I would feel comfortable when I completed the project tasks effectively*.	0.564	8.804
	CR=0.87, AVE=0.58	I felt I was making effective contributions to what my company does*.	0.830	38.388
		I was able to effectively solve the problems in my project-based work*.	0.837	37.449
		I felt exhilarated after I accomplished something on my project*.	**D**	
		In my opinion, I was good at my project work*.	0.826	34.277
		I felt like I had accomplished many worthwhile things for society in my project work*.	0.720	20.698
	Cynicism	I just wanted to finish my work (on the project) and not be bothered.	**D**	
	CR=0.90, AVE=0.82	I have become more cynical about whether my work (on the project) contributed anything.	0.900	55.025
		I was not working as enthusiastically as before (on the projects).	0.921	86.332
Job Performance	**Job Proficiency**	I carried out the core parts of my project work well.	0.887	73.954
	CR=0.87, AVE=0.69	I completed my core project task well using the standard procedures.	0.799	25.745
		I ensured that my project tasks were completed properly.	0.805	20.631
	Job Adaptability	I adapted well to changes in core tasks in the project.	0.862	39.096
	CR=0.84, AVE=0.64	I coped with changes to the way I had to do my core project tasks.	0.834	25.423
		I learned new skills to help me adapt to changes in my core tasks in the project.	0.709	12.605
	Job Proactivity	I initiated better ways of doing my core tasks in the project.	0.792	17.326
	CR=0.88, AVE=0.71	I came up with ideas to improve how my core project tasks were done.	0.920	52.482
		I made changes to the way my core project tasks were done.	0.805	19.875

Psychological Capital	**Self-efficacy**	I had confidence in my ability to do my project work.	0.869	36.560
	CR=0.86, AVE=0.68	I was very proud of my job skills and abilities.	0.853	36.660
		I had all the skills needed to perform my job well.	0.756	19.926
	Optimism	In uncertain times, I usually expected the best (outcome) of project work.	0.761	19.064
	CR=0.85, AVE=0.65	I expected more good things to happen to me than bad things during project work.	0.831	27.255
		I am optimistic about my future regarding my project work.	0.833	38.272
	Hope	At that time, I was energetically pursuing my project work goals.	**D**	
	CR=0.87, AVE=0.77	If I should find myself in a jam at project work, I could think of many ways to get out of it.	0.873	38.746
		I always met my work goals (in the project).	0.882	39.027
	Resilience	I usually managed difficulties one way or another during project work.	0.620	8.676
	CR=0.85, AVE=0.59	I think I could be "on my own", so to speak, in the project if I had to.	**D**	
		I usually took stressful things in project work in stride (without hesitation).	0.786	21.899
		I could get through difficult times at work because I had experienced difficulty before.	0.834	32.668
		I felt I could handle many things at a time (in the project).	0.829	35.726
	Perceived: Workplace Support	How often did your immediate manager/supervisor make an extra effort to make project work easier for you?	0.770	21.003
	CR=0.88, AVE=0.65	How often could your immediate manager/supervisor be relied upon to help when a difficult situation arose in the project work?	0.806	28.758
		How often did your colleagues (team members) make an extra effort to make the project work easier for you?	0.826	27.500
	Family Support	I had the support I needed from my partner/family.	1.000	
	CR=0.86, AVE=0.75			
			Weights	
	Subjective Stress			
	VIF=1.519	My workplace environment and climate were not very pleasant or satisfactory.	0.104	1.320
	VIF=1.559	I felt depressed in my project occupation.	0.707	8.794
	VIF=1.036	I had full confidence that the organization would help me in the future*.	0.409	5.303

Notes: *Reverse coded; **D** item deleted to increase the construct reliability and validity threshold.

Appendix 2B. Second-order hierarchical measurement model results

Construct level					
2nd-order constructs	1st-order constructs	Factor loadings	Significant (t-value)	CR	AVE
Job Burnout				0827	0.668
	Emotional Exhaustion	0.814	34.030		
	Cynicism	0.889	64.788		
	Professional Inefficacy	0.742	18.901		
Psychological Capital				0.872	0.630
	Self-efficacy	0.775	23.744		
	Optimism	0.824	77.051		
	Hope	0.817	33.983		
	Resilience	0.755	19.961		
Job Performance				0.867	0.685
	Job Proficiency	0.851	34.742		
	Job Adaptability	0.867	46.395		
	Job Proactivity	0.760	19.263		

Note: Composite reliability (CR) values; Average variance extracted (AVE) values.

Appendix C. Heterotrait-monotrait (HTMT) results

	JADP	CYN	EEX	HOP	OPT	PEF	PFS	PWS	JPRO	JPRF	RES	SEF
JADP												
CYN	0.353											
EEX	0.196	0.770										
HOP	0.563	0.450	0.297									
OPT	0.478	0.569	0.386	0.748								
PEF	0.427	0.593	0.367	0.616	0.610							
PFS	0.241	0.339	0.152	0.342	0.345	0.294						
PWS	0.142	0.508	0.483	0.229	0.340	0.345	0.279					
JPRO	0.722	0.233	0.087	0.370	0.371	0.372	0.192	0.140				
JPRF	0.774	0.469	0.273	0.630	0.463	0.551	0.250	0.193	0.540			
RES	0.509	0.356	0.276	0.757	0.575	0.487	0.230	0.146	0.279	0.384		
SEF	0.379	0.452	0.318	0.614	0.719	0.528	0.195	0.223	0.297	0.488	0.634	

Note: Job Adaptability (JADP); Cynicism (CYN); Emotional Exhaustion (EEX); Hope (HOP); Optimism (OPT); Professional efficacy (PEF); Perceived Family (PFS); Perceived Workplace Support (PWS); Job Proactivity (JPRO); Job Proficiency (JPRF); Resilience (RES); Self-efficacy (SEF).

Appendix D. PLS-predict results

Endogenous construct	Q^2	Q^2predict	PLS-SEM_RMSE	LM_RMSE
Job burnout	0.227			
Job performance	0.059			
Psychological capital	0.105			
Subjective stress (STT)	0.140			
Endogenous construct indicators				
Cynicism		0.199	0.898	0.900
Emotional exhaustion		0.161	0.919	0.908
Project Efficacy		0.099	0.952	0.958
Job Adaptation		0.035	0.986	0.996
Job Proficiency		0.052	0.978	0.994
Job Proactivity		0.030	0.988	0.997
Hope		0.080	0.963	0.975
Optimism		0.112	0.945	0.947
Resilience		0.031	0.987	0.988
Self-efficacy		0.032	0.987	0.989
SST1: Workplace environment perceptions		0.077	1.882	1.885
SST2: Job strain symptoms		0.094	1.910	1.903
SST3: Confidence in the organization		0.061	1.779	1.756

Note: Predictive relevance:(Q^2) = $Q^2 > 0$.

Appendix E. Correlation matrix

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Subjective stress	3.12	1.40	1												
2. Emotional Exhaustion	3.32	1.45	.693**	1											
3. Professional Efficacy	2.48	0.87	.301**	.308**	1										
4. Cynicism	3.08	1.40	.540**	.718**	.356**	1									
5. Job proficiency	6.01	0.92	-.193**	-.225**	-.421**	-.273**	1								
6. Job adaptation	5.94	0.83	-.112	-.165**	-.319**	-.233**	.572**	1							
7. Job proactivity	5.61	1.03	.021	-.042	-.294**	-.131*	.425**	.560**	1						
8. Self-efficacy	5.84	0.91	-.225**	-.271**	-.400**	-.316**	.366**	.270**	.232**	1					
9. Optimism	5.69	1.02	-.322**	-.315**	-.457**	-.407**	.341**	.347**	.288**	.538**	1				
10. Hope	5.78	0.94	-.309**	-.317**	-.489**	-.374**	.481**	.428**	.275**	.520**	.593**	1			
11. Resilience	5.48	0.91	-.110	-.171**	-.323**	-.202**	.273**	.334**	.235**	.462**	.413**	.556**	1		
12. Perceived workplace support	4.49	1.24	-.399**	-.425**	-.299**	-.399**	.156**	.095	.105	.179**	.261**	.201**	.089	1	
13. Perceived family support	5.57	1.49	-.076	-.147*	-.244**	-.279**	.213**	.204**	.173**	.172**	.295**	.294**	.199**	.252**	1

Note: n=304. *p<0.05; **p<0.01; ***p<0.001

Chapter 4. Dealing with the Dark Side of Projectification: The Influence of Coping Strategies and Resources on Job Strain.

Abstract

Purpose – This study investigates the coping strategies project workers employ to deal with project work challenges and their consequences. Additionally, it examines factors beyond rewards that influence project workers' selection and utilization of coping strategies.

Design/methodology/approach – Semi-structured interviews were conducted with 37 project workers in Norway's oil and gas industry who were engaged in multiple projects simultaneously. Data analysis followed the Gioia methodology.

Findings – The results suggest that senior and male project workers at operator companies predominantly use adaptive coping strategies to address workplace stressors and enhance their coping resources proactively. These strategies allow them to prevent or effectively cope with stressors and the possible adverse consequences of those stressors. By contrast, women, junior project workers, project workers at supplier companies, and those driven by perfection or concerns about failure tend to use maladaptive coping strategies to handle stressors and avoid or alleviate job strain symptoms. These strategies are counterproductive because they add stress and amplify the project worker's job strain symptoms. Additionally, future time orientation emerged as a pivotal personal resource influencing coping strategies.

Originality/value – This study expands the project management literature by providing insights into project workers' adaptive and maladaptive coping strategies to navigate the negative aspects of project work and their consequences.

Keywords: Job strain, Coping Mechanisms, Project Worker, Future Time Orientation, Psychological Well-being

1. Introduction

Projects enable personal and professional growth (Palm & Lindahl, 2015), but project work's dynamic and complex nature can be frustrating, counterproductive, and stressful for project workers (Gustavsson, 2016). Many project workers work on multiple projects simultaneously, leading to project and work overload, intense pressure (Delisle, 2020), a high pace of work, tight deadlines, and constant workflow disruptions (Gällstedt, 2003). Moreover, project workers collaborate with multiple stakeholders with diverse backgrounds and personalities (Berg & Karlsen, 2013). They must deal with incessant expectations and cultural stressors (Liu et al., 2023), including navigating organizational toxicity (e.g., workplace bullying, harassment, aggressiveness, and narcissism) (Mahipalan & Garg, 2023; Nielsen et al., 2012), which exacerbates the adverse impacts of project work on mental health (Sun et al., 2022). Such project-related demands (or stressors) are widely recognized as significant causes of job stress, often resulting in high levels of stress, job strain, and poor well-being and health (Aguilar Velasco & Wald, 2022; Darling & Whitty, 2020).

Not all project workers are negatively affected by specific workplace stressors (An et al., 2019), and some cope better with job demands than others (Haynes & Love, 2004). Foreign laborers, temporary workers, and those early in their careers are particularly vulnerable (Bowen et al., 2021; Chan et al., 2012; Tijani et al., 2023). The mechanisms by which project workers adopt effective coping strategies in response to threatening work stressors and job stress are not well understood (Bowen et al., 2021; Liang et al., 2022; Lim and Francis, 2023). Studies of the coping strategies used by project workers to deal with work-related stress (e.g., Leung et al., 2006; Love & Irani, 2007; Yip et al., 2008) have primarily been quantitative (Bowen et al., 2021; Jin et al., 2023; Unterhitzenberger et al., 2021) and focused on project managers (Delisle, 2020). Moreover, although studies have examined spatial and temporal boundaries (Delisle, 2020; Gustavsson, 2016), the cognitive and emotional aspects of coping (Delisle, 2020) and factors other than motivation that may affect the adoption of coping strategies by project workers remain underexplored (Tijani et al., 2021, 2023). Finally, previous studies have mainly focused on employee performance, which directly impacts the performance of the overall organization, and overlooked the well-being of employees (Hameed et al., 2023).

This study aims to fill these gaps in the literature and enhance our understanding of how project workers adopt and use coping strategies to navigate project work stressors and their potential detrimental consequences. Through a qualitative research design, the following research questions are addressed:

1. How do project workers cope with project work challenges, stress, and their potential negative consequences?
2. What factors influence the choice of coping strategies adopted by project workers?

By answering these questions, this study makes significant contributions to theory and research in project organization and management. First, this study focuses on project workers who are engaged in multiple projects simultaneously, a neglected group of project workers. Second, this study is the first in the project management domain to identify job crafting as a coping strategy and personal resources (e.g., time orientation) as crucial coping resources that influence the coping mechanisms of project workers. Third, the study provides valuable in-depth insights into how project workers cope with work-related stress and its adverse effects and underlying mechanisms. These insights have the potential to inform targeted intervention strategies tailored to the diverse needs of project workers.

The remainder of this paper is structured as follows. Section 2 presents the literature review. The data, methods, and empirical context of the study are described in Section 3. Section 4 presents the findings, while Section 5 provides a discussion, implications, and suggestions for further research. Finally, Section 6 concludes.

