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Editorial

The Case Method in Business Economics Research: A Normative-Positive Approach or a Growing Methodological Awareness?

*Salvatore Esposito De Falco**

No abstract is available for this article

The methodologies employed in management studies have not always proved fully adequate to capture the actual complexity of the firm as their object of inquiry. Indeed, the literature has documented a broad spectrum of research approaches, ranging from the analysis of individual business cases to normative accounts in which the firm has, in essence, been treated as an ahistorical entity.

An examination of international publication trends in management research reveals the progressive consolidation of two main methodological orientations. On the one hand, normative approaches seek to formulate principles, models, and recommendations for managerial action. On the other hand, positive approaches aim to describe, explain, and interpret corporate behaviour without necessarily translating their findings into operational prescriptions. Both perspectives have contributed significantly to the development of the discipline. However, when adopted in isolation, both risk failing to capture fully the concrete, historical, and context-dependent nature of the firm.

It is certainly not easy to establish whether a prescriptive approach should be considered preferable to a non-prescriptive one. By analogy, the issue recalls the relationship between biological and clinical knowledge in the medical sciences. The former provides general scientific foundations, whereas

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the latter applies such knowledge to the interpretation of the individual patient, as well as to diagnosis and treatment. Similarly, in management studies, theory provides categories, concepts, and models, but it is the engagement with the actual firm – with its history, actors, decisions, and constraints – that enables a comprehensive understanding of business phenomena.

Against this background, the author is convinced that case study research continues to represent one of the most valuable methodological approaches for advancing knowledge of the firm. The challenge, however, lies in overcoming the risk of excessive abstraction. The solution can only be found in research capable of acting as a bridge between the new problems emerging from managerial practice and the innovative models or principles developed by theory.

As previously observed, the stream of research devoted to specific business realities, centred on the analysis and interpretation of the decisions made by individual firms and rigorously connected to the environmental context in which they operate, plays a driving role in the advancement of business economics (Napolitano, 1994).

Rather than relying exclusively on general laws or seeking regularities through the application of indicators and statistical correlations, the business scholar may focus on the uniqueness of the individual firm. Such an approach provides not only a basis for testing or challenging theoretical propositions, but, above all, an experimental setting in which weak signals can be identified and new methodological proposals can emerge.

From this perspective, we believe that this is the path that should be pursued. This does not imply abandoning other research approaches, which may remain valid and valuable. Nevertheless, no methodological approach can ultimately dispense with engagement with the concrete realities continuously generated by the economic and business world.

Ethnographic research, in particular, may represent a particularly promising frontier for business economics and management studies. Originating within anthropology and subsequently embraced by the social and organizational sciences, ethnography enables researchers to examine organizational practices, languages, symbols, routines, and decision-making processes from within.

Rather than merely collecting data through standardized instruments, the researcher enters the organizational setting, observes its everyday dynamics, interprets the meanings that organizational actors attribute to their actions, and reconstructs the implicit culture that shapes behaviours and decisions. In this respect, ethnography can enrich the case study method by providing an in-depth understanding of managerial phenomena and of the processes through which firms construct value, identity, and legitimacy.

Building on these necessary premises, I decided to launch the present Special Issue. The contributions included in this collection provide insightful analyses of diverse organizational, entrepreneurial, and institutional settings. Despite their differences, they share a common ambition: to develop an in-depth understanding of complex phenomena, decision-making processes, managerial practices, and pathways of change that cannot easily be reduced to linear relationships or investigated solely through quantitative data.

In conclusion, I would like to express my sincere gratitude to the three Guest Editors who curated and coordinated this Special Issue and, above all, to all the authors who responded to the call for papers and entrusted the journal with the results of their research. The quality, variety, and number of the submissions received made this editorial project possible and confirm the importance of continuing to promote scholarly spaces that are open to theoretical and methodological pluralism.

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Preface

Judgment, Dialogue, and Reality: The Enduring Value of Case Method

*Carin-Isabel Knoop**

No abstract is available for this article

*“For if education may be defined in a word, that word is controversy.
When concord reigns, learning withers; where conflict rules, it flourishes”.*

Donald Moffat, American writer and Harvard graduate, in *Fair Harvard*

After more than three decades of writing and editing case studies and training case writers, I was honored by the editor’s invitation to contribute this foreword to a collection devoted to a method that has shaped my professional life. It also offered an opportunity to reflect on why the case method – despite extraordinary technological change – continues to play such an important role in management education.

Every era must decide which human capabilities are most worth cultivating. In 2026, business schools are preparing leaders for a world in which information is abundant but judgment remains elusive. Leading in this context will require the ability to make difficult choices under extreme uncertainty, support

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teams and employees under duress, and manage organizational boundaries redrawn by AI and digital technology.

While most educational technologies are designed to help learners acquire, retrieve, or produce knowledge, the case method is different. It helps us construct understanding. It does so by demanding and developing three capacities that elude automation:

1. Judgment and understanding what matters,
2. Dialogue and understanding how others see the world; and
3. Proximity to reality and understanding how organizations actually work, rather than how we imagine they work.

These capacities have been central to the method for more than a century and may become even more important. If all three legs are present, a case will bear the weight of classroom engagement and debate. If a single leg is absent or falls short, the method weakens.

This collection extends this centenarian technology into its new century. The case studies that comprise this compendium were written as organizations confront profound technological, social, and managerial change. Like the earliest Harvard Business School cases, they invite readers not simply to learn what happened but to wrestle with decisions whose outcomes were uncertain.

1. A delicate experiment

When it started in the early 1920s, the case method was an answer to a question that confronts us today: How do we prepare people to exercise judgment as the world changes faster than existing knowledge can keep pace?

The then-13-year-old Harvard Business School, still a “delicate experiment”, sought a new way to educate leaders at the dawn of management as a profession. A few years after World War I, society was being transformed by industrialization and urbanization – marked by severe income inequality, stagnant wages for industrial workers, soaring corporate profits, migration from rural to urban areas, and the rise of nativism and xenophobia.

To help them do so, HBS recruited a Harvard Shakespeare scholar by training. Malcom P. McNair joined the HBS faculty in 1920 under a new dean, Wallace B. Donham, and Bureau of Business Research Director Melvin Copeland. Inspired by the case method used at Harvard Law School, Donham and Copeland intended to develop a case-by-case method for studying businesses.

Rather than transmitting knowledge, cases would cultivate judgment through discussion, reflection, perspective-taking, and decision-making. The method was positioned as an alternative to lectures and memorization. That same year, Clinton P. Biddle (MBA 1920) became an early researcher in the Bureau of Business Research.

By 1921, Biddle authored the first case. There is something poetic about the fact that the first Harvard Business School case was *The General Shoe Company*. The case is about labor and management, involving workers leaving a shoe factory 45 minutes early. At the same time, the company struggled to meet orders. Ever since, the case method asks us to try on other people's shoes: to inhabit their circumstances, confront their dilemmas, and make decisions with the information available to them at the time.

McNair subsequently wrote many cases, built courses around them, and taught by the case method. He became known as "the voice of experience". Early cases focused heavily on operations, labor, production, and managerial decision-making. Between 1921 and the early 1930s, HBS transformed the case method from an educational experiment into its signature pedagogy.

In parallel, John Dewey, an American philosopher, psychologist, and educational reformer who taught primarily at the University of Chicago and later at Columbia University, would become one of the founders of pragmatism. This philosophy asks whether ideas work in practice rather than whether they are abstractly "true". His philosophy and the case method both focus on the power of learning by doing; using real-world problems as the basis for learning; developing judgment instead of absorbing facts; learning through discussion and inquiry; and treating knowledge as something tested through experience.

During World War II, the method demonstrated its flexibility as faculty produced hundreds of cases for military training, emphasizing decision-making under radical uncertainty and life-and-death pressure.

In the 1950s, McNair and his colleagues codified the philosophy of the method. They helped spread it nationally and internationally, presenting it as a means of developing independent thinking, democratic leadership, and intellectual rigor through discussion. He noted in 1954: "*A case is really a distinct literary form. It is obviously not a poem. It is not purely a narrative, but it has important elements of narration. It is not purely an exposition. It is not purely argumentation, but it may have important elements of argumentation. It is not just fiction, but [...] it may have an important analogy to a detective story*" [iv].

During the 1960s and 1970s, cases became more numerous, analytical, and

globally oriented as business education expanded. As the business world changed and the curriculum expanded, cases incorporated economics, finance, and quantitative methods.

In the 1980s, the scope of case subjects broadened beyond manufacturing to encompass strategy, entrepreneurship, services, technology, and organizational leadership, reflecting the growing complexity of management. The publication *Education for Judgment: The Artistry of Discussion Leadership*[v] in 1991 consolidated the case method's power to cultivate judgment through dialogue, ambiguity, and engagement with competing perspectives.

Today, the case method is a global enterprise. The Case Centre, the world's largest repository of teaching cases, has more than 500 member organizations worldwide and serves educators across the globe. In the 2022–23 academic year alone, 1,187 organizations in 85 countries purchased cases through The Case Centre for use in their programs. The schools producing and teaching cases now span North America, Europe, Asia, Latin America, Africa, and the Middle East.

In addition, what began in 1921 as a one-page description of a shoe factory labor dynamic grew into a range of teaching materials, including exhibits, spreadsheets, video, audio, and simulations. Today, some cases incorporate digital platforms, interactive exercises, and even AI-enabled tools and avatars that allow participants to engage with synthetic “protagonists” and “stakeholders” and explore alternative paths in real time. Yet despite these technological advances, the fundamental premise remains unchanged. The tools of trade have changed, but participation remains at the center of the pedagogy.

2. From judgment to discernment

In the past 35 years, organizations have invested heavily in technologies that improve access to information, analysis, prediction, and efficiency. What remains difficult is helping people develop the capacity to decide when the data are incomplete, weigh competing priorities, appreciate motivations, navigate ethical tradeoffs, persuade others, understand biases, change course when new information emerges, and act despite uncertainty.

As organizations grapple with the opportunities and challenges of AI, the enduring value of the case method may lie in its ability to develop one of the most important human capabilities: the capacity to exercise sound judgment when there is no obvious right answer. In a world increasingly shaped by algo-

rhythms, AI-generated answers, and information abundance, this ability may be more valuable than ever.

In some way, the case method might be the antidote to the so-called “last mile problem” for AI and the hope that the “Human in the Loop” model will enable us to mitigate AI’s risks and harness its promises. The case method is training for that final act of judgment. Put another way, the case method may increasingly be important as an *understanding* technology.

Understanding of organizational dynamics rests on the three capacities of the case method – judgment, dialogue, and reality.

Judgment: A central contention in the cases is that leadership often involves losses, trade-offs, and competing values. Reality is often ambiguous, and cases force choices despite incomplete information. The question is not what is true, but what should be done and what our suggestions reveal about us.

Dialogue: With the right teaching plan, cases should create venues for structured disagreement. Learning occurs through competing interpretations of the same set of facts. The discussion itself and what it reveals about different perspectives is part of the pedagogy and joint discovery. The method relies on others’ voices and their commitment to joint exploration. It requires that participants also feel comfortable disagreeing with each other.

Reality and proximity: The case method is a technology of proximity: to practice, people, consequences, and reality. Cases are grounded in actual people, organizations, and consequences. With their focus on field research and interviews with stakeholders and decision-makers, case studies help preserve the context, ambiguity, and lived experience of decision-makers. They often bring the actual voices of these leaders and with them a glimpse into how they make sense of their reality. Their situations are not average, nor generated, nor composite. They are unique and still pedagogically interesting.

The case method remains relevant because it keeps us close to reality, not just the reality of practitioners but also the reality of how work gets done in organizations: uncertainty, competing interests, human consequences, ambiguity, disagreement, and lived experience. They therefore keep learners close to the realities of organizational life and, in doing so, can better prepare them to succeed once they are actors on the business stage.

In a world that feels increasingly disembodied, the case method also keeps business faculty members connected to the reality of practice. Field cases place researchers at the heart of organizational decision-making through confidential conversations with managers facing real decisions and real consequences that affect real human beings in their firms and far beyond.

3. In the risks lay the promise

Some see the case method as being in competition with or incompatible with modern technologies. Instead, it belongs alongside books and conversation, enduring human technologies that continue to matter because they address fundamental human needs. No matter the time or the format, cases help us learn to navigate complexity together at the edges of expertise.

Doing so, however, requires collaboration, investment, and efforts on the part of both teachers and learners. The case method is not a solitary exercise. Case authors speak with companies and customers, listen to multiple viewpoints, and craft a story that can be understood from several perspectives. In the classroom, cases come alive in conversation. The method therefore requires individual preparation and commitment in pursuit of a collective enterprise, a form of collective sense-making. When it is well executed, a case conversation will enable students to hear different interpretations, experiences, priorities, and values. The discussion itself is the learning and the method that engineers hopefully productive disagreement.

Many of the forces reshaping higher education and organizations today challenge those very conditions – from preparation, conversation, and resource conservation. Among them are reduced individual preparation as AI increasingly summarizes cases and substitutes for the struggle of interpreting complex material on our own. This also reduces the importance of collaborative preparation as study groups become less central to learning. The classroom is affected by a growing reluctance to disagree or express minority viewpoints, limiting the productive tension on which case discussions depend. Similarly, shorter attention spans and increasing expectations for immediate answers rather than sustained inquiry. Finally, the case method is an expensive technology to develop, learn to teach, and teach. It is, like so many other worthy human endeavors, under pressure to privilege efficiency, certainty, and optimization over exploration, ambiguity, and reflection.

None of these developments diminish the importance of the case method. Instead, they clarify its distinctive contribution. As technologies increasingly help us acquire information and generate answers, the case method remains one of the few educational approaches designed to help people tackle complexity together.

4. Beyond the classroom

The case method's deeper contribution may be that it helps us practice the habits required for collective life: engaging in reality, exercising judgment, learning through disagreement, understanding other people, and making decisions whose consequences will be borne by human beings.

A century after *The General Shoe Company* and decades into the age of AI, those capacities remain as important as ever. This collection of cases contributes to the next chapter in the history of the case method. I hope they challenge readers, stimulate discussion, spark new insights, and inspire the next generation of case writers.

With thanks to my colleagues David Lane and Matthew Kelley for their insights.

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Introduction

The exploratory power of the qualitative approach and the case method for advancing management research, theory, and practice: An introduction to the Special Issue

*Raffaella Montera**, *Taewoo Roh***, *Zsolt Havran****

Guest Editors of the Special Issue

No abstract is available for this article

Over the past decades, management scholarship has been shaped by a pronounced movement toward methodological sophistication, the accumulation of large-scale datasets, and the refinement of advanced quantitative techniques (Simsek *et al.*, 2025). These advances have substantially improved measurement precision and statistical rigour. Yet they have also, and perhaps inadvertently, encouraged a subtle displacement of scholarly attention: from what is theoretically meaningful, contextually embedded, and processually dynamic toward what is most readily measurable (Bergh *et al.*, 2022; Pillai *et al.*, 2024). The recurring risk is that the phenomena most central to management – decisions, behaviours, relationships, emergent practices, and the mechanisms that connect them – come to be approached through the lens of available instruments rather than through the substantive questions that motivate the inquiry.

It is against this backdrop that qualitative approaches, and case study research in particular, reassert their distinctive value. When carefully designed (Lindgreen *et al.*, 2021) and systematically conducted (Patton & Appelbaum, 2003), qualitative inquiry enables scholars to uncover underlying mechanisms, reconstruct complex processes, and examine phenomena within their

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real-life settings (Johnson *et al.*, 2006; Yin, 2014). Qualitative research is not a residual or merely preparatory mode of investigation, but a rigorous, human-centred way of dissecting complex social phenomena and generating in-depth, contextual insight (Lim, 2024). Across the domains of management – from human resource management and organizational behaviour to strategy, entrepreneurship, finance, operations, and corporate governance – many salient research questions concern processes and meanings that are difficult to capture fully through standardized indicators alone (Reinecke *et al.*, 2016; Hoorani *et al.*, 2019).

The case method occupies a particularly important position within this tradition. Its enduring appeal lies precisely in its capacity to investigate context-sensitive and processually dynamic phenomena in their full complexity, moving beyond experimental control to embrace, rather than suppress, the intricacy of real-world settings (Gummesson, 2017). Beyond its descriptive value, case-based inquiry has become an increasingly demanding vehicle for theory development (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Rouse *et al.*, 2025). Theory building from cases, meta-synthetic logics that aggregate qualitative evidence (Hoon, 2013), and the codified analytic procedures that have professionalized inductive research (Gioia *et al.*, 2013; Magnani & Gioia, 2023) have collectively raised both the ambition and the accountability of qualitative scholarship. The field's reflexive turn is evident in sustained attention to how qualitative research is conducted and evaluated (Pratt, 2025; Cañibano, Dudau & Muratbekova-Touron, 2025). Recent work on purposeful case selection, sample sizes, and saturation across the Gioia, Eisenhardt, and pattern-matching traditions (Bouncken, Czakon & Schmitt, 2026; Elmholdt, Gill and Nielsen, 2026) further reflects the continuing maturation of qualitative methodology (Aguzzoli *et al.*, 2024; Köhler, Rumyantseva & Welch, 2025).

Numerous scholars have nonetheless observed that the connection between method and theorizing deserves to be strengthened (Alvesson & Sandberg, 2013; Cornelissen, 2017; Wickert *et al.*, 2021; Kibler, Vaara & Laine, 2025). Much of the recent methodological debate has concentrated on quantitative and computational innovation, while comparatively less attention has been devoted to the theoretical potential of qualitative and case-based research. This omission is notable at a time when organizations face environments defined by digital transformation, artificial intelligence, sustainability pressures, and shifting stakeholder expectations. Such dynamics are frequently non-linear, path-dependent, and context-specific; understanding them calls for a holistic, longitudinal, and multi-actor perspective – one to which the case method is especially well suited (Gummesson, 2017).

This Special Issue takes up that challenge. Its purpose is to demonstrate

and further develop the role of qualitative research – and case study research in particular – as a methodological approach capable of generating theoretically meaningful knowledge and insights relevant to managerial practice. The contributions gathered here place qualitative single-, multiple-, and comparative-case designs at the core of theoretical advancement; several extend the methodological conversation itself, interrogating how mixed-methods integration and, increasingly, artificial intelligence reshape the conduct of case-based research. Taken together, they illustrate how methodological rigour, transparency, and reflexivity can be reconciled with the exploratory openness that gives qualitative inquiry its explanatory power.

The seven articles selected for this issue span diverse empirical domains, yet they converge on a common premise: that the phenomena worth explaining are those embedded in context, and that the case method is particularly well equipped to render them intelligible.

The issue opens with a methodological contribution by Razafimamonjy (this issue), which addresses a persistent weakness in mixed-methods scholarship: the tendency to juxtapose quantitative and qualitative strands rather than to integrate them. Working within a pragmatic paradigm and an explanatory sequential design, the author combines survey evidence from 137 employees with semi-structured interviews and focus groups across thirty firms in Fianarantsoa (Madagascar), mobilizing methodological, source, and analytical triangulation to study the management of Generations Y and Z. The value of genuine integration becomes visible in three behavioural paradoxes that a single method would have concealed: a ‘mobile stability’ in which employees simultaneously prize security and remain open to external opportunities; a mismatch between the formal recognition systems favoured by managers and the interpersonal recognition employees expect; and an autonomy paradox in which managerial claims to empower are not perceived as such by employees. Beyond these findings, the article offers a documented and replicable protocol, with explicit quality benchmarks, responding to calls for transparent mixed-methods implementation from an emerging-market context that remains under-represented in the methodological literature (Halme *et al.*, 2024).

Remaining on methodological terrain, Faraci and Ferlito (this issue) turn to the rapidly changing relationship between artificial intelligence and case-based inquiry. Drawing on a review of 139 documents and reading them through affordance theory, theorizing from cases, and sociomaterial perspectives, the authors argue that AI involvement should not be treated as a uniform methodological condition. They develop a four-role framework in which AI acts as Discoverer, Selector, Co-Constructor, or Generator of cases,

and show that each role carries distinct implications for contextual understanding, methodological rigour, researcher oversight, and the epistemic status of empirical material. Three propositions link these roles to different modes of theorizing and to the preservation of qualitative rigour. The contribution highlights both the opportunities and risks associated with AI-supported case research: it equips scholars to harness generative and agentic systems deliberately, while guarding against the erosion of the interpretive judgment on which the legitimacy of case research ultimately depends (Nguyen & Welch, 2026).

Turning from method to substantive governance concerns, Notari *et al.* (this issue) examine how a regulated organization reconciles the competing imperatives of compliance and service quality. Through a theory-elaborating, embedded single-case study of Australian Harbour International College, a registered training provider in Sydney, and drawing on a longitudinal documentary record analysed with the Gioia methodology, the authors identify five interlocking pillars – curriculum design, multi-source feedback, trainer development, digital infrastructure, and stakeholder engagement – through which compliance and quality are co-produced over time. Their central move is conceptual: they reframe the familiar compliance-quality dichotomy as a ‘productive duality’ rather than a trade-off, showing that the two logics, when structurally and culturally integrated, become mutually reinforcing, consistent with the logic of organizational ambidexterity. In doing so, the study repositions stakeholder feedback as a continuous-improvement governance device and demonstrates how a carefully bounded single case can illuminate context-sensitive organizational mechanisms.

Gritta *et al.* (this issue) extend the governance theme to the interior of professional service firms. On the basis of a theory-driven comparative study of thirty Italian accounting firms undergoing digital transformation, supported by semi-structured interviews, the authors reconceptualize professional training not as an individual investment in human capital but as a mechanism of “cognitive governance”. Their comparison reveals a systematic trade-off: training pathways oriented toward procedural knowledge accelerate short-term productivity yet entrench technological dependence and automation bias, whereas the integration of theoretical and conceptual content cultivates professional judgment and sustains longer-term adaptability. By interpreting training as a driver of the knowledge structures that shape technological adaptation trajectories, the article contributes to the literature on professional service firms and digital transformation, and clarifies how organizations can govern the tension between efficiency and judgment in knowledge-intensive settings.

Sustainability and technological transition come to the fore in the contribution by Ferrara (this issue), which asks how organizations move toward the human-centred, sustainability-oriented paradigm of Industry 5.0. Anchored in the dynamic capabilities perspective and based on a multiple-case study of three Italian waste management firms – eighteen semi-structured interviews and archival sources analysed through the Gioia methodology – the study identifies three aggregate capabilities that underpin the transition: a Waste Ecosystem Scanning Capability, a People-Technology Orchestration Capability, and a Smart Waste Cycle Reconfiguration Capability. Together these constitute an integrated architecture through which firms sense environmental complexity, orchestrate human and technological resources, and reconfigure their strategic, operational, and relational processes. The article thereby extends dynamic capabilities theory into a service context that is central to the circular economy yet has received limited attention within the Industry 5.0 debate.