2. Literature review

2.1. Job stress in the project context

Projects are temporary organizations embedded in permanent organizations (Bakker, 2010). Project-oriented companies typically have a matrix organizational structure in which business functions are performed in separate projects and functional organizational lines (Hobday, 2000). Workload dynamics are influenced by project lifecycles, including peak demands and a fast work pace

(Delisle, 2020; Shih, 2004). Project workers often hold dual hierarchical positions and undertake diverse responsibilities beyond their project scope (Palm & Lindahl, 2015). Interconnected projects intensify these challenges, with many workers simultaneously engaged in multiple projects and managing conflicting requirements from multiple stakeholders (Delisle, 2020; Gustavsson, 2016; Unterhitzenberger et al., 2021). This professional complexity, coupled with the transient and dynamic nature of projects, makes the role of project worker stressful (Smith et al., 2011).

Job stress is the tension that occurs when perceived demands, also known as stressors (e.g., overload, fatigue, emotional exhaustion), outweigh an individual's ability to cope (Jex, 1998; Lazarus & Folkman, 1984). Job stress can emerge from various challenges inherent to project work: project overload (Gustavsson, 2016), intense pressure (Delisle, 2020), multitasking (Pinto et al., 2016), lack of proper recuperation (Zik-Viktorsson et al., 2006), role ambiguity, interdisciplinary collaboration, conflicting demands, and uncertainty (Saunders et al., 2016). These demanding circumstances can trigger stress responses that lead to adverse outcomes for the worker and the organization, such as long working hours (Gällstedt, 2003), poor mental health in the workplace (Bowen et al., 2021; Tijani et al., 2023), disengagement, job burnout (Naoum et al., 2018), feelings of anger, frustration, or anxiety (Richmond & Skitmore, 2006), poor productivity, high turnover rates, sickness absenteeism (Love & Edwards 2005; Naoum et al., 2018), and even suicidal ideations (Cicmil et al., 2016; Peticca-Harris et al., 2015).

Project management discourses uphold the idea of infinite resilience, which suggests that project workers should not only endure but thrive and achieve career recognition and success under extreme workloads, exceptional circumstances, and existential danger (Cicmil et al., 2016; Ekman, 2015). The project management culture, which is usually masculine, promotes self-reliance, adaptability to unforeseen situations, and unwavering work commitment (Styhre, 2011). These norms also shape project workers' levels of persistence to meet and exceed performance expectations (Dainty et al., 2004). When higher commitment demands are explicit, there is a risk that project workers will feel pressured and, in turn, put pressure on their peers by increasing responsibilities and self-inflicted work pressure (Gällstedt, 2003). Failure to meet such expectations can lead to job strain (e.g., negative emotions) (Lindgren et al., 2014), which can drive some

project workers to withdraw or even change careers. Those who remain must constantly cope with occupational stress and its negative impacts, which are costly for employees (Dainty et al., 2004) and the organization's well-being (Liang et al., 2022).

2.2. Coping strategies and their impact on well-being and performance

Coping is the "constantly changing cognitive and behavioral efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p.14). Coping is a multifaceted, dynamic, and complex construct, as individuals persistently change and implement cognitive, emotional, and behavioral efforts to manage specific external and internal demands when they face stressful events (Folkman and Moskowitz, 2004). Coping strategies vary from person to person and are influenced by environmental and individual factors (Lazarus & Folkman, 1984), including the person's subjective evaluation of the stressful event (Lazarus & Folkman, 1984), emotions, motivations, and perception of control (Lazarus, 1991; 2006). Genetic predisposition, age, personal aspirations, length of project work experience (Jepson et al., 2017), self-management skills (Nurmi, 2011), need for validation (Asquin et al., 2010), perfectionistic tendencies (Berg & Karlsen, 2013; Jin et al., 2023), performance orientation (Liu et al., 2023), and psychological flexibility also play crucial roles in shaping how project workers cope with job-related stress (Haynes & Love, 2004).

In the transactional model of stress (TMS), the process of subjective evaluation of a stressful event is called cognitive appraisal (Lazarus & Folkman, 1984). Cognitive appraisals can be categorized as primary and secondary. The primary appraisal is the initial appraisal of the situation and whether it is potentially stressful. When a situation is perceived as potentially stressful or threatening, a secondary appraisal of the ability to cope is made (Lazarus & Folkman, 1984). TMS suggests that coping responses can take the following forms: direct actions, seeking information, doing nothing, or employing relaxation or defense mechanisms to prevent or mitigate harm, threat, or distress (Lazarus & Folkman, 1984). These coping strategies are traditionally classified into problem-focused coping (P-FC) and emotion-focused coping (E-FC) (Lazarus & Folkman, 1984). P-FC attempts to control stressors through healthier behaviors, such as planful

problem-solving, positive reappraisal, and instrumental support-seeking. By contrast, E-FC involves the self-regulation of thoughts and emotional responses to the problem, ventilation of feelings, and avoidant coping strategies such as emotional support seeking, self-blame, self-distraction, withdrawal, and/or use of alcohol or drugs (Lazarus & Folkman, 1984; Folkman & Moskowitz, 2004).

The outcomes of coping strategies can be categorized as adaptive or maladaptive (Carver & Scheier, 1994). Adaptive coping strategies are adequate/healthy/beneficial goal-directed coping efforts that address stressors in a (pro)active, functional, efficient manner. For example, positive P-FC coping strategies, such as delegating, prioritizing, and seeking feedback, can reduce work-related stress and symptoms by managing essential personal resources such as self-efficacy, optimism, and energy (Berg and Karlsen, 2013). Maladaptive coping strategies are inadequate (or unhealthy) coping efforts that involve disengagement, avoidant tactics, negative self-talk, and other dysfunctional efforts to distance oneself from goals being threatened by stressors (e.g., turnover intentions) (Carver & Scheier, 1994; Folkman & Moskowitz, 2004). For example, Langdon and Sawang's (2018) empirical study shows that negative E-FC, such as self-blaming, disengagement, and passive acceptance, are related to higher levels of psychological distress. Both P-FC and E-FC can help mitigate job stress, but job strain, which can lead to mental health problems, is more efficiently mitigated by P-FC (Frimpong et al., 2023).

To solve work-related problems and mitigate or eliminate tensions, stress, and poor health, project managers typically adopt P-FC, such as active planning (Aitken & Crawford, 2007; Unterhitzenberger et al., 2021), or E-FC, such as seeking support (Richmond & Skitmore, 2006; Naoum et al., 2018). By contrast, temporary (Yip et al., 2008) and junior project workers (Leung et al., 2006) and team members who deal with different job demands and experience high levels of job strain tend to use maladaptive E-FC strategies, such as emotional discharge (Liang et al., 2018), disengagement (Gustavsson, 2016), unwillingness to discuss issues, alcohol consumption, and intentions to quit (Bowen et al., 2021). Project managers who engage in P-FC have higher happiness levels and better psychological adjustment than those who use maladaptive E-FC strategies such as cognitive avoidance, social coping, accepting responsibility, and self-controlling coping (Haynes and Love, 2004).

According to the job–demands resources (JD-R) and self-regulation model (Bakker & de Vries, 2021), the effectiveness of employees' coping strategies depends on available coping resources and the appropriateness of the coping strategy (i.e., adaptive or maladaptive) (Nurmi, 2011). The JD-R and self-regulation model (Bakker & de Vries, 2021) proposes that P-FC is generally more effective for coping with stress but may be ineffective if employees lack self-regulation resources or other coping resources. Vital resources for coping include self-control skills (Nurmi, 2011), coping efficacy (Lloyd-Walker et al., 2018), optimism (Berg & Karlsen, 2013), hope (Chak et al., 2022), personal resilience (Nwaogu & Chan, 2022), support (Richmond & Skitmore, 2006), and psychological flexibility (Cheng et al., 2014). Prolonged stress arising from various project-related demands (Bowen et al., 2014), job insecurity (Yip et al., 2008), insufficient workplace support (Richmond & Skitmore, 2006), or instances of workplace bullying can diminish coping resources (e.g., social support). Thus, some project workers may be unable to reduce work intensification, intense pressure (Delisle, 2020), task complexity (Gällstedt, 2003), and project overload (Gustavsson, 2016), regardless of their coping strategy. In this scenario, the JD-R and self-regulation model suggests that it is more effective to consciously self-regulate one's thoughts and emotions (Bakker & de Vries, 2021) and create opportunities for recovery from stress (Sonnentag and Fritz, 2015). Doing so will facilitate an effective cognitive reappraisal of the stressors (Lazarus, 1991) and the selection of an adequate coping strategy according to work-related and personal demands.

3. Methodology

To identify the coping strategies used by project workers when dealing with work-related stress and its potentially negative consequences, this study adopted a qualitative approach to capture the richness of coping mechanisms Cooper et al. (2001). Semi-structured interviews were conducted to explore the use of different coping strategies by individual project workers facing work-related strain. This study builds on the methods and approach of Gioia et al. (2013) and contextualizes the JD-R and self-regulation model (Bakker & de Vries, 2021), along with TMS (Lazarus & Folkman, 1984) and the cognitive-motivational-relational theory of emotion (CMR-E) (Lazarus, 1991), by exploring the potential organizational and

personal demands that might influence the coping strategies that project workers adopt to deal with work-related strain.

3.1. Research context

This study focuses on the oil and gas (O&G) industry, which requires many project workers to maintain organizational operations and overall performance, including permanent employees from exploration and production (E&P) companies (operators) and consultants or contractors from project-oriented companies (suppliers) that provide solutions and services, such as software and specialized technical skills, to operators (Sumbal et al., 2021). The O&G industry is a critical driver of the Norwegian economy, and project organizations in the O&G industry have faced fundamental challenges in recent decades, including the oil crisis, mergers, downsizing, and an aging workforce (Sumbal et al., 2021). Consequently, O&G companies are becoming more dynamic in confronting issues such as shortages of skilled workers, retention of critical employees, high employee turnover (Sumbal et al., 2021), and substantial pressure on project workers to maintain high job performance and productivity (Hannevik et al., 2018).

The O&G industry makes use of short- and medium-term projects with short- and medium-term assignments and commuter assignments (traveling regularly) to and from the assignment location, in addition to one- to two-year long-term assignments (larger projects) (Shortland, 2015). In general, the daily work situation is project-based; i.e., the work is temporary and involves teamwork, limited resources, and multiple departments (Gustavsson, 2016). In this sector, many project workers face multiple work-related stressors, such as high work overload (Hannevik et al., 2018), high work pressure, intense customer interactions, task conflicts, and workplace toxicity, including workplace bullying, harassment, aggressiveness, and narcissism, which negatively affect the health and performance of workers, organizations, and the economy (Hameed et al., 2023; Mahipalan & Garg, 2023; Nielsen et al., 2012). This highly projectified context offers an appropriate setting to explore the coping strategies that project workers use to deal with workplace stressors and their detrimental consequences.

3.2. Participants and procedure

The sample of participants was not randomly constructed. However, it was selected to ensure a homogeneous population in terms of stressors commonly experienced: project workers working in the same industry, the same or similar project types, and companies within the O&G industry based in Norway. The goal was to capture the project workers' subjective interpretations of their perceived stressors in their workplaces and their efforts to cope with those stressors, work-related stress, and individual outcomes in their own words. Purposive sampling was performed, and project workers were invited to participate in an interview and selected according to specific criteria (Creswell, 2012): (1) accessibility; (2) working within the O&G industry, either onshore or offshore, and based in Stavanger, Norway; (3) at least two years of working experience in projects in the same or different companies within the O&G industry in Norway; and (4) current engagement in multiple projects simultaneously in an operator or supplier company within the O&G industry in Norway.

The participants were recruited through various strategies. The researcher met the participant companies' contact persons (gatekeepers) at an annual O&G industry exhibition (called ONS) in Stavanger in 2018. These contact people were used to reach participants at the start of the study. Interested participants were contacted by email or phone, and the researcher provided more detailed information about the study and addressed any individual concerns regarding participation. After confirming that the interested participant met the selection criteria, an appointment was made to conduct the interview. These participants were used to identify additional potential participants via snowball sampling. In total, 37 interviews (the point of data saturation) were conducted with project workers in project-oriented organizations in Norway's O&G industry.

The sample covered a cross-section of ages (30 to >50 years), lengths of experience working in projects (2 to >30 years), and hierarchy levels [from junior team members (e.g., engineers, cost controllers, and planners) to senior positions (e.g., senior professionals, leaders of the project department and project managers)]. The sample comprised 17 women and 20 men and included both "operators" project staff and "supplier" project-based staff. All external project workers were hired on a 1- to 2-year basis at an operator company and were permanent employees at a supplier company. All participants were engaged in at least two projects

simultaneously. Most of the participants had university degrees equivalent to master's degrees in either economics or engineering. Table 1 contains the details of the participants.

Table 1. List of Participants

No.	Position	Tenure	Sex	Age	Education level	Workplace	Firm type
1.	Sr manager	>30	M	50+	Bachelor's	Onshore	E&P
2.	Sr manager	>30	M	50+	Bachelor's	Onshore	E&P
3.	Sr manager	15	F	40-49	Master's	Onshore	E&P
4.	Sr manager	7	M	40-49	Master's	Onshore	E&P
5.	Sr manager	16	M	40-49	Master's	Onshore	E&P
6.	Sr manager	17	M	30-39	Bachelor's	Onshore	E&P
7.	Sr manager	16	F	40-49	Bachelor's	Onshore	E&P
8.	Sr project staff	>20	M	50+	Master's	Onshore	E&P
9.	Sr project staff	11	F	30-39	Bachelor's	Onshore	E&P
10.	Sr project staff	15	F	40-49	Master's	Onshore	E&P
11.	Sr project staff	12	F	30-39	Master's	Onshore	E&P
12.	Sr project staff	>20	F	50+	Ph.D.	Onshore	E&P
13.	Sr project staff	10	F	40-49	Bachelor's	Onshore	E&P
14.	Sr project staff	15	M	40-49	Master's	Onshore	E&P
15.	Jr project staff	8	F	30-39	Master's	Onshore	E&P
16.	Sr project staff	20	F	40-49	Ph.D.	Onshore	E&P
17.	Sr consultant	16	M	40-49	Master's	Onshore	E&P
18.	Sr Consultant	10	M	40-49	Bachelor's	Onshore	E&P
19.	Sr Consultant	10	F	30-39	Bachelor's	Onshore	E&P
20.	Jr consultant	5	M	30-39	Master's	Onshore	E&P
21.	Sr consultant	15	M	40-49	Master's	Onshore	E&P
22.	Sr consultant	11	M	40-49	Bachelor's	Onshore	E&P
23.	Sr consultant	13	F	30-39	Master's	Onshore	E&P
24.	Sr project staff	>20	F	50+	Master's	Onshore	E&P
25.	Sr manager	16	M	40-49	Master's	Offshore	E&P
26.	Sr consultant	10	M	40-49	Master's	Onshore	E&P
27.	Sr consultant	10	M	40-49	Bachelor's	Offshore	E&P
28.	Sr manager	>20	M	40-49	Master's	Onshore	Supplier
29.	Sr manager	15	M	50+	Bachelor's	Offshore	Supplier
30.	Sr project staff	18	F	40-49	Master's	Onshore	Supplier
31..	Jr project staff	7	F	30-39	Master's	Onshore	Supplier
32.	Sr project staff	12	M	40-49	Master's	Onshore	Supplier
33.	Jr consultant	5	M	30-39	Master's	Onshore	Supplier
34.	Jr project staff	3	F	30-39	Bachelor's	Offshore	Supplier
35.	Sr project staff	>20	M	50+	Bachelor's	Offshore	Supplier
36.	Jr project staff	5	F	30-39	Master's	Offshore	Supplier
37.	Sr project staff	15	F	40-49	Master's	Offshore	Supplier

3.3. Interviews

Data were collected from interviews using three semi-structured questions constructed to address the research objectives while allowing the participants to freely describe their coping strategies for work-related stress (see interview guidance in Appendix 3A). The interviewer's supervisor reviewed the interview guide for clarity and conducted preliminary interviews with colleagues to gain feedback. These colleagues' responses were excluded from the final analysis.

The interviews were conducted individually at a time convenient to the participant and had an average length of 30 minutes. Before starting the interview, the interviewer briefly described the purpose of the study and provided assurances about confidentiality. The interviews had an average length of 30 minutes and continued until data saturation was reached (i.e., no new information was obtained from the participants) (Bazeley, 2013). Participation in the study was voluntary, and all participants were assured of the confidentiality of any gathered information and their ability to withdraw at any time without stating any reason for their withdrawal. All interviews were conducted in English and audio-recorded with the interviewees' permission to ensure accuracy and validity. The participants were informed that the recordings would only be used for transcription and then deleted. All interviews were fully transcribed, anonymized, and analyzed.

Twenty-three of the interviews were conducted in person at the participants' workplaces; these interviews involved one operator and one supplier company. Due to the COVID-19 pandemic, the remaining interviews were conducted online via Microsoft Teams and Zoom. In addition to conducting the interviews, the interviewer took notes on impressions and observations of interactions around workstations, coffee corners, and lunch tables while onsite. Notes were handwritten during the observations or immediately afterward by the interviewer. These observations, insights, and impressions were captured as field notes that helped the interviewer understand each company's setting and were later used to confirm emerging theoretical perspectives during the analysis (Atkinson, 2015). The interviews were also complemented by an analysis of publicly accessible information concerning the operators and supply companies where the participants were employed during the study period.

3.4. Data analysis

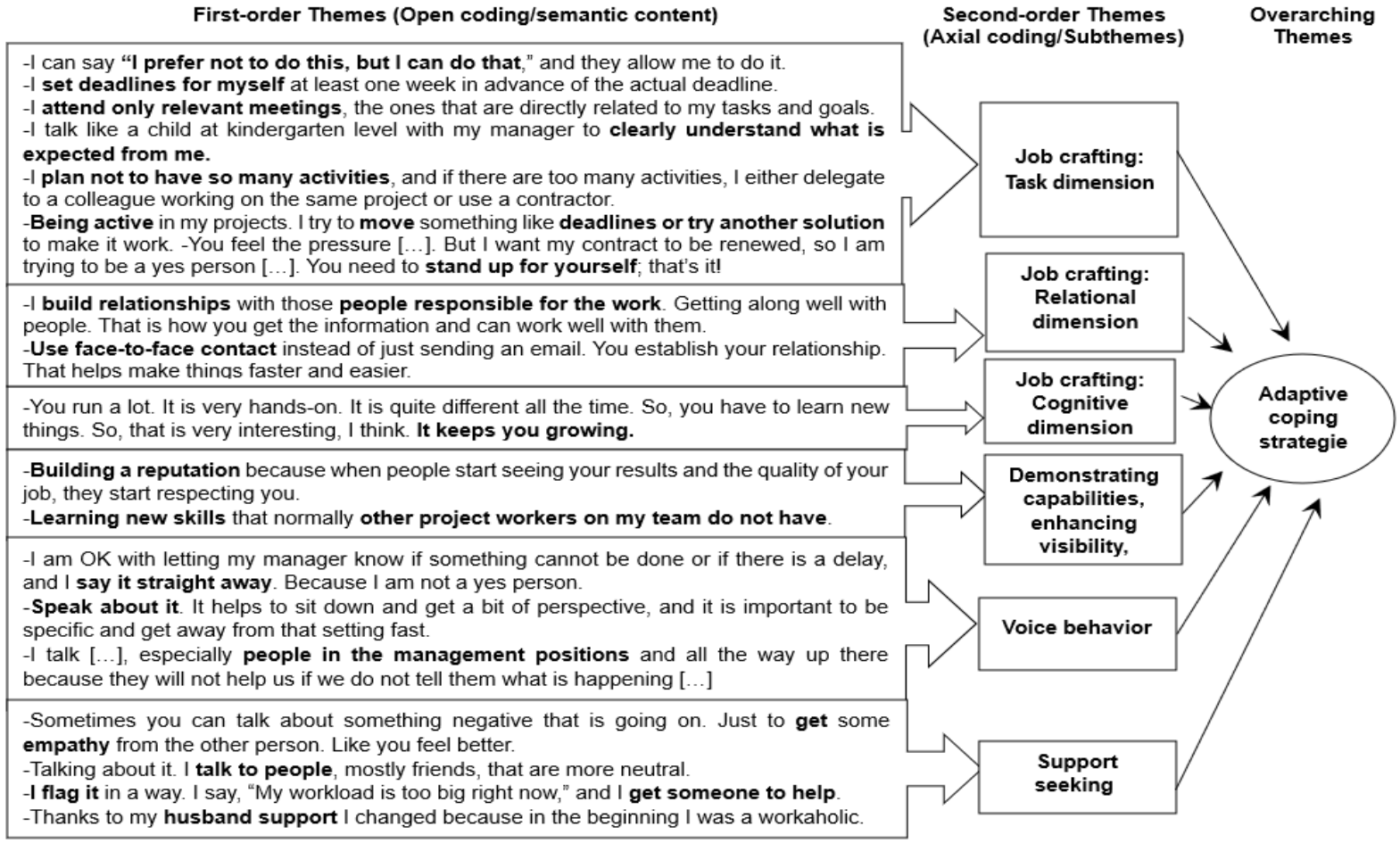
The data analysis followed a step-by-step procedure to ensure rigor (Gioia et al., 2013). The Gioia methodology was used because it offers a structured method to gather participant-centric content rather than imposing the interviewer's understanding of the literature (Gioia et al., 2013). The research approach was abductive (Mantere & Ketokivi, 2013), with a dialogical process between theory and data (Cannon & Kreutzer, 2018).

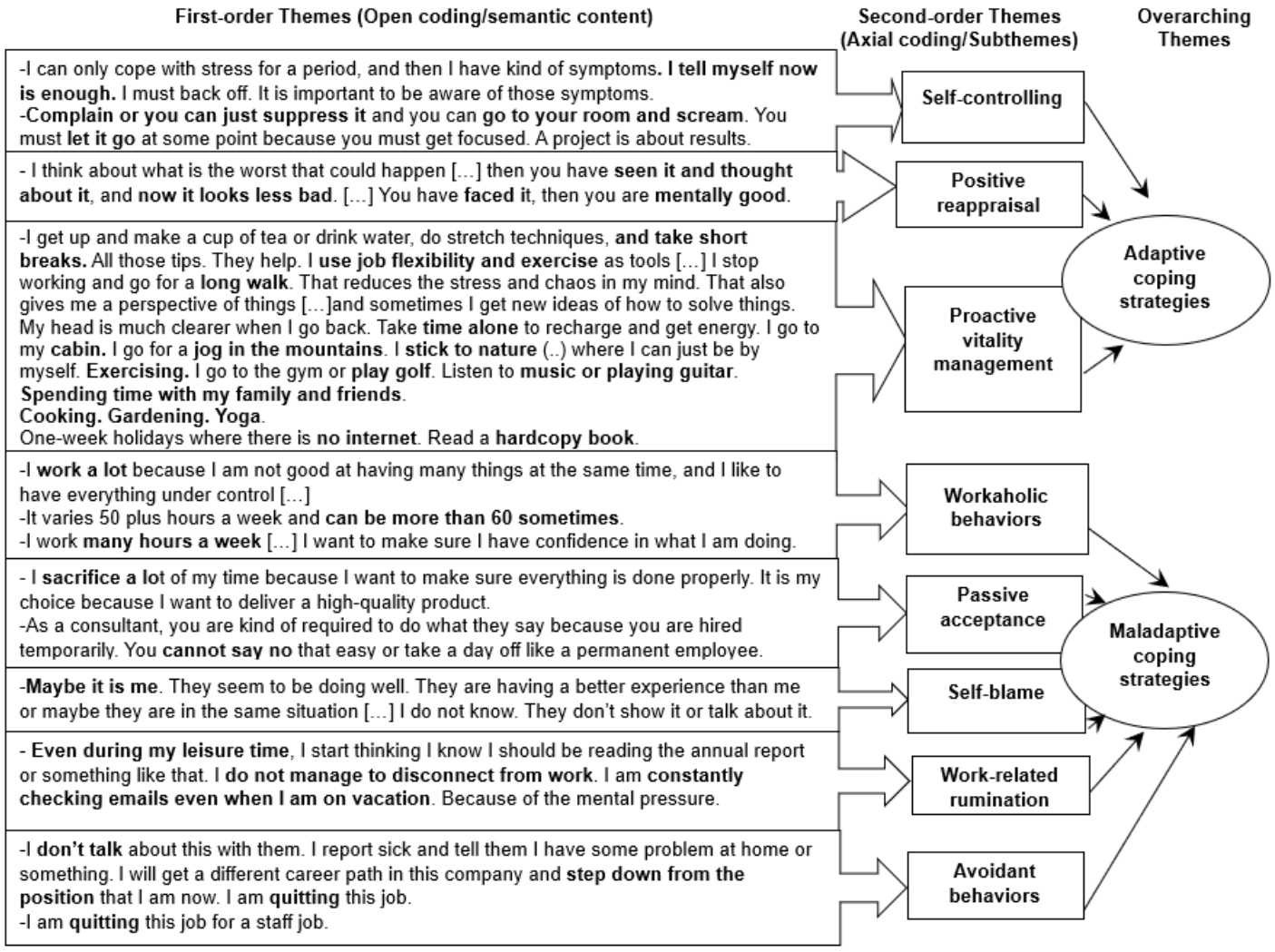
The data analysis proceeded in five steps:

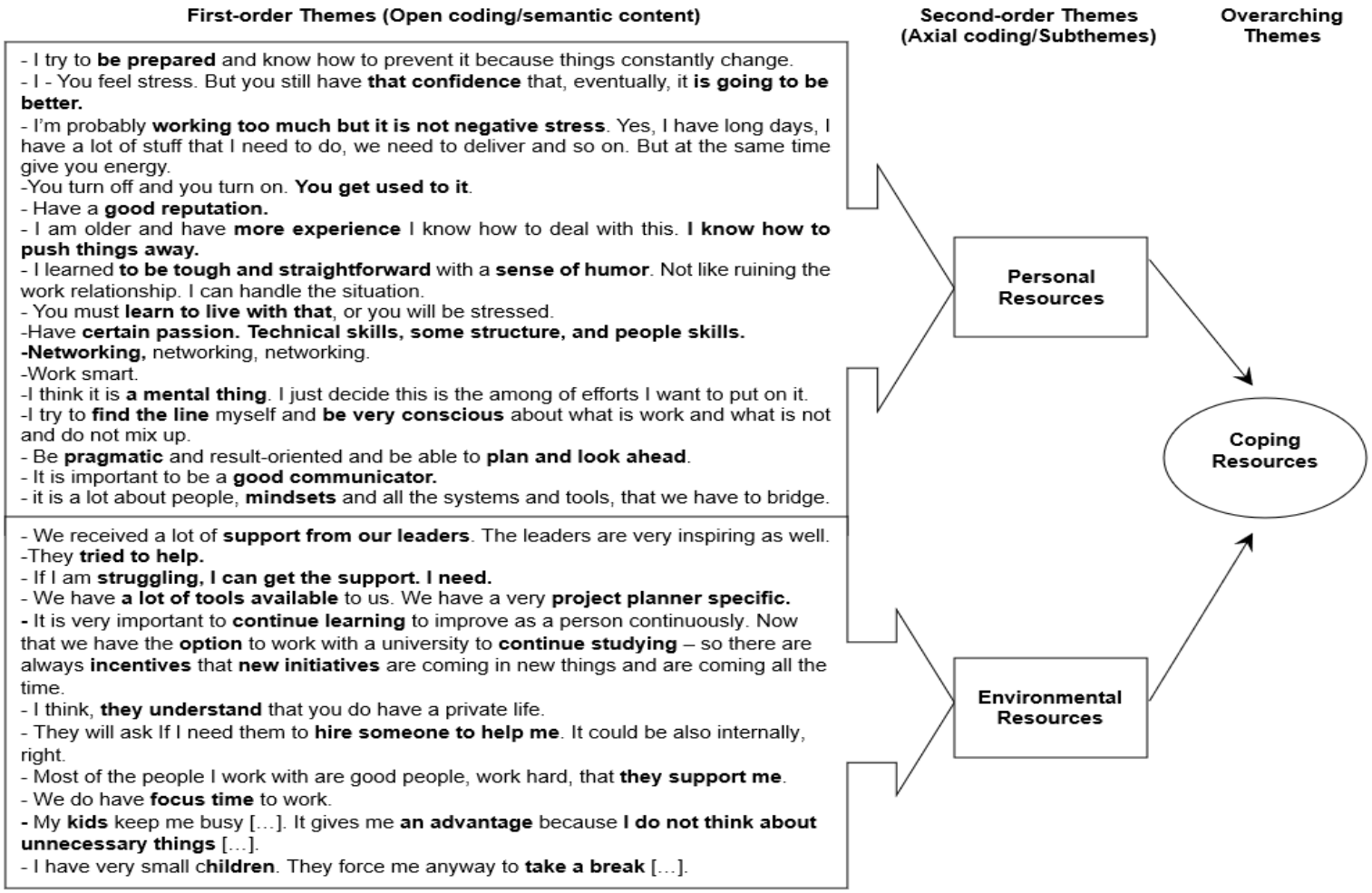
1. First-order themes were identified by coding the interview transcripts using the qualitative data analysis software NVivo 12.
2. Second-order themes were generated by comparing the first-order themes and clustering them into categories.
3. The second-order themes were further broken down into smaller subthemes to obtain a finer-grained understanding of the findings.
4. The most relevant themes were distilled by compiling the paragraphs from step three and summarizing them. This resulted in the elimination of some themes in the process of data reduction, and final labels for the aggregated dimensions were chosen.
5. The major interpreted findings were written up.

Figure 1 depicts an example of the coding of the data moving from first-order themes to second-order themes and aggregated dimensions. To prevent distortion in the interpretation, the researcher conscientiously considered three factors: the interviewee's workplace, their project role, and their socio-demographic background. During the entire analysis process, the researcher went back and forth between the transcribed data and the literature on stress, individual coping strategies, and related topics (Pratt et al., 2006).

Figure 1. Data structure




First-order Themes (Open coding/semantic content)
Second-order Themes (Axial coding/Subthemes)
Overarching Themes
-I can only cope with stress for a period, and then I have kind of symptoms. I tell myself now is enough. I must back off. It is important to be aware of those symptoms.
-Complain or you can just suppress it and you can go to your room and scream. You must let it go at some point because you must get focused. A project is about results.
- I think about what is the worst that could happen [...] then you have seen it and thought about it, and now it looks less bad. [...] You have faced it, then you are mentally good.
-I get up and make a cup of tea or drink water, do stretch techniques, and take short breaks. All those tips. They help. I use job flexibility and exercise as tools [...] I stop working and go for a long walk. That reduces the stress and chaos in my mind. That also gives me a perspective of things [...]and sometimes I get new ideas of how to solve things. My head is much clearer when I go back. Take time alone to recharge and get energy. I go to my cabin. I go for a jog in the mountains. I stick to nature (..) where I can just be by myself. Exercising. I go to the gym or play golf. Listen to music or playing guitar.
Spending time with my family and friends.
Cooking. Gardening. Yoga.
One-week holidays where there is no internet. Read a hardcopy book.
-I work a lot because I am not good at having many things at the same time, and I like to have everything under control [...]
-It varies 50 plus hours a week and can be more than 60 sometimes.
-I work many hours a week [...] I want to make sure I have confidence in what I am doing.
- I sacrifice a lot of my time because I want to make sure everything is done properly. It is my choice because I want to deliver a high-quality product.
-As a consultant, you are kind of required to do what they say because you are hired temporarily. You cannot say no that easy or take a day off like a permanent employee.
-Maybe it is me. They seem to be doing well. They are having a better experience than me or maybe they are in the same situation [...] I do not know. They don't show it or talk about it.
- Even during my leisure time, I start thinking I know I should be reading the annual report or something like that. I do not manage to disconnect from work. I am constantly checking emails even when I am on vacation. Because of the mental pressure.
-I don't talk about this with them. I report sick and tell them I have some problem at home or something. I will get a different career path in this company and step down from the position that I am now. I am quitting this job.
-I am quitting this job for a staff job.
Self-controlling
Positive reappraisal
Proactive vitality management
Adaptive coping strategies
Workaholic behaviors
Passive acceptance
Self-blame
Work-related rumination
Avoidant behaviors
Maladaptive coping strategies


First-order Themes (Open coding/semantic content)
Second-order Themes (Axial coding/Subthemes)
Overarching Themes
- I try to **be prepared** and know how to prevent it because things constantly change.
- I - You feel stress. But you still have **that confidence** that, eventually, it **is going to be better.**
- I'm probably **working too much but it is not negative stress**. Yes, I have long days, I have a lot of stuff that I need to do, we need to deliver and so on. But at the same time give you energy.
-You turn off and you turn on. **You get used to it**.
- Have a **good reputation.**
- I am older and have **more experience** I know how to deal with this. **I know how to push things away.**
- I learned **to be tough and straightforward** with a **sense of humor**. Not like ruining the work relationship. I can handle the situation.
- You must **learn to live with that**, or you will be stressed.
-Have **certain passion. Technical skills, some structure, and people skills.**
-Networking, networking, networking.
-Work smart.
-I think it is **a mental thing**. I just decide this is the among of efforts I want to put on it.
-I try to **find the line** myself and **be very conscious** about what is work and what is not and do not mix up.
- Be **pragmatic** and result-oriented and be able to **plan and look ahead**.
- It is important to be a **good communicator.**
- it is a lot about people, **mindsets** and all the systems and tools, that we have to bridge.
- We received a lot of **support from our leaders**. The leaders are very inspiring as well.
-They **tried to help.**
- If I am **struggling, I can get the support. I need.**
- We have **a lot of tools available** to us. We have a very **project planner specific.**
- It is very important to **continue learning** to improve as a person continuously. Now that we have the **option** to work with a university to **continue studying** – so there are always **incentives** that **new initiatives** are coming in new things and are coming all the time.
- I think, **they understand** that you do have a private life.
- They will ask If I need them to **hire someone to help me**. It could be also internally, right.
- Most of the people I work with are good people, work hard, that **they support me**.
- We do have **focus time** to work.
- My **kids** keep me busy […]. It gives me **an advantage** because **I do not think about unnecessary things** […].
- I have very small **children**. They force me anyway to **take a break** […].
Personal Resources
Environmental Resources
Coping Resources

3.5. Establishing the trustworthiness of the data analysis

To ensure the trustworthiness of the data analysis, Lincoln & Guba (1985) guidelines were followed. First, credibility was established by faithfully representing the participants' lived experiences and aligning interpretations with the participants' intended meanings. Second, to assess transferability, i.e., the applicability of the findings to a broader context, the researcher described the data in detail and engaged with assumptions throughout the research process. Third, to ensure the reliability of the coding process, transcripts were coded immediately. Finally, data confirmability—the study's replicability by other researchers—was achieved by prioritizing reporting methods and coding procedures.

It is crucial to acknowledge the potential role of the researcher's identity (a woman of Mexican origin) in the data analysis. Reflexivity was exercised in methodological choices throughout the study, recognizing that these decisions may be influenced by personal preferences (Brown & Lewis, 2011).

4. Findings

The data analysis identified three major themes regarding participants' coping strategies for job strain and its adverse effects: adaptive coping strategies, maladaptive coping strategies, and coping resources (Table 2).

Table 2. Major themes and sub-themes

Major theme	Sub-themes
Adaptive coping strategies	job crafting, demonstrating competencies, voice behavior, seeking support, self-controlling, positive reappraisal, and proactive vitality management (PVM) efforts
Maladaptive coping strategies	workaholic behaviors, passive acceptance, self-blame, work-related rumination, and avoidant behaviors
Coping resources	future-oriented coping orientation (anticipatory/proactive/preventive), reactive (past-oriented or present-oriented) coping orientation, and personal resources (e.g., resilience and optimism)

A general opinion among the participants was that although project work can be stressful, mainly because of work overload and psychosocial risk factors (i.e., job uncertainty, bullying, and an unfavorable work environment), it is a lifestyle, constant race, game, or machine that is necessary to achieve desired outcomes. They identified as experts, key players, or drivers—the ones who deliver the results of their projects. Several internal project staff from operator companies described project work as a prestigious and highly paid occupation. They noted that only the best professionals in the market have the required personal resources and ability to cope and succeed under high-intensity, challenging work conditions. Most of the participants felt they thrived on project work.

Furthermore, participants from operator companies noted that it is easier to work (or "to sit," as they put it) in an operator company than in a supplier company, as it is the operator company that demands solutions.

As one participant put it,

"As a consultant, I am responsible for fulfilling my job responsibilities for the operator company and completing tasks assigned by my employer. Although it is normal to have to meet multiple daily objectives, the accumulation of these tasks becomes overwhelming, and time always feels insufficient. The stress comes from the combined pressure of the workload, working pace, and expectation to dedicate a significant amount of time. Furthermore, there is a constant need to demonstrate that one's contributions justify the compensation received from the operator company." (female senior project staff).

In addition, many participants emphasized the challenging work environment as a source of job strain. As articulated by one participant,

"Sort of a negative environment here as well (...) you must work quickly, and you cannot make a mistake (...) you get criticized for being wrong (...) the feedback is not constructive (...) is rude or negative and you get it all the time (...) but you accept it, it is part of the job, you get thick skin, you get used to it (...) young people get affected and show emotions like getting upset. I noticed it. But I have that element – mental toughness, if you are too soft, you see project team members in the coffee station complaining to each other [laughed]" (male senior manager).

All senior project staff mentioned job strain symptoms such as stress, fatigue, and negative emotions. However, junior staff and/or consultants reported greater mental distress, anxiety, and burnout symptoms, particularly at the beginning or end of a project's life cycle:

"Working long hours for a long period affects my health because I am not exercising that much, not eating properly maybe (…) *so, you get a bit burned out and grumpy (...). Then you get more stress, and it is hard to sleep. Then, you feel tired all the time and have very low energy; it affects your mood, and you have sort of negative thoughts. Then, you understand you can do it for a period, but after a while, you need to do regular hours."* (male junior consultant).

"*I did not get ill or anything like that, but I felt very much overloaded.*" (female senior project staff).