Covucci (this issue) shifts the analytical lens to entrepreneurial finance and regional development. Through a longitudinal single-case study of Futura S.r.l., a FoodTech venture based in Southern Italy – a territory historically marked by information asymmetries and capital gaps – and relying on the triangulation of documentary and operational sources, the author reconstructs the firm’s trajectory from bootstrapping to structured capitalization. The analysis identifies a “hybrid sourcing algorithm” that orchestrates public grants, bank debt, and private equity, and shows that transparency and rigour in ESG metrics operate not as bureaucratic burdens but as strategic levers of institutional legitimacy capable of attracting global resources. In foregrounding resource orchestration and the role of incubators as “capital architects”, the study reframes territorial constraints as a source of defensible competitive advantage and reaffirms the value of case-based research for theory building in sustainable management.

The issue closes with the contribution by Ferrara *et al.* (this issue), which examines destination repositioning in the aftermath of the COVID-19 pandemic. Focusing on the Marche Region (Italy) and drawing on semi-structured interviews with key informants, the authors show how collaborative networks of public and private actors can convert undertourism from a condition of marginality into a strategic opportunity. Their coding of the interview material yields five network types – public-private, intra-sectoral, inter-sectoral, cross-territorial, and industry-community – that together form the strategic and operational architecture of the regional tourism and cultural system. The findings indicate that sustainable competitiveness depends on integrating diffuse territorial assets through multi-level governance, on addressing infrastructural gaps, and on enhancing community wellbeing, and

that successful repositioning requires a shift from traditional competition toward coopetition, supported by new professional roles able to orchestrate development and manage fragmented resources.

Read together, the seven contributions do more than showcase the versatility of qualitative inquiry across domains as varied as organizational behaviour, education, professional services, waste management, entrepreneurial finance, and tourism. Together, they reveal a set of common themes that can be organized along the three registers this Special Issue set out to advance – methodology, theory, and practice – and that together define the exploratory power of the case method.

At the methodological level, the issue demonstrates that qualitative research is a site of active innovation rather than a settled repertoire. Razafimamonjy's insistence on integration over juxtaposition, and Faraci and Ferlito's anatomy of AI's roles in case research, push the frontier of how cases are designed, selected, and constructed (Köhler, Smith, Greckhamer & Lê, 2025); the recurrent, disciplined use of the Gioia methodology across the empirical papers (Notari *et al.*; Ferrara), and the shared concern with triangulation, transparency, and an explicit evidence-to-claim chain, show how rigour and reflexivity are operationalized in practice (Gioia *et al.*, 2013; Hoorani *et al.*, 2019; Kressmann & Mueller-Seeger, 2025; Bouncken, Czakon & Schmitt, 2026). Collectively, these choices answer the field's call to make the conduct and evaluation of qualitative research more accountable without domesticating its interpretive ambition (Pratt, 2025; Wilhelm *et al.*, 2026).

At the theoretical level, each study uses the case not to describe but to build. What unites them is a governance-and-orchestration sensibility: the reframing of compliance and quality as a productive duality (Notari *et al.*); the interpretation of training as cognitive governance (Gritta *et al.*); the articulation of dynamic capabilities for a sustainable industrial transition (Ferrara); the mobilization of institutional legitimacy and hybrid financial architectures (Covucci *et al.*); and the orchestration of territorial assets through multi-level governance and coopetition (Ferrara *et al.*). These studies illustrate the potential of case research to generate mid-range, mechanism-centred theory when scholars remain close to their empirical settings and allow context to inform, rather than merely illustrate, their constructs (Eisenhardt & Graebner, 2007; Cornelissen, 2017). This governance thread resonates with the intellectual identity of Corporate Governance and Research & Development Studies, extending the study of governance beyond formal structures to the cognitive, relational, and inter-organizational mechanisms through which contemporary organizations are steered.

At the level of practice, the contributions translate analytical insight into

situated guidance for managers navigating transitions they cannot fully control: cross-generational tensions and talent retention in emerging markets; the reconciliation of regulatory compliance with learner and employer expectations; the design of training that preserves professional judgment against automation bias; the capabilities required to enact a human-centred Industry 5.0; the financial and legitimacy work that allows sustainable ventures to scale; and the collaborative architectures through which fragile territories reposition themselves. In each case, the usefulness of the guidance is inseparable from the depth of the case that produced it – a reminder that context-sensitivity is not a limitation on relevance but its condition.

Three cross-cutting motifs deserve emphasis. First, digital transformation and the human-technology interface emerge as recurring themes, from AI in the research process to Industry 5.0, digital infrastructures in service delivery, and FoodTech innovation; the issue frames technology as something to be governed and orchestrated rather than simply adopted. Second, sustainability operates as a shared horizon – environmental, social, and financial – that the case method renders concrete rather than aspirational. Third, and most fundamentally, the papers converge on the exploratory power announced in this issue's title: the capacity of qualitative and case-based research to surface the mechanisms, tensions, and paradoxes that measurement alone leaves in shadow, and to convert them into theory and into practice.

If one conclusion follows, it is that the opposition between rigour and richness, so often assumed, is a false one (Christofi *et al.*, 2024). The studies collected here show that methodological rigour can be achieved through, rather than at the expense of, contextual richness, and that practical relevance often depends on sustained attention to context. In reaffirming the exploratory power of the qualitative approach and the case method, this Special Issue invites management scholars to treat complexity not as an obstacle to be controlled away, but as the very object worth explaining.

We wish to express our gratitude to Professor Salvatore Esposito De Falco for the opportunity to develop this Special Issue, and to the editorial team and the reviewers whose careful and generous work made these contributions possible.

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Mixed Methods in Management Research: From Juxtaposition to Explanatory Integration in the Study of Organizational Behavior

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Abstract

Contemporary organizations increasingly confront multi-generational complexity that single-method designs struggle to capture, yet mixed methods studies remain more often juxtaposed than genuinely integrated, particularly in under-documented African contexts. This article addresses that gap by documenting a reproducible explanatory sequential mixed methods protocol, in which a quantitative survey phase (137 participants across thirty companies in Madagascar) identified statistical patterns requiring explanation, which then guided a purposively sampled qualitative phase of interviews and focus groups, with triangulation matrices classifying each quantitative-qualitative pairing as convergent, complementary, or divergent. Divergent pairings revealed three behavioral paradoxes concerning loyalty, recognition, and autonomy. The study's principal contribution is methodological rather than empirical: a documented, transferable procedure for converting statistical divergence into theoretically grounded meta-inferences that neither method could produce alone. This procedure in turn equips organizations and researchers with a replicable diagnostic for identifying generational misunderstandings that conventional single-method approaches would leave undetected.

Keywords: Mixed methods; Triangulation; Organizational behavior; Methodological validation; Paradoxes.

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Sommario

Le organizzazioni contemporanee si trovano sempre più spesso a confrontarsi con una complessità multigenerazionale che i disegni di ricerca a metodo singolo faticano a cogliere; tuttavia, gli studi a metodi misti rimangono più spesso giustapposti che realmente integrati, in particolare nei contesti africani poco documentati. Il presente articolo intende colmare questa lacuna documentando un protocollo riproducibile a metodi misti di tipo sequenziale esplicativo, in cui una fase quantitativa basata su un'indagine (137 partecipanti in trenta aziende del Madagascar) ha identificato pattern statistici che richiedevano una spiegazione, i quali hanno poi guidato una fase qualitativa condotta con campionamento mirato attraverso interviste e focus group, con matrici di triangolazione che classificano ciascuna coppia quantitativo-qualitativa come convergente, complementare o divergente. Le coppie divergenti hanno rivelato tre paradossi comportamentali riguardanti lealtà, riconoscimento e autonomia. Il contributo principale dello studio è di natura metodologica piuttosto che empirica: una procedura documentata e trasferibile per convertire la divergenza statistica in meta-inferenze fondate teoricamente, che nessuno dei due metodi potrebbe produrre da solo. Questa procedura, a sua volta, fornisce a organizzazioni e ricercatori uno strumento diagnostico replicabile per identificare incomprensioni generazionali che i tradizionali approcci a metodo singolo lascerebbero inosservate.

Parole chiave: Metodi misti; Triangolazione; Comportamento organizzativo; Validazione metodologica; Paradossi.

1. Introduction

Contemporary organizations increasingly display forms of complexity, coexisting generational cohorts, evolving career expectations, and shifting psychological contracts, that challenge single-method approaches to organizational behavior research (Twenge, 2010; Ng & Parry, 2016). Quantitative designs offer statistical rigor and generalizability but often cannot capture the meanings organizational actors attach to their experience, while qualitative designs generate contextualized understanding at the cost of generalizability (Creswell & Creswell, 2018; Miles *et al.*, 2019). Mixed methods research has emerged as a pragmatic response to this tension, combining the respective strengths of both traditions (Tashakkori & Teddlie, 2010; Johnson & Onwuegbuzie, 2004).

Yet the promise of mixed methods remains only partially realized, and three gaps motivate this article. First, empirical studies tend toward juxtaposition, collecting both types of data without genuinely integrating them (Bryman, 2007; Bazeley, 2016). Second, few publications document the

full methodological process in enough detail to be reproduced, particularly for explanatory sequential designs, whose point of integration between phases is rarely specified beyond general terms (O’Cathain *et al.*, 2008). Third, mixed methods studies conducted in sub-Saharan Africa remain scarce, leaving instrument adaptation and cross-cultural validation under-documented (Zoogah *et al.*, 2015; Cameron & Golenko, 2023), and published protocols more often treat divergence between strands as a threat to validity than as a source of theoretical insight (Moran-Ellis *et al.*, 2006).

This article is primarily methodological. It documents, step by step, an explanatory sequential mixed methods protocol, from instrument validation to final integration, applied to the study of Generation Y and Z management in thirty companies in Fianarantsoa, Madagascar. The empirical case, built from survey data on 137 participants combined with 30 interviews and 30 focus groups, is not an end in itself: it serves as an illustrative vehicle through which the protocol’s capacity to produce valid, theoretically productive meta-inferences can be demonstrated and assessed.

The central research question is: how can an explanatory sequential mixed methods design be documented and operationalized to produce valid meta-inferences in organizational behavior research? This question unfolds into three sub-questions: (1) what methodological principles govern the effective integration of quantitative and qualitative strands within this design; (2) what validation and reliability procedures secure the quality of each strand and of their integration; and (3) how does triangulation, particularly the deliberate analysis of divergence, generate meta-inferences that exceed what either method could produce in isolation?

The article’s contribution is threefold. Methodologically, it offers a detailed, reproducible protocol that addresses the documentation gap identified above. Empirically, it illustrates this protocol through three behavioral paradoxes that emerged from triangulation and would have remained invisible to a single-method approach. Pedagogically, it provides researchers, particularly doctoral students working in resource-constrained or non-Western settings, with concrete guidance on design, validation, and integration. The remainder of the article reviews the relevant literature, details the methodological protocol, presents the results through the lens of triangulation, and discusses the study’s methodological and theoretical implications.

2. Literature review

2.1 *Mixed methods: paradigmatic and design foundations*

The methodological debate over combining quantitative and qualitative approaches was long dominated by the "paradigm wars" between positivism and interpretivism (Gage, 1989; Guba & Lincoln, 1994), with some scholars arguing the two traditions rest on incompatible ontological assumptions (Smith & Heshusius, 1986). This position has been progressively superseded by pragmatism, which subordinates paradigmatic allegiance to the practical requirements of the research question (Johnson & Onwuegbuzie, 2004; Morgan, 2007); methodological choice follows the nature of the phenomenon under investigation rather than prior epistemological commitment, although some authors caution that paradigmatic tension, while not insurmountable, should be made explicit rather than dissolved (Maxwell & Mittapalli, 2010).

Building on this pragmatic foundation, Creswell and Plano Clark (2018) distinguish mixed methods designs along two axes, timing (sequential or concurrent) and priority (equal or unequal), yielding convergent, explanatory sequential, exploratory sequential, and embedded designs. The explanatory sequential design adopted in this study begins with a dominant quantitative phase and adds a qualitative phase specifically to explain or deepen unexpected quantitative results (Ivankova *et al.*, 2006). A convergent design would instead have collected both strands simultaneously for cross-validation, and an exploratory sequential design would have used qualitative data to build the quantitative instruments; neither alternative suited a study whose central aim was to explain patterns that only became visible once the quantitative phase was complete (Morse, 2003). Because its explanatory logic moves transparently from an initial quantitative finding to a qualitative account of the mechanism behind it, this design offers a structure especially well suited to documenting how meta-inferences are built, the central methodological concern of this article, a requirement addressed directly in Section 3.

2.2 *Triangulation and the integration gap in organizational research*

Triangulation is the operational core of mixed methods integration. Denzin (1978) distinguishes several forms, of which methodological triangulation, combining quantitative and qualitative methods to study the same phenomenon, is central to mixed designs. Greene *et al.* (1989) extended

this typology by identifying the purposes triangulation can serve: confirmation, when convergent findings corroborate one another; complementarity, when each method illuminates a different facet of the phenomenon; development, when the results of one method shape the design of the other; and initiation, when contradictions between methods are deliberately sought as a source of new theoretical insight. This last purpose remains underexploited: much of the literature still treats triangulation primarily as a validation device and divergence as a problem to be resolved rather than a finding in its own right (Barbour, 1998; Moran-Ellis *et al.*, 2006).

Assessing the quality of mixed methods studies requires criteria beyond those developed separately for quantitative and qualitative research (Teddlie & Tashakkori, 2009). O’Cathain *et al.* (2008) propose evaluating the quality of each component, of their integration, and of the study as a whole; Teddlie and Tashakkori (2009) add two criteria specific to mixed designs, integration legitimation, the extent to which strands are genuinely combined rather than juxtaposed, and the quality of meta-inferences, the integrative conclusions that exceed what either method could generate alone. Genuine integration, in this sense, means that the two strands inform each other’s design, analysis, or interpretation rather than being merely reported side by side in the same article; these two criteria, integration legitimation and the quality of meta-inferences, structure the evaluation of the present protocol in Sections 3 and 4. In a review of 232 published studies, Bryman (2006) found that many mixed methods articles stop at juxtaposition without reaching this threshold, a diagnosis a decade of subsequent methodological work has continued to confirm and refine (Bryman, 2007; Bazeley, 2016).

This integration gap is especially visible in organizational behavior and human resource management, where mixed methods adoption has lagged behind other social science fields despite the manifest complexity of constructs such as leadership, commitment, and culture (Molina-Azorin, 2012). A recent handbook mapping the field confirms that management research remains disproportionately single-method and that, where mixed designs are used, integration is rarely made explicit at the level of design, analysis, or interpretation (Cameron & Golenko, 2023). Exemplary exceptions exist: Meyer *et al.* (2012) used an explanatory sequential design to explain why high organizational-commitment scores coexisted with strong turnover intentions, and Chatman *et al.* (2014) combined a validated culture questionnaire with ethnographic observation to link normative and practical dimensions of culture. Yet comprehensive, reproducible accounts of the full mixed methods process remain rare (Bryman, 2007), and studies situated in sub-Saharan Africa are particularly scarce. Where African contexts are

studied at all, attention typically centers on adapting individual instruments rather than on documenting the integration of an entire protocol, leaving open questions about how quantitative and qualitative strands should be sequenced and combined under the resource and infrastructure constraints specific to the region (Zoogah *et al.*, 2015).

2.3 Theoretical lenses for interpreting generational behavior

The Because triangulation's value lies partly in what it subsequently allows the researcher to explain, three theoretical clusters informed the interpretation of the results reported in Section 4, anticipating the discussion in Section 5.

The first concerns the changing employment relationship. Rousseau's (1995) psychological contract theory frames employment as an exchange of implicit and explicit obligations between employee and organization. More recent work reconceptualizes the security employees seek as a function of transferable skills and labor-market value rather than tenure with a single employer (Fugate *et al.*, 2004), consistent with the broader shift from bounded, organization-centered careers toward boundaryless careers structured around individual mobility across employers (Arthur & Rousseau, 1996). Together, these frameworks offer a direct lens for reconciling stated preferences for stability with simultaneous openness to external opportunities: read against this literature, loyalty conditioned on continued learning and recognition appears less as a contradiction than as the situational logic predicted by employability-based accounts of the employment relationship.

The second concerns recognition and communication. Brun and Dugas (2008) show that workplace recognition operates along distinct formal-transactional and informal-relational dimensions, and that employee satisfaction depends less on the existence of recognition systems than on their perceived authenticity, immediacy, and human character. Whether recognition is experienced this way depends heavily on everyday supervisor-employee communication: leader-member exchange theory holds that the depth and reciprocity of this dyadic relationship, rather than the mere existence of formal procedures, determines whether employees feel valued as individuals or simply evaluated as performers (Graen & Uhl-Bien, 1995). Together, these two bodies of work anticipate a recurring pattern in the data, in which managers' confidence in formal recognition systems is not matched by employees' subjective sense of being recognized.

The third concerns the cultural and hierarchical context in which these dynamics unfold. Hofstede's (2001) power distance dimension captures the

extent to which unequal authority distribution is accepted within organizations, offering a comparative lens on how autonomy is granted and perceived across hierarchical levels. African organizational contexts have been shown to combine imported bureaucratic structures with indigenous relational and communal norms, producing management practices that cannot be fully read through either lens alone (Jackson, 2004). In Madagascar specifically, the relational norm of *fihavanana*, solidarity extending beyond kinship to structure reciprocal obligation, consensus-seeking, and social harmony, has been shown to condition the acceptability and legitimacy of human resource management tools in Malagasy firms (Rasoamparany, 2015). This coexistence of hierarchical distance with strong relational obligation offers a plausible account of why managers can sincerely believe they grant autonomy while employees experience the same practices as constraining.

Read together, these three clusters, psychological contract, employability, and mobility; recognition and communication; and culture and hierarchy, provide the interpretive scaffolding subsequently mobilized in Section 5 to explain the paradoxes reported in Section 4. Their role here is illustrative of a broader methodological point: divergence between quantitative and qualitative strands yields a meta-inference, rather than an unresolved anomaly, only when the qualitative phase is read through a theoretical framework specified in advance rather than assembled after the fact to fit the data.

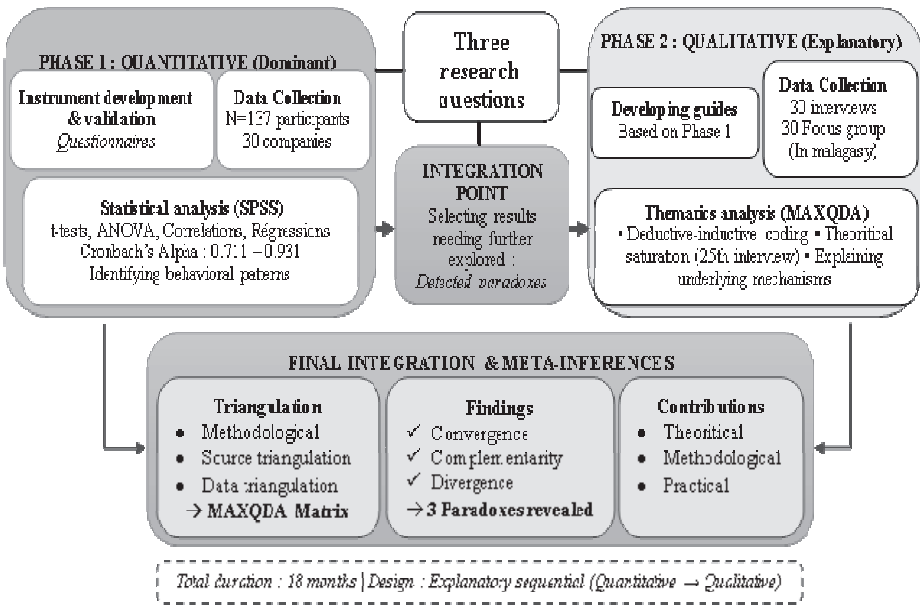
3. Methodology

3.1 Research design and integration logic

This study adopted an explanatory sequential mixed methods design (Creswell & Plano Clark, 2018), combining a dominant quantitative phase with a subsequent qualitative phase intended to explain and deepen its findings (Ivankova *et al.*, 2006). This design was selected for three reasons. First, it allowed unexpected or paradoxical statistical patterns to be identified before they were explained, rather than assuming their meaning in advance. Second, it allowed intensive qualitative resources, interviews, focus groups, and thematic analysis, to be concentrated on the dimensions the quantitative phase identified as most revealing, an efficient use of resources within a single-researcher, eighteen-month protocol. Third, it supported methodological triangulation, the systematic comparison of findings de-

rived from different methods, as a source of both validity and theoretical insight (Denzin, 1978; Patton, 2015). Figure 1 presents the full eighteen-month timeline of the design, distinguishing the two phases and the integration point between them.

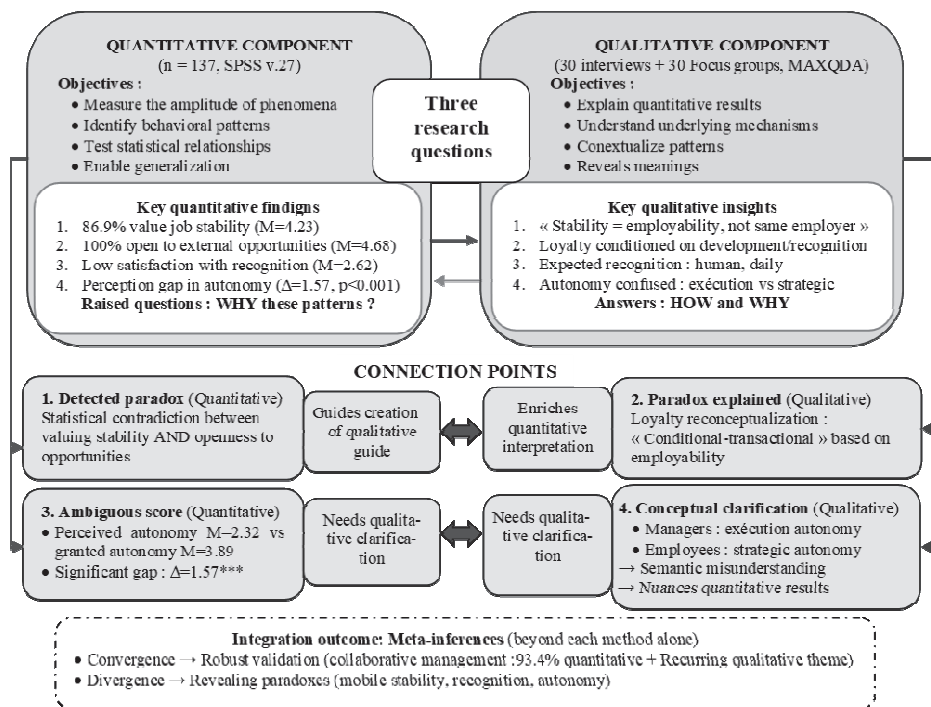
Figure 1: Timeline of the explanatory sequential design



Source: Author (2026)

The design’s single main integration point occurred once the quantitative phase had been fully analyzed. At this point, statistical results directly shaped the qualitative instruments, interview guides and focus group protocols, and the purposive selection of qualitative participants. Three criteria governed which quantitative dimensions were carried forward into the qualitative phase: statistically significant results suggesting generational differences that required contextual explanation; apparent contradictions between variables or groups that challenged existing theoretical expectations; and ambiguous mean scores or high variance suggesting heterogeneous underlying realities. Figure 2 illustrates this integration model and its connection points, showing how specific quantitative findings generated qualitative questions and how the resulting qualitative themes clarified or nuanced the originating quantitative results.