4.1. Adaptive coping strategies

Most of the participants described adaptive coping strategies (Table 2) to effectively deal with job strain and change the cause of stress (e.g., work overload) or adverse work-related situations (e.g., workplace bullying or sexual harassment).

4.1.1. Job crafting

Job crafting is identified as an adaptive coping strategy with a pro-active (future-oriented) dimension. Job crafting refers to the proactive and independent actions taken by employees to modify different aspects of their role, encompassing task boundaries (i.e., type or number of activities), relational boundaries (i.e., whom one interacts with at work), and the cognitive boundaries (e.g., how one sees the job) of their role (Wrzesniewski & Dutton, 2001). Self-initiated task crafting was evidenced by several participants from the operator companies, who articulated a propensity for autonomously making minor adjustments to project-related tasks. For instance, they proactively negotiated with their managers to optimize workload allocation and task prioritization, ensuring timely project completion and avoiding unfavorable situations that might compromise their well-being and job performance:

"I mitigate stress by planning properly, scheduling my work, and getting routines, so in this practical way, I arrange my workday to be able to handle the tasks and my workload." (male senior project staff).

"I have an open and honest discussion with my managers (…) *and tell them I am far too loaded with work. I cannot cope with everything and come up with proposals* (…). *I can prioritize this, but then I need to stop this.*" (male senior manager).

The relational dimension of job crafting was evident when the participants discussed strategies for establishing support networks with managers. This relational strategy gave them access to crucial coping resources, such as support and critical information, to facilitate problem-solving, reduce stress or uncertainty, and address workplace stressors effectively. As a male senior project worker with ten years' experience put it,

"You have to be a people person; you have to speak to key people to gather information and build the relationships with those responsible for work (…) *if you speak to them, it is much easier."*

Nearly all participants indicated a reliance on mental resilience to manage work-related stress, demonstrating the cognitive dimension of job crafting. They consistently reframed project-related demands positively as challenges, providing opportunities for professional growth instead of threats. The participants reflected on the favorable aspects of project work, recognizing its benefits to their professional growth and skills development:

"You are assigned a variety of responsibilities and work within a group. If you make a mistake, it becomes very visible, and people will inform you, so you have to learn quickly. It can be stressful (…)*, but I grow and significantly build up my knowledge."* (male senior project staff).

4.1.2. Demonstrating capabilities and increasing visibility

Demonstrating capabilities and increasing visibility was mentioned as a strategic professional development approach to deal with job strain (e.g., psychological distress, anxiety) caused by job uncertainty:

"I have learned from mistakes from my past work experiences (…)*, and some companies have a limited emphasis on consultants. So, I independently developed the skills and competencies to progress in my career and differentiate myself from other consultants."* (male senior consultant).

4.1.3 Voice behavior

Some participants used voice behavior as an active and successful coping strategy to deal with work-related stress caused by project and work overload in the workplace:

"Recently, I took the matter to higher-ups and spoke with top managers. I shared details about ongoing issues, complained, and requested a transfer (…)*."* (female junior project staff).

4.1.4. Seeking support

Most participants sought instrumental and social support within the workplace or personal social networks when stressed. Several noted that they usually shared their thoughts and feelings about project problems or stressful situations at coffee stations or by contacting trusted colleagues. The goal of seeking workplace social support was to share their feelings and gain reassurance by seeking confirmation of their performance. However, some participants noted that project team members, including managers, might be equally busy or busier and face similar demands and challenges, making it difficult to request instrumental support.

"It helps to have someone who is having the same experience you can discuss with, but we also have some kind of open relationship with management, so we could go and talk to them as well. But, you know, you get "kind of support"; you get some support, but they say, ok, we understand the situation, but after this project, things will be better, you know (…) *a lot of good intentions but the reality is different* (…)

the managers also have managers that are pushing them, you know." (male senior project staff).

"All kinds of talks…all people talk. It depends. Some days, you can emphasize positive things that are going on, or sometimes, you can talk about something negative that is going on. I just want to get some empathy from the other person. Like- you feel better." (senior project staff).

Other participants commented that the assistance was sometimes insufficient, leading them to seek support from their professional networks outside the organization. Moreover, most female participants sought emotional support from family members or friends outside the organization when facing job strain. Participants who used this strategy emphasized the positive outcome of not only having someone to talk to but also receiving emotional and social support:

"*My husband works in the same industry; he also experiences work-related stress. It helps that we can talk about it. We are related and watch over each other."* (female senior project staff).

4.1.5. Self-controlling

Many participants noted the value of "drawing the line" (as they put it) by self-controlling cognitive and emotional boundaries to overcome work overload and job strain responses, such as mental fatigue and negative emotions:

"You need to have an honest conversation with yourself and decide where the limit is. How much am I willing to give from myself (…) *because I think people here are very driven. It can be difficult to say, ok, now I need a break* (…) *it is not a weakness. It is more like self-care."* (female senior project staff).

Some male participants employed emotional regulation and professional conduct when experiencing job strain (e.g., negative affect):

"I am generally quite relaxed. I usually do not express my frustration, and even when I do, it is infrequent. You know, ultimately, it is just a job, not my life." (male senior manager).

4.1.6. Positive reappraisal

Most participants employed positive cognitive reappraisal tactics to regulate negative emotions caused by perceived stressful situations at work:

"Being aware that is not personal, nothing is personal, it is pure business, and if you start taking things personally, things will be very wrong. That adds to your stress level, so it is important to be aware of this and positive thinking [smiled]." (male senior manager).

4.1.7. Proactive vitality management

Positive distraction, recovery, healthy behaviors, and other self-care activities were cited as crucial coping strategies by the participants who reported adaptive coping. They used these activities to prevent or mitigate job strain symptoms, clear their minds, get new ideas, successfully recover from work, cognitively detach from work, develop their coping resources, and maintain a good mental state to handle the causes of job strain or other stressors. This strategy aligns with the concept of proactive vitality management (PVM), defined as an individual's "goal-directed behavior aimed at managing physical and mental energy to promote optimal functioning at work" (Op den Kamp et al., 2020, p.10). Positive distractions were particularly prevalent among the participants from the operator company and included spending time with family or friends, volunteering, watching a movie, making music, or listening to music. Healthy behaviors and self-care activities, such as regular exercise, yoga, spending time in nature, or gardening, were the most common forms of PVM coping strategies mentioned by the participants:

"My medicine is very easy. I know that if I have a bad sleep one night, I just go for a long run the day after. You get physically tired, and you clear up; it is like resetting." (male senior manager).

Participants who adopted PVM found that they could use more adaptive coping strategies afterward. Adaptive coping strategies such as PVM helped enhance their energy levels, self-awareness, self-compassion, and self-care (Op den Kamp et al., 2020). Subsequently, they were able to mitigate job strain symptoms and self-regulate behavior and boundaries, particularly their cognitive and emotional boundaries:

"I also have a hobby that helps me a lot. Skydiving. It is like blowing away my mind, you know. This activity is very effective in coping with work-related stress [laughed]. While it is kind of a stressful activity itself, it allows me to distance myself from work-related pressures. It is a refreshing break for my mind and allows me to release accumulated emotions (…) *only yoga or meditation is not enough, is not the same."* (female junior consultant).

4.2. Maladaptive coping strategies

Junior staff, consultants, and project staff who strived for excellence or were concerned about the quality of their work frequently reported using maladaptive coping strategies to deal with high workloads, time pressure, and job strain, such as extreme work, self-blame, work-related rumination, passive acceptance, and avoidant behaviors.

4.2.1. Workaholic behaviors

Participants who reported workaholic behaviors were willing to endure job strain symptoms in an attempt to alleviate, escape, or withdraw from work-related and personal demands. Many of these participants stated that they could not avoid work overload, were workaholics, strive for perfection, had not considered their health, and neglected early symptoms of stress:

"I want to deliver the best when the deadline is given, which is very important to me, so I am willing to sacrifice a lot. I have always been like that (…) *Until I had a "wake-up call." I got sick. I had earlier stress symptoms, but I ignored them because I did not have time to stop and think about them* (…). *I was working long hours every day, including the weekends* (…) *I was working a lot on different projects. Until one day, I could not walk downstairs in my house* (…). *I was sick for a full year* (…) *I learned the hard way!"* (female senior project staff).

"Whenever I have been in this kind of situation, I think, every single time [pause], I just go into a survival mode (…). *Then, I end up sleeping bad hours, eating bad food, and not exercising* (…). *I am not good at holding a nice healthy distance to it [...]. I do not really have any good coping mechanism."* (male junior consultant).

4.2.2. Self-blame

Other participants tended to self-blame in response to stress, uncertainty, internalized responsibility, and pressure to deliver expected results:

"You want to deliver something, and you cannot (…) *you try to fix something, and things are not progressing* (…) *then you start blaming yourself, and you start working overtime* (…) *then you start working for other people* (…)*. It is easy to become a workaholic here. I used to work a lot until I got sick. I burned out and ended up in a hospital* (…) *due to stress."* (male senior consultant).

4.2.3. Work-related rumination

Participants who reported ruminative thoughts on work-related problems during off-job time primarily ruminated about work-related stressors, their perceived effect on their well-being, and how to solve them:

"I am constantly checking my emails even when I am on vacation. I have that mental pressure. I start thinking the first thing I will do when I return to the office is this, this, and this. So that triggers stress and adds more stress to my already stressful life." (female senior consultant).

4.2.4. Passive acceptance

Participants who experienced negative emotions due to organizational demands also mentioned passive acceptance. These employees seemed to opt for this coping strategy because they accepted job strain as part of the job and impossible to eliminate:

"*Nothing works* (…) *because I always have too many things to do* (…) *I have to work all the time* (…) *because I have to deliver, I have to meet the deadlines."* (female junior project staff).

4.2.5. Avoidance behaviors

Avoidant or negative distancing strategies were reported by participants who adopted extreme work, neglected job strain symptoms, strived for excellence, or tended to feel concerned about their overall job performance:

"I do not know if I am coping with that situation. I will move to another unit soon (…) *or quit because I have zero work and life balance* (…) *I have a lot on my plate."* (female senior project staff).

4.3. Coping resources

Most of the participants who employed adaptive coping strategies also emphasized their personal resources, such as coping orientation resilience, self-efficacy, optimism, hope, consciousness, education, and extended project work experience:

"*Well, I guess one thing is to handle, and the other is you know how to prevent this. Right? (...) having good communication with the people (...), so I try to know what is going on (...) so I would, in most cases, know- what is coming. So, I am prepared. So that is one quite important thing. I think- just try to be prepared. (...) You have to learn to live with that, or you will be stressed [laughed]."* (female senior project staff).

Environmental resources such as support from the organization, leaders, and family and friends were also highlighted as crucial coping resources to proactively deal with project work challenges and job strain symptoms:

"What works better than anything is the support you get from your bosses. That makes a big difference. Sometimes you have a boss who is always busy and (...) does not have time to coach you or give you training, which is very important because (...) every company has a different way of working." (senior male consultant).

Table 3 summarizes the identified coping strategies, including coping time orientation and potential cost and benefits, and provides examples. Figure 2 presents a conceptual framework based on the findings. The conceptual framework is based on TMS (Lazarus and Folkman, 1984), CMR-E (Lazarus, 1991), the JDR

and self-regulation model (Bakker & de Vries, 2021), and past research on stress management and time-orientation coping. The findings of this study show that personal resources, such as time orientation, mental resilience, and support from work and nonwork domains, influence the coping processes (e.g., appraisal and reappraisal) and coping strategies employed by employees engaged in multiple projects simultaneously. In adopting these strategies, project workers aim to anticipate, prevent, avoid, or alleviate job stress responses caused by situational and personal demands in project environments. The stress response may also be influenced by coping resources, which, in the long run, impact overall individual well-being.