Figure 2: Quantitative-Qualitative integration model with connection points



Source: Author (2026)

3.2 Sampling and participants

The target population comprised Generation Y (born 1981-1996) and Generation Z (born 1997-2012) employees, together with managers of any generational cohort, working in formal-sector companies in Fianarantsoa. A two-stage sampling strategy was used: companies were selected purposively, and individuals within companies were selected using stratified sampling (Patton, 2015). Thirty companies were retained. This number reflected a deliberate trade-off rather than an arbitrary cutoff: it was large enough to capture variation across sector (services, trade, industry, finance) and organizational size, two dimensions expected to shape generational management practices, while remaining feasible for a single researcher to access, obtain consent from, and follow through an eighteen-month protocol com-

binning a survey, thirty individual interviews, and thirty focus groups. Each company was additionally required to meet three further criteria: at least 50 employees, formally registered activity, and the presence of Generation Y and/or Z staff.

Table 1 presents the resulting sample of 137 participants: 107 Generation Y and Z employees (78.1%) and 30 managers (21.9%), with 34.3% women and 65.7% men, and a generational split among employees of 61% Generation Y and 39% Generation Z.

Table 1: Distribution of participants by status, generation, and gender

Status	Generation	Men (n)	Men (%)	Women (n)	Women (%)	Total (n)	Total (%)
Managers	Generation X	20	66.7	1	3.3	21	70.0
	Generation Y	5	16.7	4	13.3	9	30.0
Total managers		25	83.4	5	16.6	30	100
Employees	Generation Y	41	38.3	25	23.4	66	61.7
	Generation Z	24	22.4	17	15.9	41	38.3
Total employees		65	60.7	42	39.3	107	100
Overall total		90	65.7	47	34.3	137	100

Source: Author (2026)

Two clarifications are necessary to remove any ambiguity about how this sample was constructed. First, role and generation were independent classification criteria: managers were recruited without regard to their own generational cohort, since the object of interest for this sub-sample was managerial practice rather than generational identity. Table 1 accordingly shows that 9 of the 30 managers (30%) belonged to Generation Y, the same cohort studied among employees. This overlap was expected rather than problematic: each participant was classified once, by role, and no individual was counted in both the manager and employee totals reported above.

Second, the quantitative and qualitative samples overlapped differently for the two roles, and this difference is made explicit here rather than left implicit. All 30 managers who completed the questionnaire were subsequently interviewed individually, so the manager interviews and the manager survey drew on the same 30 individuals, permitting direct triangulation at the level of specific respondents. Employees were not restricted in the same way: because thirty focus groups of approximately 13 participants each required substantially more participants than the 107-person quantitative employee sample could supply on its own, focus group membership was drawn more broadly from the Generation Y and Z employees of the same 30 companies rather than limited to the 107 quantitative respondents. The two employee sub-samples therefore overlapped only partially, and tri-

angulation at the employee level operated at the level of the generational cohort and the organizational population rather than at the level of specific matched individuals.

Given this purposive, non-probability sampling strategy at both stages, the findings reported in Section 4 support analytical generalization, extending observed patterns to organizational contexts sharing comparable structural and cultural characteristics, and transferability, whereby readers judge applicability to their own settings based on the contextual detail provided here, rather than statistical generalization to a defined population (Yin, 2018; Lincoln & Guba, 1985).

3.3 Data collection procedures

Quantitative data collection took place over an eight-week period, from 10 January 2024 to 9 March 2024, using a mixed administration mode: 72% of questionnaires were completed online and 28% on paper, an option offered to accommodate participants with limited or inconsistent internet access. This flexible approach contributed to an 85% response rate. Each participation was preceded by written informed consent detailing the study's objectives, data confidentiality, and the right to withdraw without justification, and anonymity was ensured from the outset through alphanumeric participant codes. Access to the 30 participating enterprises was facilitated through a partnership agreement between the university and local enterprises, which supported participant recruitment while ensuring the independence of the research process. The complete research protocol, encompassing both quantitative and qualitative phases, spanned from January 2024 to August 2025 and was conducted in accordance with Malagasy Law No. 2014-038 on the protection of personal data. The qualitative phase began once the quantitative analysis was complete, allowing the scheduling of interviews and focus groups to be guided by the findings requiring further clarification rather than by a predetermined timetable.

3.4 Quantitative instrument development, translation, and validity

Two structured questionnaires, one for employees and one for managers, were developed from validated international scales adapted to the Malagasy context; Table 2 details their structure, including the Big Five personality inventory (Costa & McCrae, 1992) and the perceived stress scale (Cohen *et al.*, 1983) used as source instruments.

Table 2: Questionnaire structure

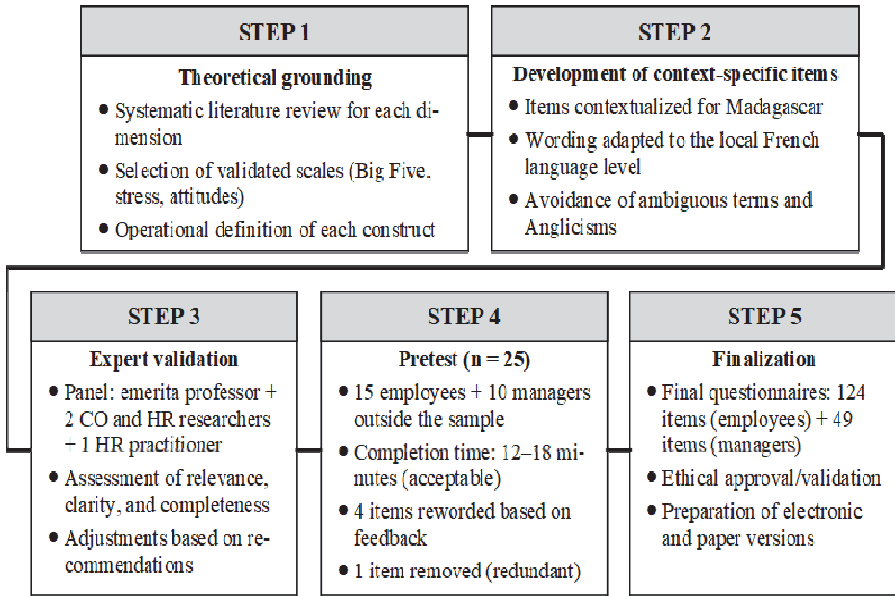
Questionnaire	Dimension	Items	Reference
Managers	Big Five	25	Costa & McCrae (1992)
	Stress	3	Cohen <i>et al.</i> (1983)
	Organizational structure	4	Developed items
	Communication mode	5	Developed items
	Management style	3	Developed items
	Decision-making method and format	3	Developed items
	Types and management of conflict	4	Developed items
	Open-ended questions	2	Developed items
Employees	Big Five	25	Costa & McCrae (1992)
	Stress	3	Cohen <i>et al.</i> (1983)
	Work attitudes	13	Porter <i>et al.</i> (1974)
	Changing expectations	10	Developed items
	Communication	9	Developed items
	Motivation and retention	10	Developed items
	Technology	7	Developed items
	Training and development	12	Developed items
	Leadership and management	11	Developed items
	Diversity and inclusion	10	Developed items
	Quality of work life	14	Developed items

Source: Author (2026)

Linguistic and cultural adaptation was addressed primarily at the item-development stage: items were drafted directly in French at a register appropriate to the Malagasy context, with explicit attention to avoiding Anglicisms and ambiguous terms, then reviewed independently by the expert panel described below and revised following the pretest. For the qualitative material, interviews and focus groups were conducted in Malagasy and transcribed in full; the principal researcher translated the transcripts into French, after which a linguistic expert independently compared each translated transcript against the original audio recording to verify semantic and cultural fidelity, with disagreements resolved by consensus. Verbatim quotations used in the results were checked against this dual-verified translation, and member checking, described in Section 3.5, gave eight participants the opportunity to confirm that translated excerpts faithfully represented their original statements.

Content validity followed a five-step process summarized in Figure 3: theoretical grounding and construct definition; development of context-specific items; independent review by a four-member expert panel comprising an emerita professor of organizational behavior, two human resource management researchers, and a senior HR practitioner; a pretest with 25 participants outside the final sample, after which four ambiguous items were reworded and one redundant item removed; and finalization of the 124-item employee and 49-item manager questionnaires.

Figure 3: Multistage questionnaire content validation process



Source: Author (2026)

This procedure provides face and content validity evidence for the instruments. A quantitative construct-validity check, such as exploratory or confirmatory factor analysis (EFA or CFA) of the retained items, was not performed in the analysis reported here. Consequently, construct validity rests strictly on the rigorous content-validation procedure described above rather than on a factor-analytic result. Internal consistency reliability was assessed using Cronbach's alpha for all eleven measured dimensions; Table 3 reports coefficients ranging from 0.711 (Leadership and Management) to 0.931 (Communication and Collaboration), all above the 0.70 threshold recommended by Nunnally and Bernstein (1994).

Cronbach's alpha, however, is an internal-consistency indicator rather than a complete measure of a scale's psychometric quality: it assumes a unidimensional, tau-equivalent structure, and its value can rise with the number of items on a scale independently of how well those items cohere (McNeish, 2018). Coefficients toward the lower end of the acceptable range, such as Leadership and Management ($\alpha = 0.711$) and Technology ($\alpha = 0.741$), should accordingly be read as meeting a minimum reliability threshold rather than as confirmation that each dimension is strictly unidi-

mensional. A model-based alternative such as McDonald’s omega, which does not require tau-equivalence, would offer a stronger complementary check on dimensionality. Within these limits, the coefficients obtained indicate a level of internal consistency adequate for the comparative and correlational analyses reported in Section 4.

Table 3: Cronbach’s Alpha Coefficients (α)

Dimension	α	Sample	Interpretation
Big Five (Managers)	0.856	Managers (n = 30)	Good
Big Five (Employees)	0.810	Employees (n = 107)	Good
Communication and Collaboration	0.931	Employees (n = 107)	Excellent
Work Attitudes	0.895	Employees (n = 107)	Good
Training	0.828	Employees (n = 107)	Good
Motivation and Talent Retention	0.813	Employees (n = 107)	Good
Diversity and Inclusion	0.775	Employees (n = 107)	Acceptable
Changes in Management Expectations	0.764	Employees (n = 107)	Acceptable
Quality of Work Life	0.755	Employees (n = 107)	Acceptable
Technology	0.741	Employees (n = 107)	Acceptable
Leadership and Management	0.711	Employees (n = 107)	Acceptable

Source: Author (2026)

3.5 Qualitative phase: sampling, coding, and reliability

The qualitative phase comprised 30 individual semi-structured interviews with managers (mean duration 1 hour 10 minutes) and 30 focus groups with employees (mean of approximately 13 participants per group, mean duration 1 hour 35 minutes). Managers who reported specific difficulties managing younger employees were prioritized for interviews, while focus groups were deliberately composed heterogeneously across Generation Y and Z to encourage open expression and reduce hierarchical bias. Interview guides and focus group protocols were built directly from the quantitative findings requiring clarification; for example, the statistical co-existence of high stability scores and universal openness to external opportunities was translated into direct follow-up questions asking what job stability meant to participants personally and under what conditions they would consider leaving their current employer.

Thematic analysis followed Braun and Clarke’s (2006) six-phase method, combining deductive codes derived from the theoretical framework with inductive codes emerging from the data; Figure 4 summarizes the six phases as applied in this study.

All coding was conducted in MAXQDA, which supported hierarchical code organization, pattern identification, and the construction of comparative

matrices. Theoretical saturation was reached at the 25th manager interview, with the remaining five interviews serving to confirm rather than extend the coding scheme. Coding reliability rested on three complementary procedures rather than a single indicator. Member checking was carried out with eight strategically selected participants, four managers and four employees, who reviewed their transcripts and confirmed both the factual accuracy and the interpretive fidelity of the coding applied to their statements. Peer debriefing with two external researchers specializing in qualitative methods challenged the coding scheme, tested alternative interpretations, and helped identify potential interpretive bias; this debriefing functioned as the study’s primary coding-verification mechanism. Finally, an audit trail documented every methodological decision from initial coding through final theme generation, supporting traceability and reproducibility of the analytic process.

Figure 4: The six phases of thematic analysis according to Braun & Clarke

Phase 1 Familiarization with the Data • Repeated reading of the transcripts • Immersive and reflexive note-taking • Identification of preliminary patterns	Phase 2 Generation of Initial Codes • Deductive codes: derived from the theoretical framework (Big Five, motivation, etc.) • Inductive codes: emerging from the data (mobile stability, human recognition) • Systematic coding in MAXQDA	Phase 3 Searching for Themes • Grouping codes into candidate themes • Creation of thematic maps • Hierarchical organization (themes/subthemes)
Phase 4 Reviewing Themes • Verification of internal coherence (codes → themes) • Verification of external distinction (themes from one another) • Reorganization where necessary	Phase 5 Defining and Naming Themes • Writing clear definitions for each theme • Concise and evocative naming • Identification of representative excerpts	Phase 6 Producing the Analytical Report • Selection of the most illustrative excerpts • Connection between analysis and research question • Integration with quantitative data (triangulation)

Source: Adapted from Braun & Clarke (2026)

3.6 Integration and triangulation

The Integration was operationalized at three levels: methodological triangulation, comparing findings generated by quantitative and qualitative methods; source triangulation, comparing perspectives across managers and employees, Generation Y and Generation Z, and different sectors and company sizes; and temporal triangulation, comparing experiences across career stages. The central analytic tool for this integration was a set of triangulation ma-

trices constructed in MAXQDA. Each matrix was organized with quantitative indicators, mean scores and statistical test results, as rows and the corresponding qualitative codes and themes as columns. Reading across each row made it possible to classify the relationship between the two data sources at that intersection as convergent, when qualitative themes echoed the quantitative pattern; complementary, when qualitative themes added meaning to a quantitative pattern without contradicting it; or divergent, when qualitative themes appeared to contradict or complicate the quantitative pattern.

This row-by-row classification is what allowed the three behavioral paradoxes reported in Section 4 to be identified systematically rather than impressionistically: each paradox originated as a divergent cell in a triangulation matrix, which was then interpreted qualitatively to resolve the apparent contradiction. Tables 4 and 5, presented in Section 4, reproduce two such matrices in full. This sequential logic, quantitative results generating specific qualitative questions, which were then addressed through purposively selected participants and targeted interview and focus group content, with the resulting qualitative themes read back against the originating quantitative indicator through the triangulation matrices, constitutes the reproducible protocol this article documents. Its central methodological claim is that meta-inferences, conclusions that neither strand could support alone, depend on this explicit, row-by-row triangulation structure rather than on the general practice of collecting both types of data within a single study.

3.7 Ethical considerations

The research was conducted in strict compliance with applicable ethical standards, in accordance with Malagasy Law No. 2014-038 on the protection of personal data. Four ethical principles guided the entire process: informed voluntary consent (obtained in writing before any participation, with a detailed explanation of the objectives and procedures), confidentiality and anonymity (systematic anonymization from the point of data collection, secure data storage, and restricted access to the researcher), nonmaleficence (non-stigmatizing wording, avoidance of intrusive questions, and special attention to participant well-being), and respect for autonomy (the right to withdraw at any time without justification or consequences, and the right to refuse to answer certain questions). Particular attention was paid to fairness in participant recruitment in order to avoid any discrimination based on gender, ethnic background, or socioeconomic status. These ethical considerations, far from being mere formalities, constitute an essential dimension of the quality and scientific legitimacy of the research.

4. Results

4.1 *Convergence: cross-validation of findings*

This first set of results addresses how triangulation strengthened the validity of the study's conclusions through convergence, independent corroboration of the same underlying pattern by both quantitative and qualitative data. The clearest example concerned the near-unanimous preference for collaborative and participative management among Generations Y and Z.

Quantitatively, 93.4% of employees expressed a strong preference for participative management ($M = 4.51$, $SD = 0.62$), with no statistically significant difference between Generation Y and Generation Z ($t = 1.23$, $p = 0.221$, Cohen's $d = 0.18$, a negligible effect size). This preference was reflected across specific survey items: managers actively encouraging employees to share their opinion on decisions ($M = 4.45$, $SD = 0.58$), substantial employee participation in decisions directly affecting daily work ($M = 4.38$, $SD = 0.64$), and managers genuinely taking employee suggestions into account ($M = 4.52$, $SD = 0.55$).

The qualitative data corroborated this pattern independently rather than simply restating it. The theme of participative management and active listening emerged spontaneously, without being prompted by the interview or focus group guide, in 27 of the 30 focus groups (90%). As one focus group put it, "What we really want is to be listened to like responsible adults, not just to receive orders to carry out without thinking" (FG-3); another added that a good manager today "is someone who systematically asks for our opinion before deciding, who sees us as partners and not subordinates" (FG-3). Managers acknowledged this same shift independently in their own interviews: "With today's young employees, we absolutely can no longer just give instructions and wait for execution. We have to explain the why, open discussion, and involve them in reflection" (M-14).

The convergence between the quantitative pattern, consistently high scores with no generational difference, and the qualitative pattern, a theme recurring across the large majority of focus groups and independently acknowledged by managers themselves, establishes the aspiration for collaborative and participative management as a robust and cross-cutting characteristic of both generational cohorts studied, rather than an artifact of either method taken alone.

This pattern of near-unanimous preference for participative management is broadly consistent with results reported elsewhere in single-method survey research on younger cohorts' workplace expectations, although independent qualitative corroboration of the kind obtained here, rather than

convergence inferred from quantitative results alone, is less commonly documented in that literature.

4.2 Complementarity: mutual enrichment of perspectives

The second set of results addresses how triangulation enriched understanding through complementarity, each method illuminating a distinct facet of the same phenomenon so that the combined picture exceeded what either method offered alone. The finding concerning job stability illustrates this complementary dynamic.

Quantitatively, 86.9% of employees assigned high or very high importance to job stability ($M = 4.23$, $SD = 0.84$), a score that, considered alone, would suggest a conservative, security-oriented orientation comparable to that often attributed to earlier generations.

The qualitative data added a distinction that was entirely invisible in the quantitative item, which asked only about job stability in generic terms. Participants distinguished explicitly between remaining with a single employer and maintaining a transferable, recognized skill set that secures employability more broadly, regardless of employer: "For me personally, stability does not mean staying in the same company for 20 or 30 years like our parents did. It means having solid, recognized, transferable skills that allow me to find work elsewhere easily if needed, if things get worse here" (FG-2). Several participants linked this distinction directly to the volatility of the local economic context: "In Madagascar, with all the economic precariousness, business closures, repeated crises, you absolutely cannot naively rely on a single company to secure your future. You have to develop your skills to have options and to be attractive in the labor market" (FG-6).

Read together, the quantitative result established the scale and generality of the phenomenon, a large majority of employees value stability, while the qualitative result established its specific content in this context, stability refers primarily to employability rather than to attachment to a single employer. Neither result alone would have supported this conclusion: the quantitative score without qualitative elaboration was open to a superficial reading as continuity with more traditional generational attitudes toward job security, while the qualitative distinction without the quantitative prevalence figure would have remained an intriguing but unquantified observation drawn from a small number of participants.

This reinterpretation of stability as employability rather than organizational tenure echoes a broader shift noted in research on contemporary career patterns, although that shift is more often inferred from qualitative or

conceptual work than demonstrated through the explicit quantitative-qualitative pairing presented here.

4.3 Revelatory divergence: three behavioral paradoxes

The third and most substantial set of results addresses how triangulation generated new theoretical insight through divergence, cases in which quantitative and qualitative findings appeared, at first reading, to contradict one another. Rather than indicating measurement error or a flaw in the study design, each apparent contradiction identified here pointed to a specific behavioral paradox that required qualitative explanation to resolve. Three such paradoxes were identified, each following the same underlying logic: a statistically robust quantitative contradiction, resolved by a qualitative account of the mechanism producing it.

4.3.1 The mobile stability paradox

Quantitatively, the same 86.9% of employees who placed high value on job stability ($M = 4.23$, $SD = 0.84$) also reported, without exception, being open to career opportunities outside their current company (100%, $M = 4.68$, $SD = 0.51$), and 78.5% reported being actively willing to change jobs frequently to advance their careers ($M = 3.98$, $SD = 0.87$). Taken at face value, these two patterns are difficult to reconcile: a stronger stated preference for stability would ordinarily be expected to coincide with lower, not higher, openness to mobility.

The qualitative data resolved this apparent contradiction by showing that participants had redefined the terms of organizational loyalty rather than holding an internally inconsistent pair of attitudes. As one participant explained, "I absolutely want to stay in my current company, but only if it continues to teach me, help me grow, and develop me. If I stop progressing professionally, if I no longer learn anything, of course I will look elsewhere for something better" (FG-3). Another rejected the premise that mobility signaled disloyalty: "We are not disloyal at all, as people often accuse us of being. In fact, we are very loyal AS LONG AS the company truly invests in us, respects us, and recognizes us. It is a give-and-take relationship, a fair and reciprocal one" (FG-4). Table 4 presents the full triangulation matrix for this paradox, crossing the quantitative indicators against the corresponding qualitative explanations.

Table 4: Triangulation matrix: The mobile stability paradox

Indicator	Quantitative data	Qualitative explanation
Stability valued	86.9% agree (M = 4.23, SD = 0.84)	Stability matters in Madagascar because the economic context is difficult (FG-6)
Openness to opportunities	100% open (M = 4.68, SD = 0.51)	If we stop progressing, we will naturally look elsewhere (FG-2)
Apparent paradox	Statistical contradiction	Reconceptualization of loyalty
Resolution	Conditional loyalty	Stability = sustainable employability, not the same employer I stay IF I learn, IF I am recognized (FG-7)

Source: Author (2026)

Three explicit conditions structured this conditional loyalty in participants' accounts: continuous and meaningful skill development; fair and authentic recognition of contributions; and a non-toxic, non-authoritarian work environment. Loyalty accordingly functioned not as an unconditional, fixed disposition but as a negotiable good exchanged for concrete investment in employability, a pattern the quantitative data alone registered only as an unexplained statistical contradiction.

This pattern of loyalty conditioned on employability rather than tenure diverges from earlier generational research that treated a stated preference for stability and an openness to mobility as mutually exclusive orientations, and instead aligns with more recent accounts describing the employment relationship as a negotiated, skills-based exchange.

4.3.2. The recognition misunderstanding

Quantitatively, 60% of managers reported favoring formal, structured recognition systems such as performance bonuses and merit-based promotions, and 73% believed their current recognition practices were adequate or excellent (M = 3.67, SD = 0.82). Employees, by contrast, reported markedly lower satisfaction with the recognition they actually received (M = 2.62, SD = 1.12), with 67% scoring below the midpoint of the scale. The resulting gap between managers' confidence and employees' satisfaction, 1.05 points on the five-point scale ($t = 6.23$, $p < .001$, Cohen's $d = 0.98$), was both statistically significant and practically large.

The qualitative data clarified that this gap reflected a conceptual mismatch rather than a simple shortfall in the quantity of recognition provided. Managers described recognition primarily in terms of formal, measurable systems: "We introduced merit bonuses based on objective KPIs and transparent promotions based on performance. It is very concrete, measurable,

and fair" (M-08); another manager described public quarterly recognition of top performers as "transparent, motivating, and fair" (M-15). Employees, by contrast, explicitly and critically distinguished this transactional approach from the kind of recognition they valued most: "Year-end bonuses are nice financially, but that is really not what deeply motivates us or makes us want to stay. A simple sincere, personalized thank-you from our boss every day matters much more emotionally" (FG-3). As another participant put it, "We want to be recognized as whole persons, with our human qualities, not just as performance numbers or machines producing results" (FG-5). Table 5 presents the triangulation matrix for this paradox, crossing managers' and employees' quantitative results and qualitative statements.

Table 5: Triangulation matrix: The case of recognition

Source	Quantitative results	Qualitative findings
Managers	60% favor formal systems 73% believe practices are adequate	"We introduced bonuses, promotions... It is concrete" (M-08)"Results are rewarded fairly" (M-15)
Employees	Satisfaction: 2.62/567% dissatisfied	"Bonuses are fine, but a sincere thank-you matters more" (FG-3)"We want to be recognized as people, not numbers" (FG-5)
Convergence	Significant gap: $\Delta = 1.05$ ($p < 0.001$)	Conceptual gap: Managers → transactional recognition Employees → relational recognition

Source: Author (2026)

Managers and employees were, in effect, using the same word, recognition, to refer to two different constructs: a formal-transactional one for managers, and an informal-relational one for employees. This conceptual gap, rather than a simple deficit in the quantity of recognition provided, accounts for the coexistence of managers' confidence and employees' dissatisfaction observed in the quantitative data.

This divergence between formal and relational conceptions of workplace recognition is consistent with distinctions drawn elsewhere between transactional and relational approaches to recognition, although the present data demonstrate the practical organizational consequence of this conceptual gap, mutual misunderstanding between hierarchical levels, more directly than survey data alone typically can.

4.3.3. The illusory autonomy paradox

Quantitatively, 67% of managers reported granting substantial autonomy to their employees ($M = 3.89$, $SD = 0.76$), while employees reported perceiving markedly more limited autonomy ($M = 2.32$, $SD = 0.94$), with

71% expressing clear dissatisfaction with their actual level of autonomy. The resulting gap, 1.57 points ($t = 8.76$, $p < .001$, Cohen's $d = 1.52$), was the largest of the three effect sizes identified in this study, indicating a fundamental disagreement between managers and employees rather than a difference of degree.

The qualitative data showed that managers and employees applied the same term, autonomy, to two distinct organizational realities. Managers described autonomy primarily as freedom in how work was executed: "I let my teams work however they want; I absolutely do not micromanage" (M-12); another explained that employees "can freely manage their time, choose their tools, and organize their tasks however they like. They are completely autonomous in execution" (M-22). Employees, by contrast, described genuine autonomy as participation in decisions about what work should be done and why: "We may be able to choose HOW to do our work in practice, but never WHAT exactly to do or WHY we are doing it. That is really not true professional autonomy" (FG-3); as another participant summarized, real autonomy meant "taking part in important decisions about the goals to be achieved and the strategic direction of our work, not just the technical details of execution" (FG-5).

This distinction between execution autonomy, which managers granted and believed employees experienced, and strategic autonomy, which employees expected and did not perceive themselves as having, accounts for the large and statistically robust gap between the two groups' reports without requiring either group's account to be treated as inaccurate or exaggerated.

This semantic divergence between execution-level and strategic-level autonomy has been noted in organizational research on delegation and empowerment, although it is more commonly discussed there as a conceptual distinction than demonstrated, as here, through a quantitatively measured perception gap paired with a qualitative account of why that gap exists.

4.4 Integrative synthesis

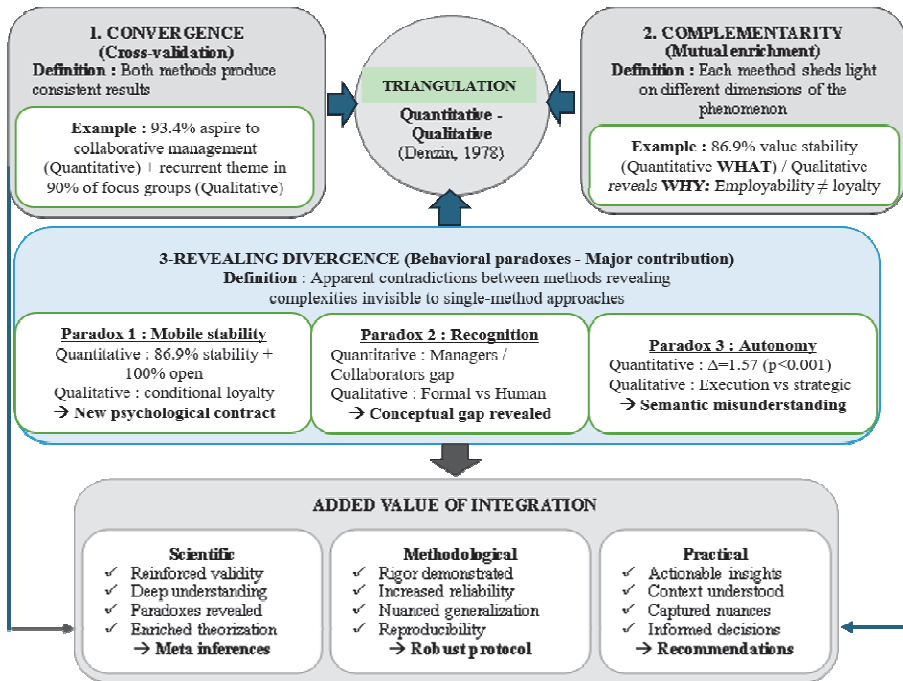
The pattern across all three forms of triangulation reported above addresses the overarching question of how methodological integration generates meta-inferences, conclusions that neither the quantitative nor the qualitative strand could have supported in isolation. Figure 5 presents the complete integrative model developed in this study, summarizing how convergence, complementarity, and divergence each generated a distinct category of contribution.

Convergence, illustrated by the participative-management finding in which 93.4% of quantitative respondents and 90% of focus groups independently pointed to the same pattern, strengthened the internal and external validity of that specific conclusion through methodological corroboration. Complementarity, illustrated by the stability finding in which the quantitative data established prevalence and the qualitative data established meaning, stability as employability rather than organizational tenure, produced a more complete and nuanced understanding than either method offered alone. Divergence, illustrated by the three behavioral paradoxes, produced the study's most substantial contributions: findings that a quantitative-only design would have registered as unexplained statistical anomalies, and that a qualitative-only design would have described richly but without any indication of how widespread or statistically robust the underlying pattern was.

Across all three paradoxes, the same underlying mechanism was at work: a single term, loyalty, recognition, or autonomy, carried different meanings for different organizational actors, and this semantic gap, rather than measurement error or respondent inconsistency, explained the statistical divergence observed in the quantitative data. Identifying this mechanism required both strands of data together: the quantitative results established that each gap was large, statistically robust, and not attributable to chance, while the qualitative results established what the gap actually consisted of and why it arose. Table 4 and Table 5 make this joint dependence explicit by presenting the quantitative and qualitative evidence for two of the three paradoxes side by side within a single matrix, rather than as separate quantitative and qualitative results reported one after the other.

Considered together, the three paradoxes indicate that divergence between quantitative and qualitative findings, in this study, was not distributed randomly across topics: it concentrated specifically on the terms employees and managers used to describe the employment relationship itself, loyalty, recognition, and autonomy, rather than on peripheral or purely descriptive items. Where the quantitative and qualitative strands addressed more peripheral or purely descriptive questions, such as the prevalence of a preference for participative management, they converged rather than diverged. This distribution of results across convergence, complementarity, and divergence is itself a finding: it suggests that triangulation is most likely to surface a genuine paradox, rather than simple corroboration or elaboration, at precisely the points where organizational actors rely on shared vocabulary to describe relationships whose underlying expectations are not, in fact, shared.

**Figure 5: Integrative model
of methodological triangulation contributions**



Source: Author (2026)

5. Discussion

The results reported above acquire their full significance only when read as products of integration rather than as separate quantitative and qualitative findings. Each paradox interpreted below is a meta-inference in the strict sense: a conclusion that neither strand could have supported alone, since the quantitative data established that a contradiction existed and was not attributable to chance, while the qualitative data explained what produced it. The discussion that follows accordingly treats the three theoretical clusters mobilized in Section 2, the psychological contract and employability, recognition and communication, and culture and hierarchy, not as independent literatures to be reviewed, but as interpretive resources that integration made necessary in the first place.

Two further results merit brief comment before turning to the paradoxes. The near-unanimous convergence on participative management, corrob-

orated independently by managers and employees, indicates that some generational expectations are stated with enough clarity and consistency that a single well-designed method would likely have detected them; triangulation here served a confirmatory rather than a discovery function. The stability-as-employability finding occupies an intermediate position: the quantitative data alone would have misread a high stability score as continuity with earlier generations' attachment to a single employer, an error the qualitative data corrected. Read together, these two results and the three paradoxes below span the full range of what triangulation can contribute, from simple corroboration to the resolution of genuine contradiction, and this range is itself part of the study's methodological contribution.

The mobile stability paradox nuances rather than confirms classical psychological contract theory (Rousseau, 1995): participants did not abandon the notion of a reciprocal exchange between employee and organization, but re-priced its currency, from tenure to continued investment in employability. This finding extends employability-based accounts of the employment relationship (Fugate *et al.*, 2004) and boundaryless-career models (Arthur & Rousseau, 1996) by showing that, in a context of structural economic precariousness, employability functions less as an alternative to organizational attachment than as its precondition: employees remain loyal precisely because, and only as long as, the organization visibly builds their employability. This reframing diverges from earlier generational research that read a stated preference for stability as evidence of a return to traditional, tenure-based loyalty, and instead converges with more recent scholarship treating career mobility as a rational response to institutional volatility rather than a fixed generational trait.

The recognition misunderstanding confirms the formal-relational distinction identified in the recognition literature (Brun & Dugas, 2008), while enriching it by demonstrating its organizational cost: managers and employees were not disagreeing about how much recognition existed, but about what recognition was for. Read through leader-member exchange theory (Graen & Uhl-Bien, 1995), the gap indicates that formal recognition systems cannot substitute for the relational quality of everyday supervisor-employee exchange; where that exchange is thin, even objectively generous formal systems are experienced as impersonal. This pattern converges with human resource research documenting the limits of transactional recognition, but diverges from managers' own assumption, expressed repeatedly in this study's interviews, that formalizing recognition procedures is sufficient to address generational expectations, a divergence made visible only because the qualitative data were read against, rather than merely alongside, the quantitative gap.

The illusory autonomy paradox is best explained by the coexistence, in the Malagasy organizational context, of hierarchical distance (Hofstede, 2001) with the strong relational obligation associated with *fihavanana* (Rasoamparany, 2015): managers who see themselves as approachable and consultative may not recognize that the same hierarchical distance leads employees to withhold the strategic-level input they privately expect to give. The finding nuances power-distance accounts of autonomy, which typically treat hierarchy as a single dimension, by showing that relational closeness and decision-making distance can coexist rather than move together. This divergence between managers' and employees' accounts converges with African management research describing a layering of imported bureaucratic structures over indigenous relational norms (Jackson, 2004), and suggests that autonomy, in such settings, should be assessed separately at the execution and strategic levels rather than as a single construct.

Beyond these substantive findings, the central contribution of this article is methodological. The explanatory sequential design demonstrated its value not merely by combining two methods but by using quantitative divergence as a deliberate trigger for qualitative inquiry, a discipline that produced three theoretically productive paradoxes rather than three unexplained anomalies. The row-by-row triangulation matrix documented in Section 3 operationalized this discipline in a way other researchers can reproduce, and nothing about its logic, comparing quantitative indicators against qualitative themes to classify convergence, complementarity, or divergence, is specific to Madagascar, to Generations Y and Z, or to organizational behavior; the protocol should transfer readily to other populations, sectors, and cultural settings facing comparably complex, multi-actor phenomena.

These methodological gains carry a practical corollary. Because the protocol traced each managerial misunderstanding to its precise conceptual source, mobility mistaken for disloyalty, formal systems mistaken for recognition, execution autonomy mistaken for strategic autonomy, it offers managers a more targeted diagnostic than either a survey or a set of interviews would supply alone. This diagnostic value follows directly from the methodological approach adopted here; it is offered as an illustration of what rigorous integration makes possible for practice, rather than as the study's principal claim.

6. Conclusion

This study aimed to document a reproducible explanatory sequential mixed-methods protocol capable of transforming statistical contradictions into theoretically productive knowledge, specifically applied to Generation Y and Z management in Fianarantsoa. The research identified three behavioral paradoxes: conditional loyalty structured around employability, a conceptual gap between formal and relational recognition, and a semantic divergence between execution and strategic autonomy. These paradoxes underscore the inadequacy of single-method designs in capturing complex generational dynamics. Crucially, the findings demonstrate that quantitative-qualitative divergence serves as a robust discovery mechanism rather than a threat to validity.

The central contribution is fundamentally methodological. We provide a transferable, rigorously documented framework for explanatory sequential integration, featuring a row-by-row triangulation matrix alongside explicit validation, translation, and coding procedures. This protocol enables researchers to systematically convert methodological friction into actionable meta-inferences, independent of the specific population or sector investigated. Managerially, this approach equips organizations to accurately distinguish perceptual generational misunderstandings from those necessitating structural interventions.

Despite these contributions, several limitations persist. First, the purposive sample is restricted to a single mid-sized city, limiting the generalizability of the reported patterns. Second, the cross-sectional design precludes assessing the temporal evolution of these perceptions. Third, autonomy expectations likely vary by job type and education; thus, the identified autonomy paradox reflects a cohort-level tendency rather than a homogeneous expectation. Finally, the protocol's methodological richness is highly resource-intensive, requiring significant logistical capacity that may constrain its application in resource-limited settings.

Future research should replicate this protocol across diverse cultural and organizational environments to empirically test its transferability. Longitudinal designs are strongly recommended to examine whether conditional loyalty and contested autonomy persist as cohorts evolve. Additionally, comparative cross-country analyses and applications to other sectors experiencing hierarchical misunderstandings would further validate this framework. Ultimately, this study establishes that methodological divergence, when systematically triangulated through rigorous integration, yields profound insights for both management science and organizational practice.

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Beyond Assistance: A Role-Based Conceptual Framework for Generative and Agentic Artificial Intelligence in Case-Based Management and Governance Research

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Abstract

The use of artificial intelligence (AI) in qualitative management research has so far been framed predominantly as assistance: a researcher interacting with generative AI during the design or analysis of a case study. Yet methodological discussions still offer limited understanding of how qualitatively different forms of AI involvement reconfigure the production of theoretical insight in case-based research. The existing differentiation remains stage-bound and tool-centred; what is missing is a systematic coupling of AI roles to forms of theorising and to specific validity threats.

Drawing on a review of 139 documents, the authors develop a four-role conceptual framework, AI as Discoverer, Selector, Co-Constructor and Generator. Each role is examined through affordance theory, theorising from cases and sociomaterial perspectives in order to analyse how different forms of AI involvement influence theorising, interpretation and engagement with empirical material.

The study's contribution lies less in naming four roles than in coupling them to forms of theorising and to role-specific validity threats. AI involvement cannot be treated as a uniform methodological condition: different roles raise different implications for contextual understanding, methodological rigor, researcher oversight and the empirical status of research material. We advance six propositions linking each

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AI role to conditions of legitimacy, characteristic validity threats and disclosure requirements, and we illustrate the framework through a corporate-governance research scenario. The paper closes with role-sensitive guidance for authors, reviewers and editors of governance and R&D case research.

Keywords: case study; qualitative research; artificial intelligence; affordance theory; socio-materiality; theorising.

Sommario

L'uso dell'intelligenza artificiale (IA) nella ricerca qualitativa in ambito manageriale è stato finora inquadrato prevalentemente come assistenza ossia un ricercatore interagisce con l'IA generativa durante la progettazione o l'analisi di un caso di studio. Tuttavia, il dibattito metodologico offre ancora una comprensione limitata di come forme qualitativamente diverse di coinvolgimento dell'IA riconfigurino la produzione di conoscenze teoriche nella ricerca basata su casi studio. La differenziazione esistente rimane legata alle fasi del processo e centrata sullo strumento. Ciò che manca è un collegamento tra i ruoli dell'IA, le forme di teorizzazione e le specifiche minacce alla validità.

Sulla base di una revisione di 139 documenti, gli autori sviluppano un framework concettuale a quattro ruoli: IA come *Discoverer* (Scopritore), *Selector* (Selezionatore), *Co-Constructor* (Co-costruttore) e *Generator* (Generatore). Ciascun ruolo viene esaminato attraverso la teoria dell'*affordance*, la teorizzazione a partire dai casi e le prospettive sociomateriali, al fine di analizzare come le diverse forme di coinvolgimento dell'IA influenzino la teorizzazione, l'interpretazione e l'interazione con il materiale empirico.

Il contributo dello studio risiede meno nella definizione dei quattro ruoli, quanto piuttosto nel loro collegamento a specifiche forme di teorizzazione e a minacce alla validità proprie di ciascun ruolo. Il coinvolgimento dell'IA non può essere trattato come una condizione metodologica uniforme: ruoli diversi comportano implicazioni diverse per la comprensione contestuale, il rigore metodologico, la supervisione da parte del ricercatore e lo status empirico del materiale di ricerca. Gli autori avanzano sei proposizioni che collegano ciascun ruolo dell'IA a condizioni di legittimità, minacce caratteristiche alla validità e requisiti di trasparenza, illustrando il framework attraverso uno scenario di ricerca sulla corporate governance. Il paper si conclude con indicazioni operative, sensibili al ruolo dell'IA, rivolte ad autori, revisori ed editor della ricerca su casi di governance e R&D.

Parole chiave: casi studio; ricerca qualitative; intelligenza artificiale; teoria dell'*affordance*; sociomaterialità; teorizzazione.

1. Introduction

The case study has been described as both the most flexible and the most debated research strategy in management scholarship (Yin, 2018; Eisenhardt and Graebner, 2007; Welch *et al.*, 2019). Its persistent appeal lies in the capacity to investigate complex, context-sensitive and processually dynamic phenomena that cannot be fully captured by standardized indicators (Gummesson, 2017; Cornelissen, 2017). Its legitimacy, however, continues to depend on the rigor, transparency and reflexivity with which researchers design, conduct and theorise from cases (Hoorani *et al.*, 2019; Lindgreen *et al.*, 2021; Pillai *et al.*, 2024). Theoretical insight in case research is therefore closely tied to methodological judgment: researchers actively interpret, select and construct theoretically meaningful evidence.

Against this background, artificial intelligence (AI) is acquiring relevance in management research methodology at remarkable speed. Generative AI tools such as ChatGPT, Claude and Gemini are now routinely employed by doctoral candidates and senior scholars alike for tasks ranging from idea generation to thematic analysis (Naeem *et al.*, 2025). An emerging stream of methodological research has begun to formalize such uses. Naeem and Thomas (2025), in particular, proposed a seven-stage prompt-based protocol that researchers can follow when employing ChatGPT to construct a qualitative case study, from contextual understanding to the configuration of units of analysis. Their work is careful and stage-sensitive, and it already differentiates where the chatbot is involved and where it is not. It nevertheless addresses one specific configuration: a single human researcher employing a non-autonomous chatbot as a co-constructor of a case study built around real empirical material.

However, the methodological frontier is moving rapidly beyond this co-constructive configuration. Three further possibilities are emerging. First, agentic AI systems, autonomous, goal-oriented systems able to plan, retrieve information and execute multi-step tasks with limited human intervention (Acharya *et al.*, 2025; Sapkota *et al.*, 2025), can support the discovery of candidate cases by scanning news archives, regulatory filings, social media and academic databases. Second, when combined with retrieval-augmented generation, agentic systems can support the selection of candidate cases by evaluating them against theoretically relevant criteria. Third, the documented capacity of large language models (LLMs) to produce realistic narratives and to simulate “silicon” participants (Argyle *et al.*, 2023; Hämäläinen *et al.*, 2023; Hullman *et al.*, 2026) raises the more radical possibility of generating synthetic cases for theoretical or pedagogical use.

These four functions, discovery, selection, co-construction and generation, are not interchangeable. They draw on different AI capabilities, operate at different stages of the case research lifecycle, present different validity threats and align with different approaches to theorising from cases (Welch *et al.*, 2019; Welch *et al.*, 2022). They also imply different degrees of methodological delegation between human researchers and AI systems. We do not claim that the literature is silent on these distinctions; protocols such as Naeem and Thomas (2025) and discussions of AI-grounded theory (Odacioglu *et al.*, 2022) and of synthetic respondents (Argyle *et al.*, 2023; O’Grady, 2025) already separate AI for analysis from AI as a producer of quasi-empirical data. What remains underdeveloped is a synthesis that couples these roles systematically to the forms of theorising they serve and to the specific validity threats they introduce. As a result, the debate still oscillates between enthusiasm for AI-assisted research (Naeem and Thomas, 2025) and well-founded but undifferentiated caution about algorithmic theorising (Lindebaum and Ashraf, 2024; Lindebaum *et al.*, 2023).

The aim of this paper is to provide that synthesis. Consequently, our research questions are:

- (1) *what distinct roles can generative and agentic AI assume in case-based management research;*
- (2) *under what methodological conditions can each role contribute to, or undermine, the theoretical depth and contextual richness that distinguish case-based research?*

We answer these questions by developing a four-role conceptual framework: AI-as-Discoverer, AI-as-Selector, AI-as-Co-Constructor and AI-as-Generator. The review was not intended to catalogue AI applications descriptively, but to identify recurrent methodological functions attributed to generative and agentic AI within the case research process.

Each role is analysed through three theoretical lenses: affordance theory (Leonardi, 2011; Faraj & Azad, 2012; Li *et al.*, 2023; Yang *et al.*, 2024; Lin *et al.*, 2025); Welch *et al.*’s (2019, 2022) typology of theorising from cases; and the sociomateriality literature (Faraj *et al.*, 2018; Kellogg *et al.*, 2020; Pachidi *et al.*, 2021).

The analysis combines systematic review procedures with an abductive conceptual synthesis, from which we derive six propositions on the conditions of legitimacy, validity threats and disclosure requirements specific to each role and to their combination.

The paper makes three contributions. Theoretically, it moves beyond the binary “human researcher versus AI tool” frame and repositions case-based research as a sociotechnical practice in which qualitatively different AI roles carry different methodological consequences; rather than filling an empty

conceptual space, it offers a structured synthesis and extension of emerging streams.

Methodologically, it supplies conceptual categories and evaluative criteria that authors, reviewers and editors can use to interrogate AI involvement in case-based papers.

Practically, it translates these criteria into role-sensitive disclosure guidance for corporate-governance and R&D case research, where the credibility of board, succession, ESG and innovation evidence depends acutely on transparency about how cases were found, chosen, interpreted and, increasingly, generated.

The paper proceeds as follows. Section 2 reviews the conceptual background and clarifies the generative–agentic distinction. Section 3 describes the review process, the coding protocol and the analytical approach. Section 4 develops the four-role framework and a worked governance illustration. Section 5 discusses theoretical and practical implications, articulates six propositions, and considers limitations and a future research agenda. Section 6 concludes.