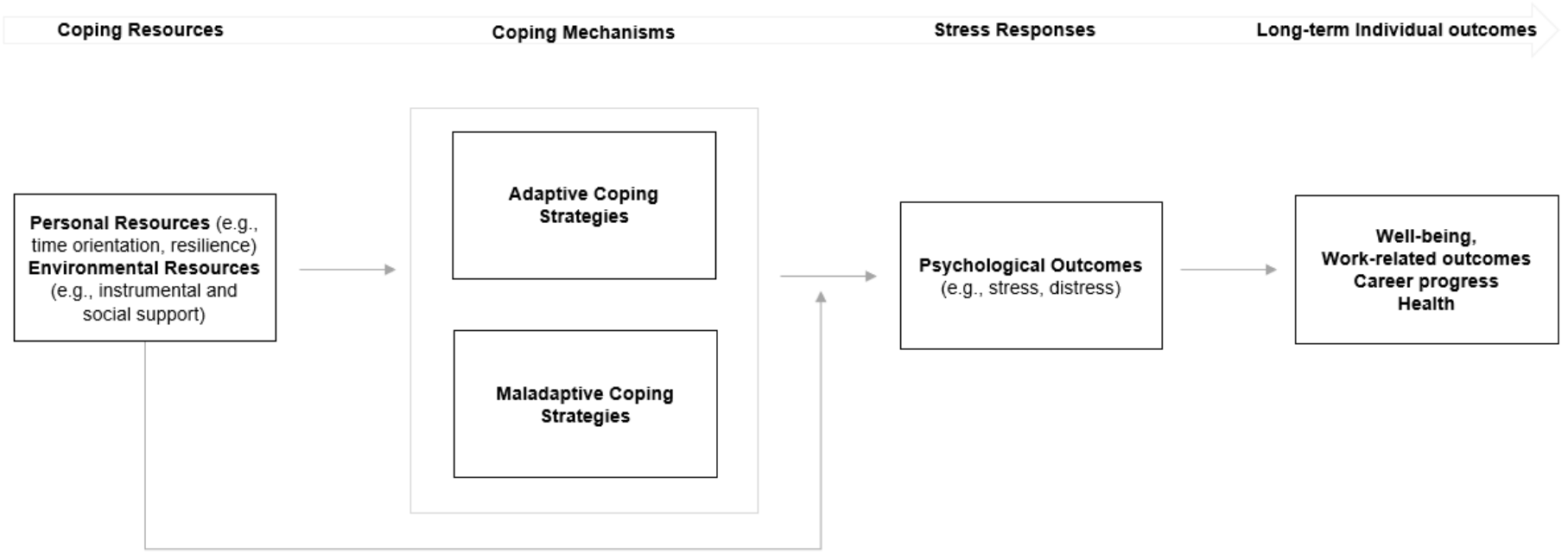
Table 3. Summary of the identified coping strategies.

Coping Strategy	Description	Representative Quotation(s)	Time orientation	Benefit (+) Cost (-)
Job-related task crafting	Proactive, independent actions by employees to modify task boundaries of their role (e.g., type or number of activities) (Wrzesniewski & Dutton, 2001)	*"Being active toward the project. Try to* ***move something like deadlines*** (…)*"* (female senior project staff)	Future	Utilize job resources (+) Avoid or prevent job strain (+)
Job-related relational crafting	Proactive, independent actions by employees to modify relational boundaries of their role (e.g., whom one interacts with at work) (Wrzesniewski & Dutton, 2001)	*"I* ***talk****, talk, talk* (…)*, and because I talk, I can meet many people. Especially* ***people in management positions.***" (female junior project staff).		Improve collaboration (+) Acquire and/or strengthen professional support networks (+)
Job-related cognitive crafting	Proactive, independent actions by employees to modify cognitive boundaries of their role (e.g., how one sees the job) (Wrzesniewski & Dutton, 2001)	*"It is* ***stressful.*** *It requires constant prioritization and moving to new projects with different managers and team members each time. The* ***constant change*** *and team members not performing as expected can be* ***discouraging***. (…) ***But I enjoy it*** *as it* ***pushes you to the next level.****"* (female junior project staff)		Mental resilience (+)
Demonstrating capabilities and enhancing visibility	Self-improvement, enhancing new competencies, acquiring new skills and irreplaceability, and showcasing one's skills and competencies to establish credibility and trust.	"***Showing*** *that I am a good employee.*" (male junior consultant) "***Being predictable****. People tend to trust you with your deadlines.*" (female junior consultant)	Future	Employability (+) Gaining trust (+) Self-confidence (+) Career growth (+)

Voice behavior	"[A]ctively and constructively trying to improve conditions through discussing problems with a supervisor or co-workers, taking action to solve problems, suggesting solutions, seeking help from an outside agency like a union, or whistleblowing" (Rusbult et al., 1988 p. 601)	*"I **demand more from my company**. I just let them know I cannot work 24/7 in that period. So, we need to plan."* (female senior project staff) ***"I contact my union,** talk to them and ask for advice or what can I do in this case."* (female junior project consultant)	Present/ Future	Get instrumental support (+) Protect personal resources (+)
Seeking support	Solicitation of support from others in addressing problems and planful problem-solving to tackle problems that induce stress (Lazarus & Folkman, 1984)	*"I **talk about it mostly with my family members and closest friends** who are neutral, a person who can say you are wrong, or you are right. People who can say it directly."* (female junior project staff)	Present/ Future	Mitigate stress (+) Enhance personal resources (+)
Self-controlling	"Inhibition of the expression of true feelings to regulate negative responses when facing unmanageable demands" (Trougakos et al., 2020, p. 1236)	*"**Deciding no**, **I am not going to think about it and put it down in a worry list;** then I am not worried anymore, you know, it's gone."* (female junior consultant) *"I have been **learning over the years** that taking on too much responsibility and too much work is stressful. So, I **learned to say no** because it is not your work who will come to visit you when you are sick."* (female project staff)	Present/ Future	Adaptability (+) Gain personal sense of control (+)
Positive reappraisal	"[N]egotiat[ing] stressful situations by taking an optimistic attitude, reinterpreting what they find stressful, and making active efforts to repair bad moods" (Gross & John, 2003, p, 360)	*"**Stretch do not stress.**"* (female senior manager) *"**Positive thinking** that this is just like a walk in the park, but then it will be over; it is just a matter of time.*" (female junior project staff)	Present/ Future	Mitigate job strain (+) Regulate emotions (+) Cognitive flexibility (+)

Proactive vitality management (PVM)	"Goal-directed behavior aimed at managing physical and mental energy to promote optimal functioning at work" (Op den Kamp et al., 2020, p.10)	*"I have that issue (…) I became a workaholic. So, I **engaged** in a **volunteering job**, which is quite demanding, but […]it helps me get out of the office […]it helps me to **find the balance**."* (female senior project worker)	Present/ Future	Recovery (+) Positive affect (+) Clearer, more rational decisions (+)
Workaholic behaviors	"Spending so much energy and effort on work that it impairs private relationships, spare-time activities, and health" (Andreassen et al., 2012, p. 265)	"*I arrived at the office at **06:15 a.m. and stayed until 9:00** p.m. or more*" (female senior project staff) "*I **do not have a personal life** anymore (…). I work and go to sleep, work, and go to bed, work and to sleep.*" (female senior project staff)	Past/ Present	Job strain (-) Physical and mental health problems (-) Resignation (-) Loneliness (-)
Passive acceptance	"Accepting the reality of a stressful situation" (Carver et al., 1989, p. 270)	*"I have to **go home and keep working** to progress in my work. I also have to do things for my employer (supplier company). It is work overload."* (female senior consultant)		Overwork (-) Fatigue (-) Turnover intention (-)
Self-blame	Thoughts that the responsibility for the experienced situation belongs to her/himself and that s/he is the one to blame for mistakes (Carver et al., 1989)	*"**Disappointed or angry with myself** or whatever, if I was not able to deliver it."* (male junior consultant) *"(…) it is the stress that people put on you. They start complaining about everything, and **they do not take responsibility"** (female project staff)*	Past/ Present	Negative affect (-) Greater stress (-)
Work-related rumination	Persistent dwelling on negative emotions and their potential repercussions, coupled with an inability to distance oneself from work-related stressors. (Nolen-Hoeksema, 2000)	*"(…) fast pace, some expectations, thousand things to do, deadlines, stress* (…) *they **do not let you sleep** during the night because it is stressful.*" (male junior consultant)	Past/ Present	Unable to detach from work (-) Greater stress (-) Sleep problems (-)
Avoidant behaviors	Prevention of stressful events by not facing facts and self-deception (Jacobs & Pienaar, 2017)	"*I am **searching for another** job outside of this industry. I will just quit. That is the solution." (female junior project staff).* *"I don't deal with stress in a good way. I **just try to avoid it**"* (male senior project staff)	Past/ Present	Turnover intention (-) Disengagement (-) Restricting communication (-)

Figure 2. Conceptual Model



5. Discussion

The present study enhances our understanding of the coping strategies used by project staff and the factors—aside from work motivations—that impact the choice of strategy. The findings reveal that senior project workers utilize adaptive coping strategies to anticipate and prevent workplace stressors and their adverse consequences, whereas junior project workers and individuals with perfectionistic tendencies employ maladaptive coping strategies in response to overwhelming job and personal demands. Beyond showing how project workers navigate project work challenges and their consequences, the study underscores the pivotal role of coping time orientation (past/present or future) and other personal resources, such as mental resilience, self-efficacy, optimism, hope, and self-control, in shaping coping mechanisms. Hence, coping resources facilitate or constrain the adoption of adaptive coping strategies by project workers.

5.1. Adaptive coping strategies

Senior project workers employ job crafting by negotiating with managers for workload optimization, establishing support networks, and reframing their negative perceptions about project-based work as opportunities for professional development. This finding is in line with recent research that has identified job crafting— the "changes that employees make to balance their job demands and job resources with their abilities and needs" (Tims et al., 2012, p. 174)—as an effective coping mechanism in addressing abusive supervision (Masood et al., 2021) and other unfavorable work conditions (Van Hoff and Van Hoff, 2023). Proactive coping screens the environment for future stressors and attempts to prevent them (Aspinwall & Taylor, 1997; Ouwehand et al., 2008). Thus, employees who use job-crafting techniques are proactive individuals who plan (look ahead) and use effective coping strategies to prevent or minimize the harmful effects of project work stressors. Proactive coping strategies are aided by personal resources such as self-efficacy, goal orientation, and future time orientation (Ouwehand et al., 2008). According to TMS, individuals choose to tackle, tolerate, or escape perceived stressors after assessing whether their coping resources are adequate or inadequate and whether the situation is manageable or uncontrollable (Lazarus & Folkman, 1984).

Junior project workers and project consultants cope with workplace stressors (e.g., job insecurity) and job strain responses by demonstrating capabilities and enhancing visibility. The participants highlighted strategic professional development strategies, such as proactive self-development of skills, as necessary for project career progress and emphasized the need for continuous learning, credibility, indispensability, and trust in project environments. Operator project workers and female project staff identified voice behavior (e.g., active ways of dealing with conflict; Rusbult et al., 1988) as an adaptive coping strategy that they employ to address work overload, gain instrumental support from top management, and solve psychosocial problems. Pandey et al. (2021) emphasized the importance of coping resources such as consciousness and perceptions of support from managers and HR staff. These factors empower employees to express concerns through voice, effectively preventing the escalation of work-related issues.

All participants mentioned seeking support both within and outside the organization as an active coping strategy. For the participants, workplace social support involved sharing thoughts with colleagues. However, some participants with non-managerial positions acknowledged challenges in obtaining instrumental support (e.g., seeking advice, assistance, and information) in busy project environments. Supervisor support can mitigate stress by restraining avoidance coping strategies (Liang et al., 2022). Thus, seeking instrumental support is a proactive and anticipatory coping strategy that helps employees cope effectively with workplace stressors and prevent or mitigate adverse outcomes.

The analysis also showed that the participants used self-control of cognitive and emotional boundaries by adopting self-awareness, learning to say no, and emotional regulation to mitigate work-related stress and its negative consequences. Positive reappraisal was identified as a critical cognitive strategy that helps project workers reframe their negative thoughts when experiencing job strain (e.g., negative affect). These findings are supported by the JD-R and self-regulation model, which suggests that employees with self-regulation resources can reduce job strain symptoms and protect themselves from counterproductive coping behaviors and thoughts (Bakker & de Vries, 2021). Moreover, TMS (Lazarus & Folkman, 1984), CMR-E theory (Lazarus, 1991), and the JD-R and self-regulation model (Bakker & de Vries, 2021) posit that adaptive P-FC and E-FC strategies can

be effective for coping with job strain and its consequences by reducing stress levels, eliminating the stressful situation more quickly, and promoting self-regulating cognitive strategies (e.g., emotional regulation and positive reframing). Thus, individuals who adopt these strategies can prevent job strain instead of reacting to it.

Finally, PVM**,** which encompasses positive distractions, healthy behaviors, recovery activities, and self-care, emerged as a crucial coping strategy employed by most participants. To maintain optimal functioning at work, they engaged in activities such as having fun with family and friends, volunteering, or physical exercise. These findings align with those of Op den Kamp et al. (2020), who report that employees who adopt PVM are more capable of using adaptive coping strategies to mitigate job strain symptoms because PVM enhances coping resources such as energy levels, self-awareness, self-compassion, and health. This finding aligns with TMS, which suggests that adequate EF-C strategies (e.g., emotion regulation) are essential for adopting adaptive cognitive strategies such as positive reappraisal.

5.2. Maladaptive coping strategies

Some participants, particularly junior project staff and those with perfectionistic tendencies, engaged in workaholic behaviors such as excessive dedication to work, often at the expense of their well-being, health, and other aspects of their private lives. Such negative behaviors indicate a potential lack of coping resources needed to engage in adaptive coping strategies. These findings align with those of Delisle (2020), who notes that project workers in multi-project contexts use maladaptive coping strategies that make them more tired, increase mistakes, and deplete their energy until breaking points lead to sick leave or withdrawal. In addition, Berg and Karlsen (2013) find that perfectionist tendencies, particularly concerns about not being able to meet or exceed the expectations set by a high-performance culture, influence the coping strategies adopted by project workers. Thus, both organizational and personal demands influence the selection of coping strategies.