2. Conceptual background

2.1 Case-based research and approaches to theorising

Case-based research has developed through different methodological traditions that can be broadly grouped into three overlapping but distinct approaches. The positivist approach, exemplified by Yin (2018) and Eisenhardt (1989), conceives of the case as a focused empirical site for theory building or testing through replication logic. The interpretive approach, advanced by Stake (1995), views the case as a phenomenon whose meaning is socially constructed and must be understood through engagement with participants' lived experience. The abductive and process-oriented approach, associated with Gioia, Corley and Hamilton (2013), Langley (1999) and Cornelissen (2017), emphasises the emergence of theoretical categories from rich qualitative material through abductive iteration.

Welch *et al.* (2019) integrated this diversity into four forms of theorising from cases, inductive theory-building, interpretive sensemaking, natural experiment and contextualised explanation, which differ in how they combine contextualisation and causal explanation and therefore rely on different evaluative criteria.

Later contributions emphasised contextualised explanation in particular, through process research, historical methods, the extended case method and

configurational theorising (Welch *et al.*, 2022). This distinction is decisive for our argument: the methodological legitimacy of an AI-supported practice cannot be assessed independently of the form of theorising adopted.

A practice that is acceptable within a comparative, theory-driven design may be methodologically inconsistent within an interpretive or processual one. The introduction of AI therefore raises different questions depending on:

- (i) how cases are identified and selected;
- (ii) how theoretical categories are developed;
- (iii) what counts as legitimate empirical evidence.

2.2 *Artificial intelligence in qualitative management research*

Recent methodological discussions have introduced AI into qualitative management research primarily as analytical support. Naeem *et al.* (2023) proposed a step-by-step process of thematic analysis to develop conceptual models, later extended to AI-supported thematic analysis (Naeem *et al.*, 2025) and to a seven-stage protocol for AI-assisted case study development (Naeem and Thomas, 2025). Odacioglu, Zhang and Allmendinger (2022) proposed an “AI grounded theory” combining topic modeling with grounded theory across fifty-one case studies of project collaboration. These contributions differ methodologically but share an assumption: AI is positioned as a tool supporting the researcher during coding, interpretation or analytical organisation.

A second stream examines the broader implications of algorithmic theorising. A core concern is that predictive optimization and automated pattern recognition may progressively displace explanation, interpretation and theoretical judgment in qualitative inquiry (Lindebaum *et al.*, 2023; Lindebaum and Ashraf, 2024). Related work highlights the growing dependence of management theory on computational artefacts (Glaser *et al.*, 2024) and the persistent tension between AI augmentation and the automation of human judgment (Raisch and Krakowski, 2021). These contributions converge on a single question: how the growing use of AI may influence explanation, interpretation and theory development.

A third stream addresses synthetic data generated by LLMs. Recent studies show that LLMs can simulate responses and generate material resembling empirical patterns observed in human populations (Argyle *et al.*, 2023; Hämäläinen *et al.*, 2023), opening possibilities for exploratory analysis, simulation and pedagogy. The same literature identifies serious limits. AI-generated participants may reproduce biases in training data and inadequately

represent marginalised groups (O’Grady, 2025); and simulations cannot automatically be treated as behavioural evidence, since their apparent realism often rests on assumptions that are difficult to verify empirically (Hullman *et al.*, 2026). Synthetic material therefore raises a prior question about what can legitimately count as empirical evidence. These debates are well developed in adjacent science-and-technology-studies and critical-data-studies scholarship; we draw on them selectively while keeping our focus on management research, and we flag this boundary explicitly in Section 5.

These streams of literature show that AI is progressively extending beyond analytical assistance and beginning to influence broader stages of knowledge production in qualitative research. Yet one important issue remains underdeveloped: the emergence of agentic AI systems in research methodology. The several applications and implications of agentic AI analyse by Acharya, Kuppan and Divya (2025) and the conceptual taxonomy by Sapkota, Roumeliotis and Karkee (2025) confirm that the agentic paradigm is maturing rapidly in healthcare, finance and robotics. Its translation into management research methodology, however, remains conceptually under-theorised.

2.3 *Working with machines: a sociomaterial framing*

A final stream derives from organisation theory and sociomaterial perspectives on algorithmic systems (Orlikowski and Scott, 2008; Faraj *et al.*, 2018; Kellogg *et al.*, 2020; Pachidi *et al.*, 2021). Faraj, Pachidi and Sayegh (2018) identify four properties of learning algorithms, black-boxed performance, comprehensive digitisation, anticipatory quantification and hidden politics, and show how they alter coordination, control and professional expertise. Subsequent work suggests that algorithmic systems increasingly shape what counts as legitimate knowledge (Pachidi *et al.*, 2021) and participate in evaluative, classificatory and interpretive activities once reserved for human experts (Kellogg *et al.*, 2020).

Although developed for organisations, these dynamics may increasingly characterise qualitative and case-based research as AI systems participate in discovery, selection, interpretation and generation. To move beyond high-level appeals to sociomateriality, we use Leonardi’s (2011) notion of imbrication, the interlocking of human and material agencies, as a mechanism that differs systematically across roles: in the Discoverer and Selector roles, material agency is comparatively dominant and operates upstream and out of sight in ranking and retrieval pipelines, whereas in the Co-Constructor role human and material agencies imbricate turn by turn within the researcher’s

view, and in the Generator role material agency substitutes for, rather than imbricates with, empirical reality. This mechanism-level reading allows AI-supported case research to be analysed as a sociotechnical configuration, and it is what the affordance and theorising-from-cases lenses are used to specify in Section 4.

3. Methodology

This study adopts a structured literature review approach to examine how generative and agentic AI are being incorporated into case-based management research (Snyder, 2019). Generative AI refers to large language models that produce text, code or other content in response to prompts; they are powerful but non-autonomous, operating within a turn-by-turn interaction in which the human sets goals, supplies material and evaluates output. Agentic AI refers to systems that wrap such models in mechanisms for autonomy, planning, memory, tool use and retrieval, enabling them to pursue a goal across multiple steps with limited human intervention (Acharya *et al.*, 2025; Sapkota *et al.*, 2025). The two are not opposed: agentic systems typically rely on generative models as their reasoning core, but they add the capacity to act in an information environment rather than only to respond within a dialogue.

In the present study, the review was not intended to provide a descriptive overview of the literature, but to identify recurring forms of AI involvement in case research and to develop a conceptual framework grounded in the analysis of prior studies. To enhance transparency and replicability, the review process followed the PRISMA protocol (Page *et al.*, 2021).

The review focused on studies addressing the use of AI in case-based and qualitative management research, with particular attention to methodological functions associated with case discovery, case selection, co-construction and synthetic case generation.

3.1 Search strategy and Screening

The primary search was conducted in March 2026 using Elsevier's Scopus, which offers broad multidisciplinary coverage of peer-reviewed journals (Snyder, 2019). The search covered 2018–2026 in order to capture the recent emergence of generative and agentic AI. The following Boolean expression was applied to the TITLE-ABS-KEY fields:

("case study" OR "case research" OR "case method" OR "case-based") AND ("artificial intelligence" OR "generative AI" OR "large language model" OR "LLM" OR "ChatGPT" OR "agentic AI" OR "synthetic data" OR "synthetic case") AND (management OR organization OR governance OR strategy OR business).

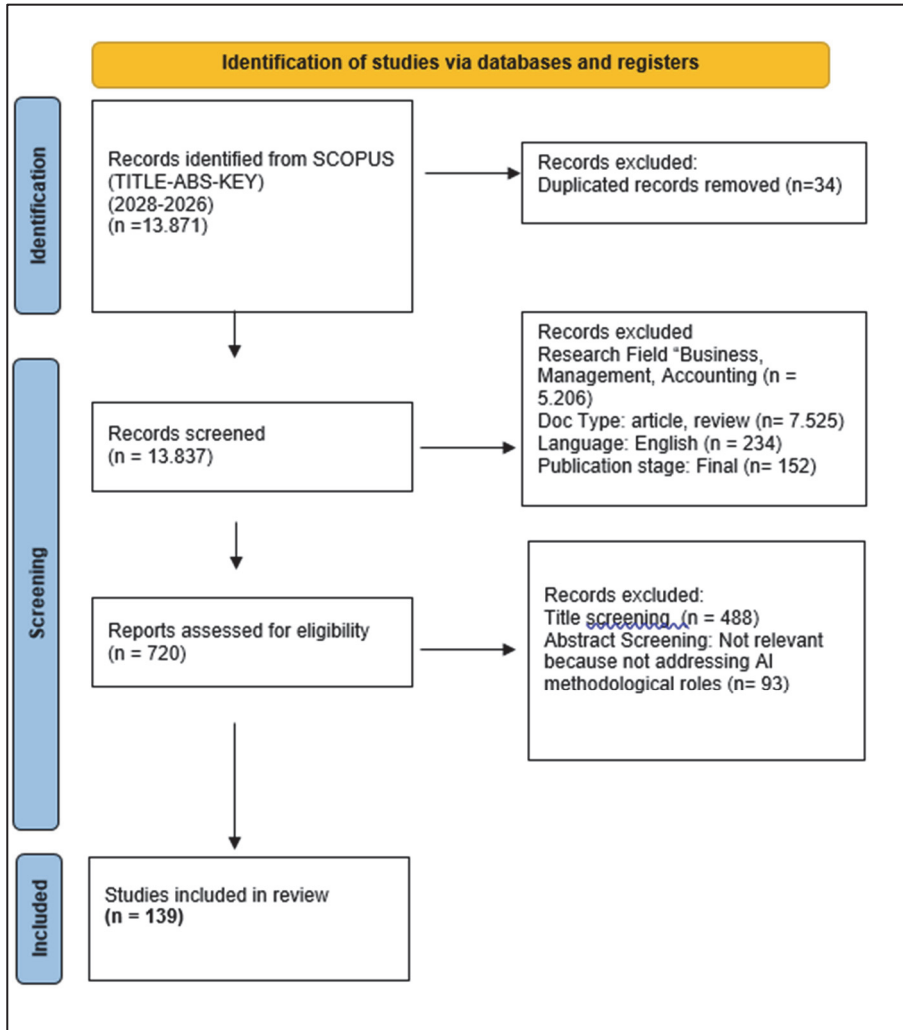
The query returned 13,837 records. Before screening, duplicates have been removed from the final set of results (records excluded n=34).

Only articles and review were included (records excluded n=7.525). Non-English publications or documents without an English abstract were also excluded from the analysis (records excluded n=234). The selected subject area was "Business, Management and Accounting" (records excluded n=5.206). Restricting the database search to this subject area necessarily excludes foundational work published in human-computer interaction venues (e.g., Härmäläinen *et al.*, 2023), in technical AI outlets (e.g., Acharya *et al.*, 2025; Sapkota *et al.*, 2025) and in general-science journals (e.g., O'Grady, 2025). To address this limitation, backward and forward citation searches (snowballing) were conducted during the review process to identify a limited number of highly relevant adjacent studies. These contributions were incorporated into the conceptual analysis to complement the management corpus, particularly with regard to agentic AI and synthetic data, while remaining analytically distinct from the studies retrieved through the original database search. The publication stage was "Final" (records excluded n=152).

The remaining studies were screened through title and abstract analysis in order to exclude contributions clearly unrelated to the methodological use of AI in case-based or qualitative management research. At the title screening stage, 488 records were excluded as out of scope, while a further 93 studies were removed after abstract screening because they did not address methodological aspects of case research or did not include an abstract. Instead we considered the studies that discuss AI as a methodological resource in research activities and show explicit relevance to case research design, data generation, analysis or theorising. Technical contributions without methodological implications for management research were excluded, together with literature reviews addressing AI only as a substantive research topic.

This process resulted in a final sample of 139 studies subjected to full-text analysis. Figure 1 summarises the screening and selection process.

Figure 1: PRISMA Protocol



Source: Our elaboration

3.2 Documents analysis

The analysis was conducted manually through iterative reading and comparison of the selected studies. The authors independently examined the papers and progressively compared interpretations in order to identify recurring

methodological patterns and refine the emerging conceptual distinctions. This process supported the development of a shared interpretation of how AI intervenes in different stages of case-based research.

In detail, firstly, all 139 documents were read in full. We then distinguished between two subsets by full-text reading: the 81 core studies are those that attribute at least one explicit methodological function to AI within case-based or qualitative inquiry (or, for the adjacent agentic-AI and synthetic-data literatures, a function directly transferable to it). These studies inform the construction of the roles. The remaining 58 contextual studies supply the theoretical frame, affordance theory, sociomateriality, theorising from cases, and the augmentation-automation debate, and are not coded into roles. In addition, a small number of interdisciplinary studies identified through citation-based snowballing were incorporated into the conceptual analysis. Although not retrieved through the original subject-area filter, these studies provided important insights into agentic AI capabilities and synthetic data generation and were used to enrich the emerging framework.

The second step examined the methodological implications associated with each category. The unit of analysis was the methodological function attributed to AI within a study, not the study as a whole; a single study could therefore instantiate more than one function. Coding combined a deductive starting scheme with inductive refinement. The initial scheme was organized around stages of the case research lifecycle (identification, selection, interpretation, generation) derived from Eisenhardt (1989), Yin (2018) and Welch *et al.* (2019). Through iterative reading these stages were refined into the four conceptual categories AI-as-Discoverer, AI-as-Selector, AI-as-Co-Constructor and AI-as-Generator. Two authors independently coded the studies. The small number of disagreements, concentrated at the Discoverer–Selector and Co-Constructor–Generator boundaries, was resolved through discussion and used to sharpen the operational definitions reported in Table 1.

The distribution of coded functions was as follows: Co-Constructor (34), Generator (26), Discoverer (18) and Selector (15); because 12 studies were double-coded, assignments (93) exceed the 81 studies. The relative weight of the categories is itself informative: the Co-Constructor role rests on consolidated management evidence, whereas the Discoverer and Selector roles draw more heavily on adjacent agentic-AI literature, a point we treat as a limitation.

The final step connected the emerging categories with the theoretical foundations discussed in Section 2. Affordance theory supported the examination of what each AI function enables and constrains. The literature on theorising from cases provided the basis for assessing whether each function is compatible with different forms of case-based theorising. Sociomateriality

supported the interpretation of how AI may alter the relationship between human judgment, technological mediation and knowledge production.

Table 1: Coding Scheme

Role	Capability	Operational coding definition	Exemplar Studies	Num. of articles
Dis-cov-er-er	Agentic (autonomy, planning, retrieval)	AI scans dispersed sources to surface candidate cases before field engagement	Acharya <i>et al.</i> (2025); Sapkota <i>et al.</i> (2025); Naeem <i>et al.</i> (2023)	18
Selec-tor	Agentic (retrieval-augmented evaluation, ranking)	AI evaluates and prioritises candidate cases against theoretically defined criteria	Acharya <i>et al.</i> (2025); Sapkota <i>et al.</i> (2025); Naeem & Thomas (2025)	15
Co-Con-structor	Generative (prompt-based dialogue)	AI participates in coding, framing and interpretation through iterative human-AI exchange	Naeem <i>et al.</i> (2023, 2025); Naeem & Thomas (2025); Odacioglu <i>et al.</i> (2022)	34
Gene-rator	Generative (simulation, narrative production)	AI produces synthetic cases or participants not derived from observed settings	Argyle <i>et al.</i> (2023); Hämäläinen <i>et al.</i> (2023); Hullman <i>et al.</i> (2026); O’Grady (2025)	26

Source: Our elaboration

The framework presented in Section 4 emerged through comparison between the reviewed studies and the theoretical foundations (Table 2).

Table 2: Analytical Process

	Analytical phase	Focus of the analysis	Outcome
1	Reading of the selected studies	Examination of how AI is used within the research process	Identification of recurring forms of AI involvement
2	Comparative interpretation of the studies	Analysis of similarities and differences in methodological functions	Progressive distinction between AI roles
3	Conceptual refinement	Iterative refinement and resolution of boundary disagreements	Four conceptual categories
4	Connection with theoretical foundations	Interpretation through affordance theory, theorising from cases and sociomateriality	Four-role conceptual framework

Source: Our elaboration

4. The four AI roles in case-based management research

The analysis revealed four distinct forms of AI involvement in case-based management research: AI-as-Discoverer, AI-as-Selector, AI-as-Co-Constructor and AI-as-Generator. These four roles differ in the stage of the research process in which AI intervenes, the degree of researcher delegation involved, and the implications they generate for theorising from cases.

The framework is a conceptual representation of methodological functions that AI may assume during the development of case-based research. Some roles primarily support the identification and organisation of empirical material, whereas others intervene more directly in interpretation, theoretical reasoning or the generation of synthetic research material. In detail, Discovery and Selection depend primarily on agentic capabilities, autonomous scanning of dispersed sources, retrieval-augmented evaluation, planning and ranking across large corpora. Co-construction and generation depend primarily on generative, prompt-based capabilities, the production and refinement of interpretations or narratives within an interaction governed by the researcher. Therefore, agentic roles externalise judgment into autonomous information-processing pipelines that are harder to inspect, whereas generative roles keep the human in the interactional loop but expose the researcher to fluent, persuasive output.

The following sections discuss each role by examining the methodological possibilities it enables, the forms of researcher-AI interaction it introduces, and the challenges it raises for validity, interpretation and theoretical depth in case-based management research.

4.1 *AI as Discoverer*

AI as Discoverer refers to the use of AI systems to support the identification of potentially significant cases before field engagement and data collection begin.

In traditional case research, identification has depended on researchers' prior knowledge, professional networks, media visibility and familiarity with specific settings (Eisenhardt, 1989; Yin, 2018). Recent developments in generative and agentic AI introduce new forms of automated retrieval and organisation of empirical material (Sapkota *et al.*, 2025; Naeem *et al.*, 2023; Naeem *et al.*, 2025; Naeem and Thomas, 2025).

From an affordance perspective, AI-supported discovery increases researchers' capacity to access and organise heterogeneous material and expands the scale and speed at which relevant information can be surfaced

(Leonardi, 2011; Faraj and Azad, 2012; Yang *et al.*, 2024). In governance and R&D research, this can facilitate the identification of episodes associated with theoretically relevant conditions, governance crises, CEO succession events, ESG controversies, innovation breakthroughs, thereby supporting the early stages of theoretical sampling (Eisenhardt, 1989; Welch *et al.*, 2022). In affordance terms, however, the affordance is asymmetric: it strengthens breadth of access far more than depth of contextual understanding, which is why it predicts compatibility with comparative designs but not with interpretive ones.

Sociomaterially, the imbrication of agencies here is upstream and largely invisible: access becomes mediated by digital infrastructures, retrieval systems and ranking, so the visibility of a phenomenon depends not only on the researcher's sensitivity but on the structure, accessibility and ranking of digitally available information (Orlikowski and Scott, 2008; Faraj *et al.*, 2018; Pachidi *et al.*, 2021).

The role is therefore most compatible with approaches relying on comparison, replication logic and contextual variation (Welch *et al.*, 2019; 2022) and least compatible with interpretive approaches, where selection and interpretation depend on direct familiarity with the setting (Stake, 1995; Cornelissen, 2017). The principal threat is visibility bias: AI-supported discovery privileges organisations and events already prominent in digital environments, underrepresenting less documented or marginal contexts, and systems trained on dominant textual patterns may reproduce established assumptions and reduce exposure to genuinely novel situations (Lindebaum *et al.*, 2023; Glaser *et al.*, 2024). Researchers who rely heavily on it may also enter the field with thinner contextual familiarity than qualitative case research has traditionally required (Hoorani *et al.*, 2019; Pillai *et al.*, 2024). Use of the Discoverer role thus demands deliberate attention to source diversity, contextual understanding and oversight.

4.2 *AI as Selector*

Once candidates have been identified, researchers must decide which are theoretically relevant. Case selection has traditionally relied on theoretical sampling, replication logic, polar types and the identification of particularly informative empirical situations (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Stake, 1995; Yin, 2018). AI-as-Selector refers to the use of agentic, retrieval-augmented AI to support the evaluation and prioritisation of candidate cases according to theoretically defined criteria.

Unlike the Discoverer, which mainly surfaces material, the Selector intervenes directly in evaluative judgment, supporting ranking and comparative assessment through retrieval-augmented generation, semantic matching and multi-step reasoning (Acharya *et al.*, 2025; Sapkota *et al.*, 2025; Naeem and Thomas, 2025). From an affordance perspective it increases the capacity to compare, classify and prioritise candidates against explicit criteria; more finely, affordance theory predicts that this capacity is realised only to the extent that the relevant theoretical criteria can be made machine-legible, a condition met by structured comparative schemas but violated by criteria that depend on tacit, emergent judgment.

Sociomaterially, the imbrication tightens: algorithmic systems actively participate in organising and prioritising information through ranking and categorisation (Faraj *et al.*, 2018; Kellogg *et al.*, 2020; Pachidi *et al.*, 2021), so selection becomes contingent on how theoretical criteria are translated into prompts, categories and computational representations.

The role aligns most closely with designs based on explicit theoretical schemas and cross-case comparison (Welch *et al.*, 2019) and benefits interpretive and grounded-processual approaches least, since theoretical sensitivity there develops through engagement rather than predefined categories (Stake, 1995; Gioia *et al.*, 2013; Cornelissen, 2017). The Selector also entails a more substantial delegation of judgment than the Discoverer.

Its main methodological threats are the loss of theoretical nuance resulting from the translation of complex constructs into machine-readable criteria, the marginalisation of anomalous or surprising cases that deviate from dominant patterns, and the partial opacity of the reasoning embedded in ranking processes (Lindebaum *et al.*, 2023; Lindebaum and Ashraf, 2024). Therefore, the responsible use requires explicit specification of criteria, oversight, and reflection on how the system participates in evaluative judgment.

4.3 AI as Co-Constructor

AI as Co-Constructor is the most developed role in the methodological literature on AI-supported qualitative research. Existing contributions describe research configurations in which researchers interact with AI systems during different stages of the research process, including research design, theoretical framing, coding activities and interpretation (Naeem *et al.*, 2023). AI contributes to the construction, refinement and interpretation of case-based research material through iterative exchanges involving prompting, evaluation and revision (Naeem & Thomas, 2025). Interaction with AI may

help researchers externalise implicit assumptions, examine alternative interpretations and explore theoretical perspectives that might otherwise remain overlooked. Within case-based research, the AI as Co-Constructor therefore operates primarily as a form of AI-assisted interpretation rather than as a mechanism for autonomous methodological judgment.

The methodological implications differ from the previous two roles. Whereas Discoverer and Selector involve increasing forms of delegation in the identification and prioritisation of cases, the Co-Constructor maintains researchers at the centre of interpretative activity. For this reason, it fits more naturally with a broader range of approaches to theorising from cases, including inductive, interpretive and grounded-processual traditions (Gioia *et al.*, 2013; Welch *et al.*, 2022).