Furthermore, junior project staff and consultants reported self-blame, reflecting internalized responsibility, negative self-talk, and mental pressure. Prior research has emphasized that people who tend to blame themselves may experience feelings

of guilt and have a lack of self-control skills, which can put them at higher risk of job strain (Sparato et al., 2016; Trougakos et al., 2020). Ruminative thoughts about work-related problems during off-job time were also prevalent among those employing maladaptive coping strategies. This rumination negatively impacted their ability to detach from work-related strain, emphasizing the importance of self-controlling cognitive and emotional boundaries and tactics. Past research has emphasized that individuals demonstrating a ruminative coping style, characterized by repetitive and passive contemplation of negative emotions and a focus on job strain symptoms, are at an increased risk of developing mental health problems (Nolen & Hoeksema, 2000). Furthermore, junior project staff and consultants noted passive acceptance of project-related stressors as an unavoidable part of project-based work. This acceptance hindered active problem-solving, perpetuating the adverse effects of job strain. Past research has found that individuals who use passive acceptance as a coping strategy tend to prioritize work over their family or free time activities (Anand & Vohra et al., 2022).

Finally, overcommitted individuals or those striving for excellence reported avoidance behaviors, including thoughts of quitting, or moving to another unit voluntarily. Such negative distancing strategies can contribute to long-term negative consequences. Avoidance behaviors are a maladaptive coping strategy for managing work-related stress, especially for project workers who need to handle sequential tasks on a tight schedule (Liang et al., 2021). Past research has emphasized that avoidance coping may be a type of "defense mechanism" employed to protect oneself from the unpleasant emotions of the stressor and is associated with fewer personal and social resources (Haynes and Love, 2004). These findings are in line with TMS, which suggests that in the long run, negative self-talk or trying to avoid negative emotions pushes employees to escape the perceived stressor or give up (Folkman & Moskowitz, 2004; Lazarus & Folkman, 1984). These findings also align with the JD-R and self-regulation model (Bakker & de Vries, 2021), which proposes that employees lacking self-regulation ability and coping flexibility experience high levels of job strain due to an imbalance between job demands and resources.

5.3. Coping time orientation

The analysis revealed that the time orientation of coping strategies, i.e., future, past, or present, is a crucial personal resource that influences the appraisal of stressors and the adoption of coping strategies. The ability to imagine and plan for future possibilities may facilitate the detection of potential stressors (Aspinwall & Taylor, 1997) and initiate constructive actions, creating opportunities for growth and striving for improvement, thereby building resources for progress and enhanced functioning (Schwarzer and Tauber, 2002). Research in psychology has found that future-oriented coping (F-OC) allows individuals to "proactively prepare for events by achieving realistic goals or developing required skills, or by gathering resources to help overcome identified threats, thus reducing the potential for negative outcomes" (Raper & Brough, 2021, p. 187). Proactive, preventive, or anticipatory coping strategies are future-oriented (Eager et al., 2019). This study reveals that project workers with a future orientation and resilience individual, tend to proactively employ adaptive coping strategies, such as job crafting, strategic career development, seeking instrumental support, and PVM, to avoid multiple work demands and prevent unfavorable situations. This aligns with Gustavsson (2016), who finds that project workers deliberately use strategic narrowing coping strategies to avoid multiple demands and project overload. Eager et al. (2019) also suggested that time orientation is an important factor in shaping entrepreneurs' coping strategies (e.g., change, adapt, or disengage). Collectively, these observations imply that participants who employ maladaptive coping strategies may be past or present-oriented (e.g., thinking about past or present unfavorable experiences) or simply trying to survive while attempting to overcome multiple demands or escape from job strain symptoms.

6. Theoretical contributions

This study offers several contributions to theory. First, this study addresses gaps in research on project organization and multi-project management by delving into the utilization of cognitive, emotional, and behavioral coping strategies (Bowen et al., 2021; Delisle, 2020; Martinsuo et al., 2019) and the factors beyond work-related motivations that influence them (Chan et al., 2018; Tijani et al., 2021). The ways in which multi-project workers employ these strategies to navigate the challenges inherent in project work and effectively address symptoms of job strain are comprehensively unraveled. Second, this research contributes significantly to

the scholarly discourse on stress and well-being within the project management domain by offering enhanced insights into the pivotal role of coping resources in project work stress appraisals, particularly in the context of anticipated common future stressors. Last, to the best of the author's knowledge, this study is the first in the project management field to identify time orientation as a key personal resource influencing coping strategies among project workers.

7. Practical implications

The conceptual model is the first to propose a key role of cognitive and emotional coping strategies (e.g., self-control of cognitive and emotional boundaries) in the selection of coping strategies, which has important practical implications for the well-being of individual project workers, projects, and organizations. First, more attention should be given to helping susceptible project workers enhance and nurture their coping resources and adopt work-and-health balanced coping strategies (Somers & Casal, 2021). For example, employers should motivate and support vulnerable employees in both their job- and energy-crafting efforts by providing adequate job resources, offering energy-management techniques, and creating awareness of the benefits and importance of building and sustaining optimal energy levels for the next working day to enhance self-control (Kosenkranius et al., 2023 p. 11). Employers can also foster awareness of the advantages of maintaining optimal coping resources, such as future-time orientation, mental energy, optimism, and resilience. These coping resources empower individuals to handle stressors and their negative consequences more sustainably and reduce worry or rumination about work outside working hours (Kosenkranius et al., 2023, p. 11). Ultimately, this approach can contribute significantly to project workers' long-term well-being and health.

Second, future interventions aimed at changing maladaptive coping patterns should seek to target the psychological and social aspects influencing the selection of coping strategies and their outcomes. For instance, human resource management specialists and organizational leaders should implement training initiatives that target prejudices about mental health problems (Brouwers et al., 2020), burnout symptoms, and challenges in coping with job strain (Bowen et al., 2021; Zhang et al., 2023), and the coping effort itself (Nurmi, 2011). Finally, they should also develop healthier work environments where employees feel safe to make mistakes

and receive constructive feedback and empathetic support (Brouwers et al., 2020; Edmondson, 1999; Liu et al., 2023).

8. Limitations and future research directions

This study has limitations that also provide avenues for future research. First, the scope of the sample was limited to 37 well-educated people, and most were experienced project workers from a single industry living in Norway. These participants are likely to be better equipped with external resources (e.g., high levels of autonomy and work flexibility) and personal resources (e.g., mental resilience) that make it easier to adequately deal with job strain and its possible detrimental outcomes.

Moreover, the data on coping strategies were collected from participants' self-reports. The participants might have underreported the use of socially undesirable coping strategies to sustain their professional identities or project a positive image in line with the stereotype of project workers as "tough" professionals (Robertson and Swan, 2003). Snowball sampling may also affect the results' representativeness and generalizability to other industries and countries. Every attempt was made to limit bias and include participants from different companies with diverse project roles, genders, experiences, employment situations, and professional and cultural backgrounds (Eisenhardt & Graebner, 2007).

Furthermore, researcher biases, including preexisting notions about the negative aspects of project work and its detrimental consequences for individual project workers, may have influenced the research process, how the interviews unfolded, and the interpretation of the interviews. A rigorous and transparent research process was followed to eliminate potential biases, including familiarity with the literature on stress and coping and allowing the data to speak for itself before introducing deductive theoretical codes. This approach provided valuable insights into the coping mechanisms that project workers use to deal with different stressors and the influence of coping orientation on the coping process and outcome.

Future research could explore the longitudinal impact of adaptive and maladaptive coping strategies and the factors influencing their adoption by project workers, which would inform organizational policies and practices. Future research

extending the findings of this study using mixed methods, multiple case studies, or quasi-experimental approaches is encouraged. Future research should also investigate the roles of national culture, personality traits, core self-evaluations, and other environmental and individual factors in coping styles. Extending the scope of the investigation to the international level by including multiple countries would be a fruitful endeavor.

9. Conclusion

This study advances project management research on coping and stress by investigating how project workers use coping strategies to deal with project work challenges and their consequences and what factors other than motivation influence the choice of strategy. The findings reveal that project workers employ adaptive and maladaptive coping strategies, and future time orientation emerged as a crucial coping resource influencing coping strategies. Job-crafting tactics, PVM, and support-seeking are the most common adaptive coping strategies, which are used mainly by male project workers from operator companies. By contrast, maladaptive coping strategies are predominantly employed by female project workers, junior staff, and those with perfectionistic tendencies. This research contributes valuable insights for tailoring interventions and healthier support mechanisms to multi-project settings.

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Appendix 3A. Interview guidelines

Sequence	Aim	Questions	Conceptual Basis for Question
1	Build trust and establish the participant's background	Can you tell me briefly about yourself? For example, what is your age and position, and in which project(s) do you currently work? How many years have you been working on projects?	
2	Understand what the participant is coping with in their project context and the project worker's role.	What do you think about project-based work? What is your experience working on projects? *Follow-up questions:* Could you say something more about that? Can you give me a more detailed description of what happened?	(Nurmi, 2011) (Lindgren and Packendorff, 2014)
3	Identify the coping strategies that the participant uses in dealing with project-related stressors.	Can you discuss this challenging situation, job stress, or those feelings? How do/did you handle that challenging/stressful situation? or How did/do you cope with work-related stress? or What did/do you usually do when you feel like that? *Clarifying questions*: Can you tell me more about that? And in what way?	(Bowen et al., 2014) (Jepson et al., 2017)
4	Get more insights.	We have now gone through all the questions; would you like to add something else to our conversation?	

Chapter 5. Conclusion

This dissertation aims to enhance conceptual and empirical knowledge of the negative aspects of projectification, their detrimental consequences for individual project workers' psychological well-being and job performance, and how project workers can mitigate and adequately cope with project work challenges and job strain symptoms. Project work challenges and individual project workers' coping resources, cognitive mechanisms, and strategies for sustainably preventing, mitigating, and coping with workplace stressors and job strain are explored. This exploration comprises three studies: conceptual, quantitative, and qualitative. This chapter synthesizes these studies and presents a summary of the implications, limitations, and recommendations for future research.

5.1. Concluding synthesis

"*The dark side of projectification: a systematic literature and research agenda on the negative aspects of project work and its implications for individual project workers*" (**Study 1, Chapter 2**; co-authored by Andreas Wald and published in the *International Journal of Managing Projects in Business*) systematically examines the literature on negative aspects of project work and their consequences for individual project workers. This stream of literature has increased considerably over the past two decades. These studies are predominantly from developed nations, published in project management journals, and based on quantitative, cross-sectional designs. Socio-psychological and management theories, including the job–demand resources (JD-R) model and leadership theories, are the prevalent frameworks used to explore dimensions such as job burnout, leadership competencies, abusive supervision, and project-based career challenges.

Frequently examined individual outcomes include job stress and various work-related aspects, such as turnover. At the macro level, detrimental consequences are notably associated with national culture, structural inequalities, industry characteristics, and work-family conflicts. At the meso level, negative aspects of project work are linked to organizational complexities, paradoxical tensions, managerial practices, political influences, project culture, ethical dilemmas, and psychosocial work factors, such as poor work environments and job insecurity. Additionally, organizational and project demands emerge as crucial determinants of individual outcomes. At the micro level, individual attributes, dark personality

traits, and inadequate levels of personal resources are emerging determinants of the dark side of projectification. Individual factors such as workaholism, organizational commitment, and work-life conflicts are identified as potential mediators of the connection between project work-related demands and adverse individual well-being outcomes, while social support, coping strategies, and emotional intelligence (EI) are among the potential moderators.

Study 2 (Chapter 3), titled "*Mitigating the negative aspects of project work: The roles of psychological capital and coworker and family support*," further explores the findings of **Study 1** by addressing calls for more research on project workers' health and well-being (Aguilar Velasco & Wald, 2022; Reatze et al., 2018) and, more specifically, the influence of social and psychological factors on the job strain–job performance relationship (An et al., 2019; Pinto et al., 2016; Yang et al., 2017). **Study 2** investigates the influence of workplace and family support on psychological capital (PsyCap) and how these essential coping resources influence the relationships between perceived stress, job burnout, and individual job performance. Hypotheses are developed by drawing on the conservation of resources (COR) theory (Hobfoll, 1989, 2002, 2011), the JD-R model (Demerouti et al., 2001; Bakker et al., 2004), and other scientific work. Data were collected from project professionals across economic sectors in Mexico and Norway using a cross-sectional online survey and analyzed using structural equation modeling.