From an affordance perspective it broadens the capacity to organise, compare and reinterpret material (Leonardi, 2011; Yang *et al.*, 2024). Socio-materially, this is the role where imbrication is most visible and most balanced, unfolding turn by turn within the researcher's field of view (Faraj *et al.*, 2018; Pachidi *et al.*, 2021). That visibility is also the source of its characteristic threat: automation and confirmation bias. Fluent, coherent and theoretically plausible output may invite premature interpretive closure (Lindebaum and Ashraf, 2024), and the mere externalisation of prompts and exchanges does not by itself constitute methodological reflexivity. Coding support and theoretical exploration may benefit from interaction, but ethical reflection, contextual interpretation and contribution development continue to rely on the researcher's judgment and field sensitivity (Naeem and Thomas, 2025; Hoorani *et al.*, 2019). Therefore, the rigor of this role depends not on the volume of human-AI interaction but on the researcher's capacity to contest, reject and revise AI-generated interpretations.

4.4 AI as Generator

AI as Generator represents the most controversial form of AI involvement in case-based research because it allows the production of cases not derived directly from observed empirical settings. Existing contributions suggest that large language models may reproduce patterns resembling organisational situations and empirical distributions (Hämäläinen *et al.*, 2023).

The literature describes three uses that must be kept analytically distinct, because their status differs sharply. A first and widely accepted application concerns pedagogical purposes, where synthetic cases, vignettes, and scenarios are developed as teaching materials to stimulate discussion in classroom settings or executive education programmes (Gummeson, 2017; Naeem and

Thomas, 2025; Glaser *et al.*, 2024). In this context, no claim of empirical correspondence is made, and the legitimacy of such use is generally unquestioned.

A second application involves exploratory and simulation-oriented purposes. Here, generated cases are employed to investigate counterfactual situations and theoretical boundary conditions by examining alternative organisational configurations that are difficult or impossible to observe directly (Langley, 1999; Argyle *et al.*, 2023; Hullman *et al.*, 2026). The legitimacy of this use depends on the explicit acknowledgement of the synthetic nature of the material and on framing any resulting insights as hypotheses or conceptual propositions rather than empirical findings.

A third and more problematic application arises when AI-generated material is presented as if it constituted observed evidence about real organisations. We consider this quasi-empirical use to be methodologically illegitimate, except under highly restricted circumstances that are clearly specified, transparently justified, and independently verifiable (cf. Hullman *et al.*, 2026; O’Grady, 2025).

Therefore, AI-generated cases should not be regarded as empirical evidence in the conventional sense. Their use can be considered legitimate for pedagogical and exploratory purposes, whereas any evidentiary role requires explicit disclosure and conditions that are transparent and independently verifiable. Even under such circumstances, however, their evidentiary value remains partial and should be interpreted with caution.

From an affordance perspective, AI as Generator broadens researchers’ capacity to explore hypothetical organisational configurations and controlled variations of empirical conditions (Leonardi, 2011; Faraj & Azad, 2012). Sociomaterial perspectives, however, emphasise that generated material remains affected by training data, algorithmic mediation and statistically recurrent textual patterns (Faraj *et al.*, 2018; Pachidi *et al.*, 2021). Generated cases therefore reflect the distributions, absences and biases embedded within training infrastructures.

Several methodological challenges emerge from this form of AI involvement. AI-generated cases may complicate the distinction between empirical material and theoretically constructed narratives, particularly when generated material is presented in forms resembling qualitative evidence. In addition, statistically recurrent textual patterns may produce standardised organisational narratives and reduce exposure to unexpected empirical variation (Hullman *et al.*, 2026). Existing work on silicon sampling also raises concerns regarding the representation of marginalised populations and underrepresented organisational contexts within generated material (O’Grady, 2025). More broadly, the use of generated cases raises questions concerning evidentiary legitimacy and contextual validity within case-based theorising.

4.5 Combining AI roles in case-based research

In practice, case-based research is unlikely to rely on a single role. To make the framework concrete for governance and R&D readers, and to address the concern that the illustrations remained abstract, consider a comparative, multiple-case study of how corporate boards respond to ESG controversies in listed firms, a question squarely within this journal's remit. The four roles would manifest in different stages of the research process.

In the Discoverer role, an agentic system scans regulatory filings, enforcement actions, financial news, NGO reports, and social media to identify listed firms that have experienced a material ESG controversy followed by an observable board-level response. By doing so, AI can assemble a much larger pool of candidate cases than a single researcher could realistically compile through manual searches.

In the Selector role, retrieval-augmented systems support the ranking of candidate cases according to theoretically defined criteria, such as controversy severity, variation in board independence and composition, and the identification of polar types suitable for replication logic. This allows researchers to construct a comparative case set that is theoretically informative (Eisenhardt and Graebner, 2007; Welch *et al.*, 2019).

The Co-Constructor role becomes relevant during the analysis of board minutes, proxy statements, disclosures, and interviews. In this phase, researchers interact with generative AI to externalise interpretations, develop and challenge first-order codes, and test alternative explanations of board behaviour, while retaining full authority over the interpretive process (Gioia *et al.*, 2013; Naeem and Thomas, 2025).

Finally, the Generator role emerges after the empirical analysis has been completed. Synthetic counterfactual scenarios, for example, considering how the same controversy might have unfolded under a differently composed board, can be generated to explore boundary conditions and develop executive-education teaching cases. Such generated material remains explicitly labelled as non-empirical and is kept analytically separate from the observed evidence.

This sequence also surfaces governance-specific risks that a domain-general treatment would miss. Visibility bias in the Discoverer role tilts the sample toward large, scandal-prone listed firms, underrepresenting private and family firms whose governance dynamics differ markedly. Evaluative delegation in the Selector role can flatten precisely the nuances, informal board influence, ownership structure, interlocking directorates, that governance theory treats as decisive. And synthetic governance cases, if not clearly flagged, risk being mistaken for evidence about real board behaviour, with

consequences for cumulative knowledge in a field where evidence is already hard to obtain. The order in which roles enter the process matters too: generated material introduced before empirical engagement may anchor researchers on model-produced representations, whereas generated cases introduced after empirical inquiry can support counterfactual exploration and theoretical refinement (Argyle *et al.*, 2023; Hullman *et al.*, 2026).

More generally, interpretive approaches grounded in situated understanding derive limited benefit from Selector and Generator configurations, both of which abstract from empirical context, whereas comparative and theoretically structured approaches integrate them more readily (Welch *et al.*, 2019; 2022). Co-Constructor configurations keep researchers more directly involved in interpretation, whereas Discoverer and Selector configurations rely more extensively on retrieval, filtering and ranking. The capacity to evaluate, contest and revise AI-generated outputs is therefore central to methodological transparency, and connects the framework to the augmentation–automation debate (Raisch and Krakowski, 2021): automation may expand the capacity to process information while simultaneously raising questions about interpretative authority and the place of human judgment in case-based theorising. Table 3 summarises the comparison.

Table 3: Comparative overview of AI roles in case-based management research

Dimension	AI as Discoverer	AI as Selector	AI as Co-Constructor	AI as Generator
Capability Type	Agentic	Agentic	Generative	Generative
Research phase	Case identification	Case selection	Interpretation and analysis	Simulation and exploration
Primary affordance	Access to dispersed empirical material	Comparison and prioritisation of cases	Reflexive and interpretive support	Exploration of hypothetical configurations
Imbrication of agencies	Upstream, largely invisible	Tight, criteria-mediated	Visible, turn-by-turn	Substitutive (no empirical referent)
Theorising from cases	Comparative and context-oriented approaches	Theoretically structured comparison	Broad applicability across approaches	Limited fit with interpretive approaches
Researcher delegation	Moderate	High	Limited	Extensive
Main methodological concerns	Visibility bias; limited contextual familiarity	Reduction of theoretical nuance; opacity	Automation bias; superficial reflexivity	Ambiguous empirical status; limited contextual validity

Source: Our elaboration

5. Discussion

The growing diffusion of generative and agentic AI within management research is transforming how qualitative approach is designed, conducted and interpreted. Existing methodological contributions have mainly examined AI as a support instrument for coding, thematic analysis and data interpretation (Odacioglu *et al.*, 2022; Naeem *et al.*, 2023; Naeem *et al.*, 2025; Naeem & Thomas, 2025), while organisation studies have increasingly highlighted the influence of algorithmic systems on knowledge production (Kellogg *et al.*, 2020; Lindebaum *et al.*, 2023).

However, current discussions remain largely focused on collaborative forms of AI-assisted interpretation and analysis. The framework developed in this study extends this perspective by differentiating four roles through which AI occurs in case-based management research: Discoverer, Selector, Co-Constructor and Generator. The value added is not the discovery of an empty conceptual space, but a structured synthesis that gives reviewers, editors and authors a vocabulary and a set of criteria for interrogating AI involvement that the field currently lacks.

In doing so, the study shows that AI intervene through discovery, selection and the generation of hypothetical or quasi-empirical material (Hämäläinen *et al.*, 2023; Acharya *et al.*, 2025; Sapkota *et al.*, 2025). Therefore, AI involvement represents a differentiated set of configurations associated with distinct forms of delegation, mediation and researcher control (Raisch & Krakowski, 2021; Faraj *et al.*, 2018; Pachidi *et al.*, 2021).

The review also indicates that the four roles are not methodologically equivalent. Their implications vary according to how theoretical insight is developed from cases and how researchers relate to empirical settings during the research process. Comparative and theoretically structured approaches may integrate agentic Discoverer and Selector configurations more extensively, particularly when broader sets of candidate cases and explicit comparison criteria are required (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). Interpretive methodology (Stake, 1995; Cornelissen, 2017), grounded theory (Gioia *et al.*, 2013) and processual approaches (Langley, 1999), by contrast, continue to rely strongly on situated understanding and engagement with empirical material.

The framework further shows that the four roles redistribute methodological activities differently across the research process (Gioia *et al.*, 2013; Lindgreen *et al.*, 2021). Discoverer configurations remake access to empirical material through retrieval and exploration activities supported by AI systems (Acharya *et al.*, 2025; Sapkota *et al.*, 2025). Selector configurations

occur directly in evaluative judgment through filtering and prioritisation activities (Eisenhardt & Graebner, 2007; Welch *et al.*, 2019). Co-Constructor configurations influence interpretation and analytical refinement through iterative interaction between researchers and AI systems (Naeem *et al.*, 2023; Naeem *et al.*, 2025; Naeem & Thomas, 2025). Generator configurations introduce a more substantial shift because they allow the production of AI-generated material not directly derived from empirical observation (Argyle *et al.*, 2023; Hämläinen *et al.*, 2023; Hullman *et al.*, 2026).

Our study also extends sociomaterial perspectives on knowledge production (Orlikowski & Scott, 2008; Faraj & Azad, 2012; Faraj *et al.*, 2018). AI systems participate in the retrieval, organisation, interpretation and generation of research material, while training data, ranking systems and filtering processes figure the visibility and accessibility of empirical phenomena (Kellogg *et al.*, 2020; Pachidi *et al.*, 2021; Lindebaum & Ashraf, 2024). The production of theoretical insight becomes mediated by interactions between researchers' judgments, computational systems and digitally available information infrastructures.

Finally, the study contributes to ongoing discussions concerning AI augmentation and automation in management research (Raisch & Krakowski, 2021). Existing discussions often frame AI adoption as a broad tension between human and automation (Glaser *et al.*, 2024; Lindebaum & Ashraf, 2024). Our review instead suggests that different AI roles involve different implications for qualitative inquiry. Rather than framing AI adoption as a binary choice between acceptance and rejection, the framework highlights the importance of evaluating how different forms of AI involvement influence contextual understanding, interpretative authority and theoretical development throughout the research process.

5.1 Propositions

The previous analysis suggests that the implications of AI involvement vary with the role performed and the form of theorising guiding the design. The following six propositions synthesise the framework. Their number and content now correspond exactly to the four roles plus an alignment and an integrative proposition, correcting the earlier mismatch between the propositions announced and those developed.

Proposition 1 (alignment). The methodological legitimacy of any AI role in case-based research depends on its alignment with the form of theorising

guiding the design; misalignment between role and theorising weakens, rather than strengthens, the theoretical contribution.

Proposition 2 (Discoverer – visibility bias). Because AI-as-Discoverer mediates access through digital infrastructures and ranking, its use biases case identification toward digitally salient organisations and events; this threat is most acute for interpretive and contextualised theorising and is mitigated only by deliberate attention to source diversity and contextual familiarity.

Proposition 3 (Selector – evaluative delegation). AI as Selector delegates evaluative judgment to semantic matching and ranking; the resulting loss of theoretical nuance is proportional to the tacit, context-dependent knowledge required by the chosen form of theorising, and is contained only when selection criteria are explicitly specified, auditable and contestable.

Proposition 4 (Co-Constructor – reflexivity). AI as Co-Constructor preserves the researcher’s interpretive centrality but introduces automation and confirmation bias; its contribution to rigorous theorising depends on the researcher’s capacity to contest, reject and revise fluent AI-generated interpretations, not on the volume of human-AI interaction.

Proposition 5 (Generator – epistemic status). The contribution of AI-as-Generator is legitimate only when the epistemic status of synthetic material is explicitly declared and bounded: synthetic cases may support pedagogical and exploratory purposes, but cannot be treated as empirical evidence except under narrowly specified, transparently justified and verifiable conditions.

Proposition 6 (integrative – governance). As generative and agentic AI become more deeply embedded across the case research lifecycle, qualitative rigor, and the credibility of governance and R&D case evidence in particular, depends increasingly on role-sensitive disclosure, researcher oversight and reflexive evaluation of how AI participates in discovery, selection, interpretation and generation.

5.2 Implications for governance and R&D research practice

The framework offers a basis for discussing AI involvement without treating AI use as a generic condition, and it has concrete consequences for this journal’s readership. For authors, distinguishing discovery, selection, interpretation and generation enables precise disclosure: a governance case study should state which roles were used, with which systems, and with what human oversight, rather than relying on a blanket acknowledgement of “AI assistance”. For reviewers and editors, the four roles supply targeted questions. In Discoverer configurations, which organisational contexts, private

firms, emerging-market boards, smaller innovators, remained weakly represented in the digitally accessible sources? In Selector configurations, how was theoretical relevance translated into prompts, ranking criteria and categories, and can that translation be inspected? In Co-Constructor configurations, what evidence is there that the researcher contested rather than merely accepted AI-generated interpretations? In Generator configurations, is synthetic material clearly demarcated from empirical evidence, and is its use pedagogical, exploratory or, problematically, quasi-empirical?

Because operational procedures for these roles remain underdeveloped, we suggest that disclosure expectations be made role-specific in author guidelines and review criteria. This would allow governance and R&D scholarship to harness AI's reach while protecting the contextual depth, evidentiary discipline and transparency on which the credibility of board, succession, ESG and innovation case evidence depends.

5.3 *Limitations and future research*

This study presents some limitations. First, and most importantly, only a limited number of reviewed studies directly examine agentic AI within research methodology. Accordingly, the Discoverer and Selector roles are developed partly through a limited number of adjacent studies identified through citation-based snowballing, rather than exclusively through consolidated management applications. While this interdisciplinary enrichment broadens the framework, transferability cannot be assumed, since neighboring fields often operate on more structured data, clearer evaluative criteria and more stable classification tasks than the ambiguous and progressively emergent situations characteristic of qualitative case research. This is reflected in the coding distribution (Table 1) and is not a presentational artefact: empirical exemplars of these two roles within management case research are still sparse, and part of our contribution is precisely to import insights from neighboring fields.

Second, the framework remains conceptual and has not yet been applied to actual research projects. Future studies could analyze published AI-supported case studies to examine which roles are effectively used, how they are combined, and which problems recur, ideally within governance and R&D settings, where the worked illustration in Section 4.5 could be operationalized.

Third, detailed methodological guidance currently exists mainly for the Co-Constructor role, through the protocols proposed by Naeem *et al.* (2025).

Equivalent procedures for Discoverer, Selector and Generator roles, including standards for synthetic-case disclosure, remain to be developed. A further, deliberate boundary is that we have engaged the science-and-technology-studies and critical-data-studies debates on synthetic data only selectively; a fuller integration of that scholarship is a promising avenue for anchoring the Generator role more deeply.

In addition, the review relies on a single database (Scopus) and on the “Business, Management and Accounting” subject area. Although these choices enhanced transparency and ensured coherence with the focus of the study, they may have excluded relevant methodological discussions published in adjacent disciplines. Likewise, grey literature and non-indexed sources were not systematically considered. Future research could broaden coverage by incorporating additional databases and interdisciplinary sources.

6. Conclusion

This study examined how generative and agentic AI may assume four methodological roles within case-based management research: Discoverer, Selector, Co-Constructor and Generator. The framework shows that different forms of AI participation emerge at different stages of the research process and influence theorising, interpretation and engagement with empirical material in several ways.

The study contributes to current methodological debates by moving beyond the idea of AI as a generic analytical support tool and by providing a more differentiated vocabulary for discussing AI-supported case research.

Moreover, its contribution is not only this identification of four roles but their systematic coupling to forms of theorising and to role-specific validity threats, expressed in six propositions and translated into disclosure guidance of direct use to governance and R&D scholars.

As generative and agentic AI become increasingly present within qualitative research activities, greater attention to the role performed by AI systems may become essential for preserving the interpretative and contextual depth that characterises case-based management research.

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Aligning Compliance, Quality, and Service Excellence in Vocational Education: A Case Study of Australian Harbour International College (AHIC)

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Abstract

The Vocational Education and Training (VET) sector operates at the intersection of regulatory compliance and service-quality imperatives, yet management scholarship has only partially examined how individual providers reconcile these tensions through integrated organisational frameworks. Addressing this gap, the study asks a

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single guiding question through what organisational mechanisms does a regulated training provider co-produce compliance and service quality over time? This article addresses that question through a qualitative single-case study of Australian Harbour International College (AHIC), a Registered Training Organisation in Sydney that has developed a coherent Service Quality Management Framework spanning curriculum design, multi-source feedback systems, trainer development, digital infrastructure, and stakeholder engagement. Adopting a theory-elaborating case design grounded in the methodological tradition of qualitative research, the study triangulates institutional documents, audit reports, performance indicators, and stakeholder feedback. The analysis identifies five interlocking pillars through which the institution co-produces compliance and quality. Triangulated evidence shows measurable improvements in completion rates, learner and employer satisfaction, audit performance, and staff retention. The article reframes the compliance – quality dichotomy as a productive duality rather than a trade-off that is, as two organisational logics that, when structurally and culturally integrated, become mutually reinforcing rather than competing, in the manner theorised by the literature on organisational ambidexterity; refines the service-quality literature by foregrounding stakeholder feedback as a continuous-improvement governance device; and extends qualitative theorising on case-based inquiry by demonstrating how an embedded single-case design can illuminate context-sensitive organisational processes.

Keywords: Vocational Education and Training (VET); Service Quality Management; Student Experience; Australian Harbour International College (AHIC); Stakeholder Governance; Compliance; Dynamic Capabilities.

Sommario

Il settore dell'istruzione e formazione professionale (VET) opera all'intersezione tra imperativi di conformità regolamentare e istanze di qualità del servizio; tuttavia, la letteratura manageriale ha esaminato solo parzialmente le modalità con cui i singoli erogatori ricompongono tali tensioni attraverso quadri organizzativi integrati. A fronte di questa lacuna, lo studio muove da un'unica domanda di ricerca: attraverso quali meccanismi organizzativi un provider formativo regolamentato co-produce nel tempo conformità e qualità del servizio? L'articolo affronta il quesito mediante uno studio di caso singolo qualitativo sull'Australian Harbour International College (AHIC), Registered Training Organisation con sede a Sydney che ha sviluppato un coerente Service Quality Management Framework esteso alla progettazione curricolare, ai sistemi di feedback multi-fonte, allo sviluppo dei formatori, all'infrastruttura digitale e all'engagement degli stakeholder. Adottando un disegno di caso orientato all'elaborazione teorica e radicato nella tradizione metodologica della ricerca qualitativa, lo studio triangola documenti istituzionali, rapporti di audit, indicatori di performance e feedback degli stakeholder. L'analisi individua cinque pilastri interconnessi attraverso i quali l'istituzione co-produce conformità e qualità. L'evidenza

triangolata mostra miglioramenti misurabili nei tassi di completamento, nella soddisfazione di discenti e datori di lavoro, negli esiti di audit e nella retention del personale. L'articolo riformula la dicotomia conformità – qualità come dualità produttiva anziché come trade-off, ossia come due logiche organizzative che, se integrate sul piano strutturale e culturale, divengono mutuamente rinforzanti anziché concorrenti, secondo quanto teorizzato dalla letteratura sull'ambidestrismo organizzativo; affina la letteratura sulla qualità del servizio ponendo in primo piano il feedback degli stakeholder quale dispositivo di governance del miglioramento continuo; ed estende la riflessione metodologica sull'indagine case-based dimostrando come un disegno di caso singolo embedded possa illuminare processi organizzativi sensibili al contesto.

Parole chiave: istruzione e formazione professionale (VET); gestione della qualità del servizio; governance degli stakeholder; conformità regolamentare; capacità dinamiche.

Introduction

Vocational Education and Training (VET) institutions operate within one of the most heavily codified service environments in contemporary education. Across mature regulatory regimes, providers are required to satisfy externally imposed standards while simultaneously delivering personalised, industry-relevant learning experiences to increasingly heterogeneous student populations. In Australia, the institutional architecture governed by the Standards for Registered Training Organisations (RTOs) 2015 and overseen by the Australian Skills Quality Authority (ASQA) exemplifies this duality. According to the Productivity Commission (2025), 89.3 per cent of government-funded VET completers in 2024 reported satisfaction with the overall quality of their training, while only 66.4 per cent of engaging employers expressed satisfaction – a decline of roughly six and a half percentage points from the 72.9 per cent recorded in 2015. The widening provider-employer perception gap signals that compliance alone, however meticulously enacted, no longer guarantees service excellence. Crucially, this national-level erosion of employer confidence is not merely a contextual backdrop but the precise pressure point that the present case is selected to illuminate. The provider-employer satisfaction gap is a macro-level symptom of a coordination failure between regulated provision and industry expectations; the organisational mechanisms examined at AHIC, notably the absorption of employer feedback into curriculum review through a defined committee cadence, and the treatment of audit findings as continuous-improvement inputs rather than terminal compliance verdicts, constitute provider-level responses to exactly the gap that compliance-only models have proven unable to close. Reading the national decline and the case-level mechanisms together thus reframes

the case not as an isolated success story but as an analytically revealing instance of how the sectoral tension is, or is not, metabolised at the level of the individual provider. This tension between compliance and quality has long animated debates in service management, total quality management, and educational governance. The literature has tended to treat the two as either competing logics or as elements to be sequentially aligned, yet studies in adjacent service contexts increasingly suggest that high-performing organisations reconcile them not by trade-off but by embedding both within an integrated framework where compliance procedures and quality-of-experience initiatives become mutually constitutive (Iqbal, 2026; Taraza *et al.*, 2024). What remains under-theorised is how individual providers operationalise this integration over time and through what micro-level mechanisms. The article addresses this gap through a single-case study of Australian Harbour International College (AHIC), a private RTO based in Sydney delivering nationally accredited qualifications in business, management, health, hospitality, and information technology. The primary purpose of the study is to elaborate how compliance and service quality are co-produced in a regulated educational setting, using AHIC as an analytically revelatory site rather than as an exemplary outcome to be celebrated. The specific research question is through what organisational mechanisms does a regulated VET provider integrate compliance and service-quality logics over time? A detailed description of the institution, its five-pillar framework, and its 2021-2024 performance trajectory is deferred to the empirical-context and methodology sections, so that the introduction can foreground the research gap, question, and theoretical framing. Methodologically, the study responds to recent calls for qualitative case-based research that produces theoretically meaningful and practically relevant knowledge about complex, context-embedded phenomena (Cornelissen, 2017; Lindgreen *et al.*, 2021; Simsek *et al.*, 2025). Rather than treating AHIC as an exemplary outcome, the analysis treats it as a revelatory case (Yin, 2009) in which the underlying mechanisms of integrated service-quality management can be excavated and dialogued with the broader management literature. In the service of this single theoretical purpose, the article advances three subordinate and tightly connected contributions. First, it reframes the compliance – quality relationship in regulated service contexts as a productive duality rather than a zero-sum choice, specifying the duality through the lens of organisational ambidexterity compliance and quality are not balanced by sacrifice but rendered mutually reinforcing when audit and feedback are absorbed into a common governance architecture. Second, it refines the service-quality literature by foregrounding stakeholder feedback as a continuous-improvement governance device,

complementing the SERVQUAL/SERVPERF tradition with a process-oriented account of how feedback is institutionally absorbed, and connecting this account to the dynamic-capabilities view in which feedback systems operate as sensing, seizing, and reconfiguring mechanisms (Teece, 2007). Third, methodologically, the study contributes to ongoing debates on rigour and theoretical leverage in qualitative case research by illustrating an embedded single-case design that combines longitudinal documentary evidence with multi-stakeholder data triangulation (Eisenhardt & Graebner, 2007; Hoorani *et al.*, 2019), and by making its analytical chain transparent through an explicit data-structure (Gioia *et al.*, 2013). The remainder of the article is organised as follows. The next section develops the theoretical framework, including the definition of core constructs and a set of explicit theoretical propositions. The methodology section then explains the research design. After describing the empirical context, the findings are organised around the five analytical pillars. The discussion elaborates the theoretical implications and practical contributions, before the article closes with limitations and avenues for further inquiry.