The findings confirm that environmental resources, such as workplace and family support, and PsyCap play crucial roles in preventing and mitigating the negative aspects of project work, thereby averting potential detrimental consequences for individual project workers and organizations. Perceived workplace support enhances project workers' PsyCap, which is a powerful cognitive resource for reducing psychological distress and burnout symptoms. Perceived workplace support also directly impacts subjective stress and job burnout. This implies that project workers who have fewer social resources (e.g., adequate support from a direct manager, supervisor, or colleagues) and lower PsyCap levels are at greater risk of job strain and its negative repercussions, such as poor job performance. Moreover, job strain further drains individuals' resources, which are needed to adequately respond to work-related and personal demands. These findings are consistent with COR theory, the JD-R model, and previous research (e.g., Leung et al., 2009, 2011).

In further alignment with the JD-R model and COR theory but contrary to Todt et al. (2018), perceived family support is found to enhance project workers' PsyCap and individual outcomes at work. This finding is consistent with past research showing that family social support mitigates project workers' burnout symptoms (Lingard and Francis, 2005). Studies in sociology and psychology (e.g., Kwok et al., 2015; Cohen and Wills, 1985) have also found that family support facilitates the development of positive personal resources such as resilience, optimism, and self-efficacy and mitigates job strain symptoms. Hence, Study 2 reveals that both workplace and family support help cultivate and nurture optimal levels of PsyCap. This finding, supported by COR theory (Hobfoll, 2011), suggests resource-gain mechanisms between support and PsyCap, which surprisingly have not been explored in previous project studies.

Study 2 shows that PsyCap is strongly negatively associated with job strain responses, particularly subjective stress, and robustly positively associated with job performance. These findings are consistent with COR theory (Hobfoll et al., 2018) and Gallagher et al. (2015) and suggest that PsyCap is an essential coping resource for combatting stress and adversity in workplace contexts (Hobfoll, 2011). Employees with optimal levels of PsyCap can effectively cope with the negative aspects of project work and avoid or mitigate their detrimental outcomes.

Finally, Study 2 finds that high levels of subjective stress can lead to job burnout and, in turn, poor job performance. In accordance with the resource-depletion mechanism proposed by COR theory (Hobfoll, 2011), project workers experiencing high levels of job burnout experience the loss of crucial coping resources, leading to fatigue, inefficiency, disillusionment, and further resource drain. Interestingly, in contrast to prior studies in Sri Lanka (Senaratne & Rasagopalasingam, 2017), Study 2 does not find a direct negative impact of subjective stress on job performance among project workers in Mexico and Norway. This result aligns with the work of Leung et al. (2011), who indicate that certain levels of stress do not negatively impact job performance. These nuanced findings may reflect variations in the macro-, meso-, and micro-level factors identified in Study 1: industry types, project characteristics, project roles, and individual attributes. In summary, this study provides comprehensive insights into

the intricate dynamics of environmental resources, PsyCap, and their collective influence on project workers' well-being and performance.

Study 3 (Chapter 4), titled "*Dealing with the Dark Side of projectification: The Influence of Coping Strategies and Resources on Job Strain*," qualitatively explores the coping mechanisms that project workers use to deal with project work-related stressors and their potentially detrimental effects, building on **Study 1** and responding to calls for further research in **Study 2** and other project studies (e.g., Bowen et al., 2021; Delisle, 2020; Tijani et al., 2021). **Study 3** also follows studies investigating coping mechanisms in the project management, psychology, and organizational behavior fields. Additionally, Study 3 investigates the factors beyond motivation that influence the coping strategies project workers use to navigate the difficulties of project work and its consequences. The research draws on TMS, CMR-E theory (Lazarus & Folkman, 1984; Lazarus, 1991), and the JD-R and self-regulation model (Bakker and de Vries, 2021). Data were collected from semi-structured interviews with 37 professionals based in Norway who were engaged in projects in the oil and gas (O&G) industry. The Gioia methodology was employed to analyze the data.

The study reveals that project workers who employ adaptive coping strategies are "active agents" who strategically put self-prioritization and self-regulation at the core of the coping process to pursue specific goals, resist impulses or temptations, and achieve greater long-term utility, as previous research has emphasized (e.g., Moen et al., 2013, p. 84; Delisle, 2020; Unterhitzenbergert et al., 2021). Furthermore, these project workers are proactive and highly resilient agents who use self-initiated job-crafting tactics such as negotiating workloads and deadlines, building strategic relationships, and refocusing on their professional growth to anticipate future common stressors and proactively overcome them. Job crafting is mostly employed as a coping strategy by male senior project workers. Active agents also practice proactive vitality management (PVM), such as regular exercise and leisure time. These proactive health-focused strategies help them sustain energy levels, recover, and self-regulate emotions and thoughts regarding work. Other adaptive coping strategies for preventing workplace stress include active voice behavior, career advancement strategies (e.g., demonstrating capabilities and enhancing visibility), seeking instrumental support, emotional regulation, and positive cognitive reappraisal.

By contrast, early-career employees, frontline employees, and those with perfectionistic tendencies tend to use more maladaptive coping strategies, such as workaholic behaviors, passive acceptance, self-blame, work-related rumination, and avoidance behaviors (e.g., quitting). These project workers appear to be "constrained agents" who are limited by the structural conditions of their jobs, their acceptance of the temporary organization, and the masculine work culture of project work (Moen et al., 2013, p. 84; Delisle, 2020).

Study 3 reveals that the choice of coping strategies by project workers is influenced by crucial coping resources, such as support from work and nonwork domains, resilience, self-efficacy, optimism, self-control abilities, and coping time orientation. For instance, active agents who proactively use job crafting and PVM may be future-oriented individuals, whereas constrained agents may have a past or present orientation and fewer coping resources (e.g., lack of control, inexperience, inadequate support, and low mental energy).

A throughline of the dissertation is the recognition that both environmental resources and personal resources play highly influential roles in preventing/anticipating, mitigating, and proactively coping with project work challenges and their potential detrimental consequences. **Study 1** highlights that project-related stressors are associated with poor well-being. **Study 2** suggests that inadequate levels of support from both the work and family domains and lower levels of PsyCap negatively affect project workers' psychological well-being and job performance. **Study 3** finds that participants who report using adaptive coping strategies, such as job crafting, seeking instrumental support, voice behavior, positive cognitive reframing, and PVM, possess crucial coping resources that empower them to proactively employ these strategies. Thus, both environmental and personal resources are essential for project workers to cope effectively, particularly in multi-project settings.

5.2. Implications for research and practice

5.2.1. Theoretical contributions

The studies in this dissertation make multiple theoretical contributions to the project organization and management literature. The multi-level framework generated in **Study 1**, which is based on a comprehensive review of research on the negative aspects of project work and their implications for project workers, provides a foundation for developing theory and guiding future research. **Study 2** responds to calls for more research on the environmental and individual factors that influence job burnout and its negative consequences (An et al., 2019; Pinto et al., 2016; Yang et al., 2017) and how to mitigate them (Sun et al., 2020). This study enhances the understanding of the crucial role that social resources inside (Yang et al., 2017) and outside the organizational setting play in cultivating PsyCap (Neuman et al., 2014). It also lends further support to the JD-R model (Demerouti & Bakker, 2022), which proposes that job resources and family support are critical to an employee's mental resilience. **Study 2** provides evidence that social resources impact PsyCap, which can help employees adequately respond to workplace stressors and avoid or mitigate adverse outcomes. Moreover, **Study 2** is the first to develop and test a research model of the influence of social resources (i.e., support from both the work and family domains) and personal resources (i.e., PsyCap) on perceived stress, job burnout, and individual job performance in the project context.

Study 3 contributes to project organization at the micro level and multi-project management research by exploring the emotional and cognitive coping strategies used by individuals engaged in multiple projects simultaneously (Delisle, 2020; Martinsuo et al., 2019). **Study 3** provides a greater understanding of the adaptive coping strategies multi-project workers use to adequately address workload, overload, stress, and job strain (Bowen et al., 2021; Martinsuo et al., 2019) and prevent or reduce its adverse effects on psychological well-being (Zhang et al., 2023) and mental health (Tijani et al., 2021). Furthermore, **Study 3** is the first in the project management field to identify time orientation as a crucial cognitive resource influencing the coping strategies adopted by project workers.

5.2.2. Practical implications

This dissertation provides knowledge that could help organizational leaders and project practitioners better support vulnerable project workers in acquiring and maintaining adequate coping resources and adopting adaptive coping strategies to handle project-related stressors and their detrimental consequences more effectively and sustainably. **Study 1** informs practitioners about the most prevalent macro-, meso- and micro-level sources of the negative aspects of project work. These factors include the country's legal, political, and educational systems (Ekstedt, 2019), high-pressure work environments or abusive supervisor behaviors (Gallagher et al., 2015), and work-family conflict or job insecurity concerns (Turner & Mariani, 2016). Identifying these factors paves the way for strategies to mitigate their detrimental consequences for project workforces. For instance, the selection of project workers could consider the potential degree of "fit" between individual characteristics and organizational/job-related characteristics (Turner & Mariani, 2016, p. 252). Policymakers can also use the findings to ameliorate the negative aspects of project work, which are present in all economic sectors. The project workforce is a key resource for a country's economic performance, highlighting the importance of well-designed interventions to enhance their well-being.

At the organizational level, **Study 2** suggests that human resources management (HRM) specialists should design and implement strategic interventions that enhance vulnerable project workers' PsyCap levels to prevent or mitigate job burnout. Study 2 also suggests that organizational leaders should pay closer attention to project workers' access to high-quality support from project managers/supervisors and co-workers to ensure efficient and resource-rich working relationships, which can enhance PsyCap levels. Such coping resources are critical to mitigate project workers' job strain symptoms and enhance their performance.

Finally, **Study 3** suggests that HRM specialists and organizational leaders should nurture the adoption of adaptive coping strategies by vulnerable project workers and enhance their coping resources. Interventions to enhance vulnerable employees' proactivity and resilience in the face of multiple demands, particularly anticipating potential future stressors and actively seeking instrumental and social support, could help employees pinpoint specific challenging aspects of their work

and mitigate perceived stressors. In addition, the study recommends the cultivation of healthier project environments that facilitate and empower project workers to employ adaptive coping strategies to prevent and navigate project work challenges more sustainably.

5.3. Limitations and future research

Like all research, the studies in this dissertation are subject to limitations that, in some cases, provide avenues for future research. In **Study 1**, the selection criteria and search strategy were limited to specific terms used as keywords in three academic databases and included only peer-reviewed journals and studies in English. Moreover, the review was limited to the negative aspects of project work and their implications for individual project workers. Future work should include important emerging topics, such as project-related stressors, their impact on project workers' health and psychological well-being, and the role of individual factors in project-related stressors and individual outcomes. Studying these topics might broaden the sociological and psychological theoretical foundation of research on project workers.

The cross-sectional design of **Study 2** does not permit an examination of causal relationships or reverse effects, which would require a longitudinal design. The generalizability of the findings is limited by the sampling strategy, which does not allow a precise response rate to be reported. In addition, despite using procedural and statistical controls, the results may be influenced by common method bias (Podsakoff et al., 2003). Finally, **Study 2** focuses on a single type of environmental resource factor. Future studies could explore the effects of other factors that may influence project workers' PsyCap and job burnout levels, such as national culture (Pinto et al., 2016), perceived organizational justice (Yang et al., 2017), and job autonomy (Sun et al., 2020). Finally, the coping mechanism by which PsyCap mitigates job stress and burnout remains to be established (Senaratne & Rasagopalasingam, 2017).

The limitation of **Study 3** is its qualitative and exploratory nature. The purely qualitative design and limited sample size may make the findings only tentative. The characteristics of the sample (37 well-educated, experienced participants from a single industry living in Norway) also limit the generalizability of the findings.

These participants are probably well-equipped with crucial resources, such as work flexibility, job autonomy, and personal resources, for adequately dealing with job strain and its possible detrimental outcomes. Although this study does not seek to generalize the results to other industries or occupations, all participants worked for operator and supplier companies, suggesting that the findings may apply to other professionals involved in projects in projectified industries.

Furthermore, the data collection in **Study 3** relied on the participants' self-reported coping strategies and purposive and snowball sampling. These sampling approaches may introduce biases that could affect the representativeness of the results. Nonetheless, subjective perceptions are critical for understanding individual project workers' outcomes (Turner & Mariani, 2016), particularly the coping mechanisms they adopt to navigate the challenges associated with project-based work and their potential adverse consequences. The findings of this study could be extended by performing longitudinal studies or using mixed methods, multiple case studies, or experimental approaches. Future research should also consider the roles of national culture, psychosocial risk factors, personality traits, core self-evaluation, and other environmental and individual factors that might influence project workers' coping strategies. Extending the scope of future research to other contexts at the international level may be informative.

Finally, the author of this dissertation recognizes her role in the data analysis. Despite endeavors to conduct a systematic and transparent analysis, it is essential to acknowledge that biases and preferences inherent to the researcher may have influenced the methodological decisions within this dissertation (Brown & Lewis, 2011).

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