1. Theoretical background and conceptual framework

Three bodies of literature converge on the empirical background examined in this article: service quality in education, continuous improvement and stakeholder governance, and the methodological tradition of case-based theorising in management research. A fourth literature on digital transformation is treated as a moderating, sociotechnical layer rather than as a separate body of conceptualisation. Together, these literatures provide the scaffolding through which the AHIC case is analysed.

2. Defining the core constructs

Because the analysis turns on the interplay of several closely related terms, it is necessary to specify their conceptual boundaries at the outset. Quality is understood here in the multidimensional sense developed by Harvey & Green (1993), who distinguish quality as exception, perfection, fitness for purpose, value for money, and transformation; in a VET setting the fitness-for-purpose and transformative meanings are the most pertinent, since training must simultaneously satisfy codified standards and effect a change in learner capability (Ramsden, 1991). Compliance denotes the verifiable conformity of organisational processes to externally imposed regulatory

standards in the Australian case, the Standards for RTOs 2015 as enforced through ASQA audit. Service excellence refers to the perceived superiority of the service experience along the SERVQUAL dimensions of reliability, responsiveness, assurance, empathy, and tangibility (Parasuraman *et al.*, 1991), extended in education to the relational and developmental dimensions of provision. Continuous improvement is defined as the institutionalised capacity to convert evidence into incremental and recurrent organisational adjustment, of which the Plan-Do-Check-Act cycle is the canonical expression. Stakeholder feedback is treated not as a measurement output but as an input to organisational decision-making, generated by learners, trainers, employers, and regulators. Finally, the productive duality at the centre of the argument designates a relationship in which compliance and quality, although analytically distinct and potentially competing, are organised so as to reinforce one another a formulation that draws explicitly on the literature on organisational ambidexterity, which conceptualises apparent dualities as productive tensions managed through structural and cultural integration rather than as zero-sum trade-offs. Two clarifications distinguish this notion from organisational ambidexterity, on which it nonetheless draws. First, the relations differ, a classical ambidexterity concerns the simultaneous pursuit of two organisational activities (exploration and exploitation) that a firm elects to balance, whereas the productive duality theorised here concerns the reconciliation of two governance logics, an externally imposed compliance logic and an experientially oriented quality logic, that a regulated provider is not free to trade off but is simultaneously obliged to satisfy. Second, the integrative mechanism is more tightly specified in the VET setting, whereas ambidexterity is typically achieved through structural separation or contextual switching between exploratory and exploitative units, the productive duality observed here is achieved through a single shared governance architecture - the same ownership, cadence, and decision rights- into which both audit-driven compliance signals and stakeholder-driven quality signals are absorbed and converted into common improvement actions. Organisational ambidexterity thus supplies the broad theoretical intuition that apparent opposites can be rendered mutually reinforcing, while productive duality names the specific, audit-inflected form this reconciliation assumes when a regulated provider must metabolise compliance obligations into quality inputs through one and the same continuous-improvement apparatus.

3. Service quality in education as a managerial construct

The conceptualisation of service quality in education has been dominated since the late 1980s by frameworks adapted from the SERVQUAL tradition originally developed by Parasuraman *et al.* (1991). Recent applications continue to identify tangibility, reliability, responsiveness, assurance, and empathy as analytically useful dimensions for capturing learner perceptions of service delivery, and comparative work has confirmed that perceived service quality exerts a significant influence on student satisfaction, institutional loyalty, and post-graduation outcomes (Alemu, 2023; Seitova *et al.*, 2024; Magasi *et al.*, 2022; Kovaci *et al.*, 2020; Brooks & Everett, 2009). While these contributions have undeniably advanced the measurement of service quality, they have also been criticised for an over-reliance on cross-sectional, perception-based instruments that struggle to capture the temporal, processual, and relational dimensions of educational provision (Cornelissen, 2017; Parker *et al.*, 2024). In the VET sector specifically, the gap is more pronounced. What makes VET theoretically distinctive and therefore more than a local instance of generic service provision is the simultaneous and tightly coupled operation of four features that rarely co-occur in other service settings. First, VET is competency-based: quality is defined not by satisfaction alone but by demonstrable attainment of externally specified competencies, so that the “service” and its regulated “product” are inseparable (Billett, 2011). Second, provision is punctuated by recurrent regulatory audit cycles that render compliance a continuous rather than episodic concern. Third, quality depends on trainer currency: trainers must maintain up-to-date vocational competence in their industry, coupling service quality to a labour market external to the institution. Fourth, provision must remain aligned with fast-moving labour-market demand articulated through competency frameworks issued by Jobs and Skills Councils. These features inscribe quality requirements into the architecture of training itself rather than locating them solely in the customer – provider interface, and they make a regulated RTO an unusually demanding test-bed for theorising how compliance and quality are reconciled. A second strand of work has begun to reconceptualise service quality in education as a co-produced outcome between providers, learners, employers, and regulators, consistent with the broader services-marketing turn towards service-dominant logic and with insights from total quality management on the centrality of stakeholder orientation (Iqbal, 2026; Taraza *et al.*, 2024). For VET providers, the implication is that service quality cannot be fully delegated to compliance procedures or assessed solely through learner surveys; it must be enacted through ongoing organisational practices that integrate the perspectives of multiple constituencies.

4. Continuous improvement and stakeholder governance

The second relevant literature concerns continuous improvement (CI) and the governance mechanisms through which organisations maintain a culture of quality. The Plan – Do – Check – Act cycle remains a foundational reference, but contemporary research has emphasised the cultural, relational, and political dimensions of sustained CI (Taraza *et al.*, 2024). Studies of higher education converge on the finding that CI initiatives are most effective when embedded in a stakeholder-engagement architecture characterised by psychological safety, transparent communication, and clear accountability lines (Iqbal, 2026). This perspective resonates with research on organisational learning and dynamic capabilities, which positions feedback systems as sensing, seizing, and reconfiguring devices rather than administrative routines (Teece, 2007). Framing the matter in these terms clarifies the governance dimension that is central to the present study: a feedback architecture with defined ownership, cadence, and decision rights is, in effect, an internal governance mechanism through which an organisation senses its environment and reconfigures its resources. Read this way, continuous improvement is the organisational analogue of a research-and-development function, a recurrent, evidence-driven renewal of the service offer, while audit and stakeholder feedback constitute the control and accountability structures that govern that renewal. In a service-intensive environment such as VET, where curricular content must remain aligned with rapidly evolving labour-market demands, the capacity to convert stakeholder feedback into actionable adjustments constitutes a strategic asset. The literature, however, contains several silences. Few studies have traced how feedback flows from heterogeneous stakeholders—students, trainers, employers, regulators, and external referrers—are organisationally absorbed into operational decision-making. Equally, the question of how compliance audits themselves function as feedback channels, rather than merely as external impositions, has received insufficient empirical attention. The AHIC case offers a productive site for examining these gaps, because the institution has explicitly architected its feedback systems as a governance device rather than as an isolated quality-assurance function. A complementary literature on digital transformation in education suggests that Learning Management Systems, Customer Relationship Management platforms, and learning-analytics tools can amplify these feedback flows when integrated with pedagogical theory and stakeholder needs, while their value remains limited when adopted as discrete technological interventions disconnected from organisational governance (Sharma *et al.*, 2023; Hernández-Campos *et al.*, 2025; Pan *et al.*, 2024; Paulsen & Lindsay, 2024).

5. Single-case based research

The third literature underpinning this study concerns the methodological status of case-based research within management scholarship. Recent contributions have insisted that qualitative case studies, when carefully designed and systematically conducted, generate forms of knowledge that quantitative and computational approaches cannot easily replicate (Cornelissen, 2017; Eisenhardt & Graebner, 2007; Eisenhardt, 1989; Yin, 2009). Cornelissen (2017) argued that the explanatory potential of qualitative inquiry lies precisely in its capacity to preserve theoretical divergence and to surface mechanisms that would otherwise be obscured by aggregation. In a similar vein, Wickert *et al.* (2021) urged management scholars to broaden the meaning of impact, embracing in-depth, contextually grounded analyses that speak to both theory and practice. Methodological research has further specified the conditions under which case-based studies achieve high theoretical leverage. Hoorani *et al.* (2019) showed that the rigour and articulation of case-study design correlate with citation impact, while Lindgreen *et al.* (2021) provided detailed guidance on transparent methodological reporting. Gioia *et al.* (2013) offered a now-standard template for demonstrating analytical rigour in inductive research by making visible the movement from first-order, informant-centred codes to second-order, theory-centred themes and aggregate dimensions; the present study adopts this template explicitly (see Table 2). Simsek *et al.* (2025) and Bergh *et al.* (2022) emphasised that methodological rigour is not reducible to procedural conformity but encompasses the careful articulation of research logic, evidentiary base, and inferential warrant. Parker *et al.* (2024), drawing on historical methods, demonstrated how systematic case construction can support inference to the best explanation in strategy research, reinforcing the credentials of qualitative inquiry as a theory-building enterprise. The present study aligns itself with this tradition, heeding Alvesson and Sandberg's (2013) call for theoretically ambitious management research and Reinecke *et al.*'s (2016) insistence on the suitability of qualitative methods for examining ethically and contextually complex managerial phenomena.

6. Theoretical propositions

Synthesising the three literatures, the study advances four propositions that are subsequently examined against the case evidence. P1. In regulated service settings, compliance operates as an input to service quality rather

than as a competing constraint when audit findings are absorbed into continuous-improvement routines rather than treated as binary pass-or-fail events. P2. Stakeholder feedback functions as a governance device – rather than as a passive measurement output – when its conversion into action is endowed with defined ownership, cadence, and decision rights. P3. Digital infrastructure enhances service quality only when embedded in organisational governance, acting as an enabler that amplifies other mechanisms rather than as an autonomous driver. P4. The reconciliation of compliance and quality is configurational: institutional outcomes derive from the mutually reinforcing integration of the pillars rather than from the strength of any single pillar in isolation. These propositions are not tested in a hypothetico-deductive sense; consistent with theory-elaborating case logic, they organise the interpretation of the evidence and are revisited in the discussion.

7. Methodology

The study adopts a qualitative, theory-elaborating single-case design (Eisenhardt & Graebner, 2007; Eisenhardt, 1989; Yin, 2009). The choice of a single case is justified because the phenomenon under investigation, the integrated reconciliation of compliance and quality logics through an articulated organisational framework, is intrinsically processual, multi-actor, and context-embedded, and is therefore best examined within its real-life institutional setting (Gummesson, 2017; Patton & Appelbaum, 2003). Second, AHIC constitutes a revelatory case in Yin's (2009) sense. The revelatory claim rests on three specific grounds rather than on the institution's success per se. First, AHIC is among a comparatively small number of private Australian RTOs that have publicly articulated a comprehensive, documented service-quality framework, making organisational processes that are normally opaque available for analysis. Second, the institution has sustained the framework across a full multi-year regulatory cycle (2021 – 2024), so that the dynamics of integration rather than a static snapshot can be observed. Third, AHIC is strategically informative because it operates at the precise pressure point identified in the introduction: the widening provider-employer satisfaction gap that characterises the Australian VET sector. It is therefore selected not because it is typical, but because it renders visible mechanisms that are theoretically important and ordinarily inaccessible. The case is approached through what Yin (2009) terms an embedded design: the institution as a whole is the unit of analysis, while five subordinate units -curriculum design, feedback systems, trainer development, digital infrastructure, and student support and stakeholder engagement- operate as sub-units within

which mechanisms can be examined. Consistent with established practice in case-based research, the study triangulates multiple data sources to mitigate single-method biases and to enhance construct validity (Lindgreen *et al.*, 2021; Yin, 2009). The evidentiary base spans the 2021 – 2024 period and comprises four categories of material, summarised in Table 1. Table 1 makes the evidentiary base transparent by specifying, for each category, the materials drawn upon, the period covered, and the analytical use to which the evidence was put. Where exact counts and individual audit dates are governed by the institution’s confidentiality arrangements, the table indicates the items to be confirmed in the final author-verified version; the analytical claims do not depend on any single undisclosed figure.

Table 1: Data sources, coverage, and analytical use

Source	Materials drawn upon	Period	Analytical use
Internal documents	Service Quality Management Framework; Quality Assurance Framework; strategic-planning documents; annual self-assessments; professional-development plans; individualised learning plans N=34	2021-2024	Reconstructing the design logic of the five pillars
Performance and audit	Completion-rate and retention trajectories; employer-satisfaction summaries; ASQA audit findings across successive registration/audit cycles; internal compliance-review outcomes	2021-2024	Corroborating reported outcomes; tracing audit-to-action loops
Stakeholder-feedback	Termly student-satisfaction surveys (academic, administrative, and resource domains); trainer peer-review and evaluation summaries; employer feedback associated with work placements N_42	2021-2024	Evidencing the feedback-as-governance mechanism
Contextual sectoral	Productivity Commission (2025); NCVET (2024); Department of Employment and Workplace Relations publications	2015 – 2024	Situating the institutional case within national VET trends

Where institutional metrics are reported in the findings, they are corroborated by at least two independent sources to attenuate the risk of reputational bias. The design relies on documentary, archival, performance, and survey-

summary evidence rather than on primary interviews. This choice is defensible on two grounds. First, the research question concerns organisational mechanisms, review cadences, ownership of feedback conversion, audit-to-action routines, that are inscribed in institutional documents, committee records, and performance series, and are therefore better evidenced by archival traces than by retrospective accounts vulnerable to recall and impression-management bias. Second, the longitudinal documentary record (2021-2024) affords temporal depth that a small set of cross-sectional interviews could not. The authors nonetheless acknowledge that interviews would have enriched the account of lived experience, and identify this as a limitation and an avenue for future work. Data analysis followed an abductive logic in which empirical patterns were iteratively confronted with theoretical concepts drawn from the service-quality, continuous-improvement, and case-methodology literatures (Alvesson & Sandberg, 2013; Cornelissen, 2017). Analysis proceeded through the three-stage structure codified by Gioia *et al.* (2013), summarised in Table 2. Initial open coding identified recurrent first-order categories such as feedback loops, trainer capability, digital enablement, and audit responsiveness; these were progressively organised into five second-order pillars that structure the findings, and ultimately consolidated into three aggregate theoretical dimensions presented in the discussion. Concretely, first-order codes were assigned to data excerpts (for example, a documented monthly committee decision converting survey results into a curriculum action was coded as “feedback ownership”); cognate codes were then clustered into the second-order pillars; and the pillars were related to one another to yield the three aggregate dimensions. Table 3 illustrates, for selected mechanisms, the link between specific evidence and the analytical claim, in line with the reviewers’ request for a transparent evidence-to-claim chain. Throughout the coding process, attention was paid to disconfirming evidence and to within-case variation, in line with Hoon’s (2013) discussion of meta-synthetic logic and Hoorani *et al.*’s (2019) emphasis on rigour. The study addresses the standard quality criteria for qualitative inquiry articulated by Johnson *et al.* (2006): construct validity is supported through triangulation; internal validity is reinforced through pattern matching against theoretical propositions; external validity is approached through analytical rather than statistical generalisation; and reliability is supported by maintaining a transparent case database. Reflexively, the authors note a potential conflict of interest requiring explicit management: one member of the author team is affiliated with AHIC. To mitigate the associated risk of confirmation and reputational bias, the AHIC-affiliated author contributed institutional access and factual verification but did not lead the coding or the theoretical interpretation, which were conducted and cross-checked by authors external to

the institution. Concretely, factual verification followed a three-step protocol designed to insulate the analysis from the affiliated author’s standpoint. First, the AHIC-affiliated author supplied institutional documents and factual statements but did not adjudicate their interpretation. Second, each factual claim subsequently reported in the findings, for example, the existence and monthly cadence of the Quality and Compliance Committee, the routinisation of curriculum review as a calendar event, or the direction of the reported performance trajectories, was independently checked by at least one author external to the institution against a corroborating source drawn from a different evidentiary category, namely ASQA audit findings, performance and retention series, or sectoral publications, rather than against the affiliated author’s testimony alone. Third, any claim that could not be corroborated by such an independent source was either reformulated as an explicitly institution-attributed characterisation or removed, and the affiliated author was excluded from finalising any contested claim. This separation of access from inference was intended to convert the potential conflict of interest into a controlled division of labour rather than an unmonitored source of bias. Emerging interpretations were deliberately confronted with disconfirming evidence and with sector-level critical literature highlighting persistent systemic tensions (Productivity Commission, 2025), in keeping with the methodological standards advocated by Bergh *et al.* (2022) and Simsek *et al.* (2025).

Table 2: Data structure: from first-order codes to aggregate dimensions

First-order codes	Second-order pillars	Aggregate dimension
Curriculum review embedded as calendar event; individualised learning plans; corrective/preventive actions integrated with survey insights; audit-as-learning-loop	Curriculum design as service co-creation; Feedback architecture as governance device	Compliance – quality as a productive duality (P1)
Role-specific PD plans; industry currency; peer observation; LMS/CRM deployment; analytics with pre-specified intervention thresholds	Trainer capability as relational quality; Digital infrastructure as enabler	Sociotechnical and relational enablement (P3)
Heterogeneous feedback channels; Quality and Compliance Committee ownership and cadence; employer and agent engagement; integrated welfare and academic support	Holistic support and stakeholder integration (with the governance reading of the feedback architecture)	Stakeholder feedback as governance and integration (P2, P4)

Tab. 3: Illustrative evidence linked to analytical claims

Mechanism / claim	Data source(s)	Evidence
Audit findings absorbed as feedback (P1)	ASQA audit findings; corrective-and-preventive-action (CAPA) records	Actions logged after audit cycles feed into curriculum and PD review rather than a one-off remediation
Feedback ownership and cadence (P2)	Quality and Compliance Committee monthly review records	Documented monthly conversion of aggregated feedback into prioritised improvement actions
Curriculum review as routinised rhythm (P1)	Curriculum-review schedule; individualised learning plans	Review scheduled as a recurring calendar event; plans issued for learners needing academic or English-language support
Analytics restraint / actionability (P3)	Learning-analytics dashboards; student-support workflow	Pre-specified thresholds trigger student-support contact, prioritising actionability over dashboard sophistication

8. Empirical context: the Australian VET sector and AHIC

Australia's VET sector is a large, mixed-provider system that delivered training to approximately 5.1 million students in 2023, of whom 2.3 million were enrolled in nationally recognised qualifications (NCVER, 2024). The sector is regulated nationally through the Standards for RTOs 2015 and overseen by ASQA. Private providers deliver the majority of accredited training, accounting for approximately 81.7 per cent of the 2023 cohort. National student satisfaction has remained high, at 89.3 per cent in 2024, but employer satisfaction has declined steadily over the past decade, from 72.9 per cent in 2015 to 66.4 per cent in 2024 (Productivity Commission, 2025). This widening provider-employer gap has intensified pressure on private RTOs to demonstrate not only regulatory compliance but tangible alignment with industry expectations. Within this environment, AHIC operates as a private RTO based in Sydney, delivering nationally accredited qualifications across business, management, health, hospitality, and information technology. The institution serves a diverse student population, including significant numbers of international learners and students from culturally and linguistically diverse backgrounds. Strategically, AHIC has positioned itself around three commitments: alignment with the national VET Quality Framework, service excellence as a competitive differentiator, and continuous improvement as an organisational identity rather than a procedural artefact. Between 2021

and 2024, AHIC implemented a Service Quality Management Framework articulating five interconnected pillars: student-centred curriculum design, systematic feedback and monitoring, professional development for trainers, digital transformation, and holistic student support. Over the same period the institution recorded an 18 per cent increase in completion rates, a 22 per cent reduction in staff turnover, sustained student satisfaction above 85 per cent, and favourable findings across multiple ASQA audits. These figures, relocated here from the introduction, describe the empirical setting; the analytical question, pursued in the findings, concerns the organisational logic by which such outcomes were produced rather than the outcomes themselves. Between 2021 and 2024, the institution undertook a system-wide redesign of its service architecture, the outcomes of which constitute the empirical material analysed in the next section.

9. Findings

The analysis identifies five interlocking pillars through which AHIC has architected its Service Quality Management Framework. Each pillar is presented as a discrete analytical cluster, but it is the integrated configuration, rather than the individual elements, that constitutes the institution's distinctive contribution to compliance-quality reconciliation.

10. Reframing curriculum design as service co-creation

The first pillar concerns curricular design. Rather than treating curriculum as a static deliverable mandated by training packages, AHIC has reframed it as an ongoing site of co-creation between learners, trainers, employers, and external referrers. Curricula are designed and periodically reviewed to integrate learner needs and industry relevance, with updates coordinated through periodic consultation with industry stakeholders. Individualised learning plans are systematically developed for students requiring additional academic or English-language support, and flexible delivery modes (face-to-face, blended, and online) accommodate the institution's heterogeneous learner base. This pillar resonates with the service-dominant logic perspective on educational provision and with recent contributions in service-quality research that conceptualise students as co-producers of learning value rather than as passive recipients of teaching (Seitova *et al.*, 2024; Magasi *et al.*, 2022; Harvey & Green, 1993). Empirically, this pillar coincides with the eighteen per cent rise in completion rates between 2021 and 2024. Because

a single-case design provides no counterfactual, this association cannot be read as a causal effect; it is offered as evidence consistent with – rather than proof of – the proposition that curricular responsiveness supports learner outcomes (P1). Two micro-level mechanisms warrant attention. The first is the routinisation of curriculum review as a calendar event rather than as an exceptional response to audit failure: by embedding review cycles into the academic calendar, AHIC has converted what is often experienced as compliance friction into a continuous-improvement rhythm. The second is the deliberate articulation of individualised learning plans as instruments of service personalisation, signalling that the institution treats learner heterogeneity as a design parameter rather than as a problem to be standardised away. Both mechanisms reinforce the broader argument that compliance and quality are co-produced through the design of organisational rhythms.

11. The feedback architecture as a governance device

The second pillar concerns the institution's multi-source feedback architecture. AHIC operates a structured feedback system that integrates termly student satisfaction surveys covering academic, administrative, and resource-related domains; employer satisfaction surveys associated with work placements; periodic trainer evaluations and peer reviews; and a Quality and Compliance Committee that reviews aggregated feedback monthly. The committee's mandate is not merely to record stakeholder views but to convert them into actionable improvement priorities feeding into curriculum review, professional development, and student-support decisions. This architecture distinguishes itself from conventional satisfaction monitoring in two respects. First, the feedback channels are deliberately heterogeneous – learners, employers, trainers, and regulators each contribute through differently configured instruments – generating a polycentric evidentiary base that no single instrument can produce. Second, the institutional absorption of feedback is governed by a defined cadence and ownership structure, rather than being left to discretionary management interpretation. In this sense, feedback functions as a governance device, in the spirit of recent work on continuous improvement and stakeholder engagement in higher education (Iqbal, 2026; Taraza *et al.*, 2024) and consistent with the dynamic-capabilities view of feedback as a sensing-and-reconfiguring mechanism (Teece, 2007). This pillar provides the principal evidence for P2: feedback becomes a governance device precisely because its conversion into action carries defined ownership (the committee), a defined cadence (monthly), and explicit decision rights. Empirically, sustained student satisfaction above 85 per cent across internal

and external surveys, coupled with favourable findings across multiple ASQA audit cycles, attests to the responsiveness of the architecture. Notably, the institution treats audit findings themselves as feedback inputs rather than as binary pass-or-fail events; corrective and preventive actions are integrated into the same continuous-improvement workflow as student-survey insights. This design choice operationalises the theoretical insight that compliance and quality are mutually constitutive: the audit cycle becomes a learning loop rather than a punctuated external imposition. A noteworthy mechanism is the de-coupling of feedback collection from feedback ownership: while surveys and reviews are administered through routine channels, the Quality and Compliance Committee assumes explicit responsibility for analysing patterns and assigning improvement priorities. By formalising who owns the conversion of evidence into action, AHIC mitigates the well-documented tendency of feedback systems to accumulate data without producing organisational learning, a pattern repeatedly observed in higher-education quality-management research (Iqbal, 2026). Three recurring feedback-to-action cycles, traceable across the committee records and the supporting documentary base, illustrate how this governance routine operates in practice rather than only in principle. In the first, a student-survey cycle, recurrent dissatisfaction signals in the academic-support domain of the termly satisfaction surveys are aggregated by the Quality and Compliance Committee and converted into a prioritised action, namely the strengthening and rescheduling of individualised learning-plan provision for cohorts identified as needing additional English-language or academic support, with the resulting adjustment logged against the originating survey theme. In the second, an employer cycle, feedback gathered around work placements, characteristically concerning the job-readiness of graduates in particular competency areas, is routed through the same committee into curriculum review, where it informs adjustments to unit sequencing and assessment emphasis so that provision tracks the articulated industry expectation rather than remaining fixed to the training-package baseline. In the third, an audit cycle, findings arising from ASQA audit and internal compliance review are recorded as corrective-and-preventive actions and deliberately fed into the same continuous-improvement workflow as stakeholder feedback, so that an audit observation bearing on assessment validity is resolved not merely through point remediation but through a corresponding revision of trainer professional-development priorities. In each case the defining feature is not the collection of the signal but its documented conversion, under a named owner and a fixed cadence, into a curricular, support-service, or professional-development change, the audit-to-action and feedback-to-action loops summarised in Tab. 3. The cycles are reported here at the level of routinised organisational form rather than through

individual dated incidents, in keeping with the confidentiality arrangements governing the institution's internal records and with the study's focus on mechanisms rather than episodes.

12. Trainer capability as relational quality

The third pillar concerns the systematic development of trainer capability. AHIC has implemented a layered professional-development architecture that includes role-specific training plans aligned with national training-package requirements; mandatory currency in industry engagement and continuing professional learning; and internal workshops covering pedagogy, compliance, and digital integration. Trainers are evaluated through a combination of performance review and peer observation, the outputs of which feed back into the institution's broader feedback architecture. Conceptually, this pillar reframes trainer development not as a human-resources function operating at the margins of teaching but as a constitutive element of service quality. Service-quality research has long emphasised that the perceived empathy, responsiveness, and assurance dimensions of educational service depend critically on the relational capabilities of front-line staff (Alemu, 2023; Magasi *et al.*, 2022; Kovaci *et al.*, 2020; Ramsden, 1991). The AHIC case extends this insight by demonstrating that trainer capability functions simultaneously as a quality determinant and as a compliance asset: trainers who are current in their industry and reflective in their pedagogy more readily satisfy ASQA expectations and more effectively engage learners. The empirical correlate is a twenty-two per cent reduction in staff turnover between 2021 and 2024, which the institution attributes to increased job satisfaction, structured career-development pathways, and a sense of professional purpose generated by the framework. As with completion rates, this attribution is the institution's own and is reported here as consistent with, rather than as demonstrating, the underlying mechanism. This outcome chimes with VET-specific scholarship that has identified trainer capability as one of the most underestimated levers of sectoral performance (Seet & Jones, 2021; Billett, 2011).

13. Digital infrastructure as enabler, not driver

The fourth pillar concerns AHIC's investment in digital infrastructure. The institution has deployed an LMS to manage course delivery, assessments, and feedback; a CRM platform to monitor student enquiries, enrol-

ments, and communication histories; and data-analytics capabilities to support early intervention for learners at risk of disengagement or underperformance. These tools collectively enable the institution to move from periodic, retrospective reporting to continuous, real-time monitoring of learning and service-delivery indicators. Importantly, the case suggests that digital infrastructure functions as an enabler rather than as a driver of service quality. The LMS does not, in itself, produce learner satisfaction; rather, it amplifies the responsiveness of the curricular and feedback pillars described above, providing direct support for P3. This interpretation aligns with recent literature on learning analytics, which has emphasised that the value of analytics platforms depends on their integration with pedagogical theory, stakeholder needs, and institutional governance (Hernández-Campos *et al.*, 2025; Pan *et al.*, 2024; Paulsen & Lindsay, 2024), and with broader scholarship on digital transformation in higher education that conceptualises technology as part of a sociotechnical reconfiguration rather than a discrete intervention (Sharma *et al.*, 2023). A subtle but important micro-mechanism is the deliberate avoidance of analytics over-reach: rather than maximising the technical sophistication of dashboards, the institution has prioritised actionability, organising analytics outputs around pre-specified intervention thresholds connected to the responsibilities of student-support staff. This pragmatic restraint reinforces the broader theoretical claim that integration – not technological intensity – is the determinant of service-quality outcomes.

14. Holistic support and stakeholder integration

The fifth pillar concerns the institution's holistic support architecture and its integration with industry and external stakeholders. AHIC has invested in academic support units focused on English, numeracy, and general learning strategies, alongside welfare services including counselling and referrals to community providers. International students benefit from tailored orientation programmes covering rights, responsibilities, and safety. Externally, the institution maintains active relationships with industry partners, education agents, and pathway institutions, and engages employers in curriculum review and placement design. This pillar operationalises the stakeholder-engagement dimension that recent continuous-improvement literature identifies as decisive for sustained quality (Iqbal, 2026; Taraza *et al.*, 2024). It also responds to long-standing concerns regarding the alignment of provision with the heterogeneous needs of culturally and linguistically diverse learners. By integrating support services with curricular and feedback systems, AHIC ensures that learner welfare is not treated as an ancillary function but as a

constitutive component of service quality. Empirically, the integration is reflected in two outcomes: employer feedback consistently characterises AHIC graduates as well-prepared and job-ready, and the institution has been recognised as a preferred provider by several education agents and pathway institutions, signalling reputational capital that translates into enrolment stability. The five pillars are most analytically powerful when read together. The institutional outcomes – rising completion rates, sustained learner and employer satisfaction, favourable audit findings, reduced staff turnover, reputational capital – are not attributable to any single pillar in isolation, but to their configuration as a coherent, mutually reinforcing system. Curricular responsiveness depends on feedback flows; feedback flows depend on trainer capability; trainer capability is amplified by digital infrastructure; digital infrastructure is rendered meaningful by stakeholder integration; and stakeholder integration is, in turn, enabled by curricular responsiveness. This circularity is theoretically significant and provides the evidence for P4: it suggests that service-quality management in regulated educational contexts is best understood as a configurational rather than a linear phenomenon, consistent with broader configurational theorising in management research (Eisenhardt & Graebner, 2007). The configurational reading raises a further question of internal architecture: whether any pillar is especially foundational, or whether the framework operates only when all five are simultaneously present. The case evidence supports a two-part answer. On the one hand, the feedback architecture occupies a functionally foundational position, because it is the mechanism through which the other four pillars are coordinated: curriculum review is triggered and prioritised by feedback flows; trainer development is informed by peer-review and evaluation outputs that re-enter the feedback system; digital infrastructure derives its value from amplifying those same flows; and stakeholder integration is the means by which heterogeneous feedback is generated in the first place. In this sense the feedback architecture is best understood as the integrative hub, or keystone, of the configuration necessary for the system to cohere, since without a governed conversion of evidence into action the remaining pillars would revert to disconnected functions. On the other hand, foundational does not mean sufficient. The keystone status of the feedback architecture is precisely a status it holds within a configuration: a governed feedback system with no responsive curriculum to adjust, no capable trainers to enact change, no digital infrastructure to surface signals, and no stakeholder relationships to supply them would govern very little. The institutional outcomes are therefore attributable not to the feedback architecture in isolation but to the simultaneous co-presence and mutual reinforcement of all five pillars, with the feedback architecture serv-

ing as the coordinating mechanism that renders the configuration self-sustaining rather than as an independent driver. This formulation sharpens P4: the framework exhibits configurational sufficiency, outcomes require the whole, while assigning the feedback architecture a distinctive coordinating necessity within that whole.

15. Discussion

The first contribution concerns the relationship between compliance and quality. The dominant assumption in much educational-management discourse has been that compliance and quality stand in tension, with organisations either prioritising procedural conformity at the expense of pedagogical innovation, or treating quality of experience as the primary aim and absorbing compliance costs as friction. The AHIC case challenges this framing: when compliance procedures are themselves designed as feedback channels and integrated into a continuous-improvement architecture, they become productive inputs to quality rather than its competitors (P1). The originality of the claim lies less in noting that the two can coexist – which prior work has suggested – than in specifying the mechanism of coexistence: it is the absorption of audit findings into the same ownership-and-cadence governance that processes stakeholder feedback that converts compliance from constraint into input. This reframing extends recent work that has questioned the binary characterisation of compliance and quality (Iqbal, 2026; Magasi *et al.*, 2022) and resonates with broader theoretical traditions on organisational ambidexterity, which conceptualise apparent dualities as productive tensions managed through structural and cultural integration rather than as zero-sum trade-offs. The methodological implication is that future case-based research on regulated service organisations might fruitfully shift its analytical focus from the trade-off question (“how much quality must be sacrificed for compliance?”) to the integration question (“through what mechanisms are compliance and quality co-produced?”). A particularly suggestive aspect of the AHIC configuration is the treatment of audit findings as feedback inputs: by absorbing external compliance evaluations into the same governance architecture that processes student and employer feedback, the institution erodes the symbolic boundary between internal and external evaluation, with practical implications for regulators that audit regimes may be more effective when designed to generate organisational learning rather than merely to verify procedural conformity (Parker *et al.*, 2024; Simsek *et al.*, 2025). The second contribution concerns how stakeholder feedback functions within the in-

stitution's continuous-improvement architecture. The case reveals that feedback exerts theoretical leverage not because it is collected at high frequency, but because it is institutionalised within a governance device with clear ownership, defined cadence, and explicit conversion into action (P2). Framed in corporate-governance and R&D terms, the feedback architecture operates as an internal control-and-renewal mechanism: it supplies the accountability structure (who owns the conversion of evidence into action) and the renewal function (the recurrent, evidence-driven adjustment of the service offer) that together govern organisational improvement. This finding refines the dominant SERVQUAL/SERVPERF tradition by foregrounding the organisational metabolism of feedback rather than its measurement. The refinement is consistent with recent contributions arguing that perception-based service-quality research must be complemented by process-oriented analysis of how feedback is internally absorbed and acted upon (Cornelissen, 2017; Parker *et al.*, 2024). The AHIC case provides a concrete illustration: the Quality and Compliance Committee functions as a translation interface between heterogeneous feedback flows and operational decisions in curriculum, professional development, and student support. Without such a translation interface, even sophisticated feedback instruments risk producing data accumulation without organisational learning. The implication for management theory is that stakeholder feedback is best conceptualised as a governance device—an institutional mechanism through which heterogeneous voices are processed, prioritised, and converted into action—rather than as a passive measurement output, in alignment with research on dynamic capabilities and continuous improvement that has emphasised cultural and political dimensions alongside technical procedure (Iqbal, 2026; Taraza *et al.*, 2024; Teece, 2007). The third contribution is methodological and practical. The study illustrates how an embedded single-case design can generate theoretical leverage in a regulated, multi-stakeholder service context. Three features warrant attention. First, the embedded structure—five sub-units within a single case—permits analytical disaggregation while preserving the holistic logic of the institution, responding to Hoorani *et al.*'s (2019) finding that case-study impact correlates with rigour and articulation of design and to Lindgreen *et al.*'s (2021) call for transparent methodological reporting, here met through the explicit data structure of Table 2 (Gioia *et al.*, 2013). Second, the longitudinal evidentiary base spanning 2021 – 2024 captures process dynamics that cross-sectional designs cannot, in line with Parker *et al.*'s (2024) emphasis on temporal depth. Third, the explicit articulation of triangulation across institutional documents, performance metrics, multi-stakeholder feedback, and sectoral data addresses Bergh *et al.*'s (2022) argument that meth-

odological contributions require explicit reflection on what the chosen approach uniquely affords. More broadly, the article supports Cornelissen's (2017) and Wickert *et al.*'s (2021) contention that qualitative case research has a distinctive role to play in producing theoretically and practically meaningful knowledge. From a practical perspective, the case suggests that for VET providers investments in any single pillar – digital infrastructure, trainer development, or feedback systems – are likely to yield modest returns unless accompanied by integration with the other pillars; institutional leaders should therefore prioritise architectural coherence over discrete excellence in individual elements (P4). For regulators, the findings imply that audit regimes can be designed to generate organisational learning, not merely to verify conformity, by foregrounding feedback channels and corrective-and-preventive cycles. For policy-makers, the persistent decline in employer satisfaction at the national level (Productivity Commission, 2025) suggests that structural rather than incremental responses may be required, and that integrated frameworks of the kind illustrated here may offer a useful template at sector level.

16. Conclusion, limitations, and future research

This article has examined how an Australian Registered Training Organisation reconciles compliance and quality through an integrated Service Quality Management Framework. Drawing on a qualitative single-case design and a multi-source evidentiary base, the analysis has identified five interlocking pillars and theorised their integration as a productive duality between compliance and quality. The contribution to management research is threefold: a reframing of the compliance-quality relationship in regulated service contexts, a refinement of service-quality theory through the conceptualisation of feedback as governance, and a methodological demonstration of the theoretical leverage afforded by carefully designed single-case research. Three limitations should be acknowledged. First, single-case designs sustain analytical rather than statistical generalisation; the mechanisms identified are likely to operate in similarly structured RTOs but their boundary conditions remain to be specified through comparative work. Second, the study draws extensively on institutional documents, raising the possibility of reputational bias even though triangulation with audit findings and sectoral data has been used to mitigate this risk. Third, the temporal scope of 2021 – 2024 captures a period of significant post-pandemic adjustment in the Australian VET sector and may limit the transferability of conclusions to substantially different macro-environments. Several promising avenues for future research follow. Comparative multiple-case designs across diverse

RTOs would test the boundary conditions of the configurational logic identified here. Longitudinal studies extending beyond four years would permit closer scrutiny of the path-dependent dynamics of integrated frameworks. Mixed-methods research could complement the present qualitative analysis with quantitative measurement of stakeholder-feedback metabolism, and primary interviews with trainers, learners, and employers would add experiential depth to the archival account offered here, in line with the call for methodological pluralism advanced by Reinecke *et al.* (2016) and Simsek *et al.* (2025). Comparative work across regulatory regimes would, finally, clarify the extent to which integrated compliance – quality architectures depend on, or operate against the grain of, the regulatory cultures within which they are embedded. In doing so, qualitative case research would continue to fulfil its theoretical promise as a generative engine of management knowledge (Alvesson & Sandberg, 2013; Cornelissen, 2017; Wickert *et al.*, 2021).

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Professional Training as a Mechanism of Cognitive Governance in Digital Transformation: A Comparative Multiple-Case Study of Italian Accounting Firms

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Abstract

Digital transformation is profoundly reshaping professional service firms, affecting the nature of professional work, the role of technology, and the mechanisms through which value is created. Although the literature has extensively examined the effects of digitalisation on professional activities and organisational models, the role of professional training in the governance of these transformations remains relatively underexplored.

This study addresses this gap by conceptualising training not merely as an individual investment in human capital, but as an organisational mechanism that influences professional judgement and the strategic adaptability of organisations. Drawing on a qualitative, theory-driven comparative multiple-case study of 30 Italian accounting firms undergoing digital transformation and based on semi-structured interviews, the study highlights the existence of a systematic trade-off between short-term efficiency and medium- to long-term adaptability.

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The findings show that training pathways primarily focused on procedural knowledge foster rapid initial productivity but tend to reinforce technological dependence and limit the ability to address non-standard situations. By contrast, the integration of theoretical and conceptual content in training supports the development of professional judgement, mitigates automation bias, and contributes to the evolution of the service model.

The study contributes to the literature on professional service firms and digital transformation by showing how training can be interpreted as a mechanism of cognitive governance and, more specifically, as a driver of different knowledge structures shaping technological adaptation trajectories in knowledge-intensive organisations.

Keywords: professional training, professional service firms, digital transformation, professional judgement, strategic adaptability, cognitive governance.

Sommario

La trasformazione digitale sta ridefinendo profondamente le professional service firms, modificando la natura del lavoro professionale, il ruolo della tecnologia e i meccanismi attraverso cui viene creato valore. Sebbene la letteratura abbia ampiamente analizzato gli effetti della digitalizzazione sulle attività professionali e sui modelli organizzativi, il ruolo della formazione professionale nella governance di tali trasformazioni rimane ancora relativamente poco esplorato.

Il presente studio affronta questa lacuna concettualizzando la formazione non soltanto come un investimento individuale in capitale umano, ma come un meccanismo organizzativo capace di influenzare il giudizio professionale e l'adattabilità strategica delle organizzazioni. Attraverso uno studio qualitativo comparativo a casi multipli, guidato dalla teoria, condotto su 30 studi professionali di commercialisti italiani impegnati in processi di trasformazione digitale e basato su interviste semi-strutturate, la ricerca evidenzia l'esistenza di un trade-off sistematico tra efficienza di breve periodo e adattabilità nel medio-lungo termine.

I risultati mostrano che i percorsi formativi prevalentemente orientati alle conoscenze procedurali favoriscono una rapida produttività iniziale, ma tendono a rafforzare la dipendenza tecnologica e a limitare la capacità di affrontare situazioni non standard. Al contrario, l'integrazione di contenuti teorici e concettuali nei percorsi di formazione sostiene lo sviluppo del giudizio professionale, riduce il rischio di automation bias e contribuisce all'evoluzione del modello di servizio.

Lo studio contribuisce alla letteratura sulle professional service firms e sulla trasformazione digitale mostrando come la formazione possa essere interpretata come un meccanismo di governance cognitiva e, più specificamente, come un fattore in grado di generare differenti strutture di conoscenza che orientano le traiettorie di adattamento tecnologico nelle organizzazioni ad alta intensità di conoscenza.

Parole chiave: formazione professionale; professional service firms; trasformazione digitale; giudizio professionale; adattabilità strategica; governance cognitiva.

1. Introduction

Digital transformation is profoundly reshaping knowledge-intensive organisations by altering value-creation mechanisms, required competences, and organisational forms. This is especially evident in professional service firms (PSFs), where value depends not on process standardisation but on the mobilisation of specialised expertise and the exercise of professional judgement in complex and uncertain contexts (Maister, 1993; von Nordenflycht, 2010).

Accounting firms provide a particularly revealing PSF setting because they combine knowledge-intensive work, high regulatory pressure, and rapid digitalisation of core tasks. Software, cloud platforms, and automation have increased efficiency in standardisable accounting and tax activities, but they have also intensified concerns about service commoditisation and the erosion of the distinctive value of professional work (Susskind & Susskind, 2015; Autor, 2015).

Although the literature has shown that digitalisation reshapes professional work and intensifies the tension between efficiency and judgement-based value creation, it remains less clear how organisations can actively govern this tension. In this debate, professional training remains surprisingly under-explored. In practice, training is often treated as an operational mechanism for rapid alignment to procedures and software, rather than as an organisational device shaping learning capacity, interpretative autonomy, and long-term adaptability.

Management literature suggests that training should be understood not only as an investment in human capital, but also as a mechanism through which organisations build and renew collective capabilities (Becker, 1993; Teece *et al.*, 1997; Esposito De Falco, 2014). Yet an important gap remains: PSF research pays limited attention to training as an organisational lever, while training studies focus largely on individual outcomes, overlooking its organisational and strategic implications in knowledge-intensive contexts. This fragmentation also raises a methodological question, since such mechanisms unfold through situated organisational processes rather than directly observable variables.

In particular, limited attention has been devoted to understanding how different approaches to training may shape divergent organisational trajectories under digital pressure. This study builds on a distinction between predominantly operational training and theoretical-conceptual training, understood as analytical ideal types rather than mutually exclusive empirical categories, since several firms combine elements of both approaches in practice. The latter does not simply refer to a greater quantity of theoretical content in

an academic sense, but rather to a training approach that integrates principles, interpretative frameworks and decision rationales into professional practice, enabling professionals to understand not only how procedures are performed but also why they are performed in a particular way. In the context of accounting firms, theoretical-conceptual training includes accounting principles, tax interpretation, professional ethics, risk assessment, advisory reasoning, and the conceptual foundations underlying digital procedures. This distinction is crucial, as it suggests that training is not a neutral variable but an organisational device that structures the relationship between professionals and technology and influences the organisation's ability to deal with non-standard situations. From this perspective, training choices may either reinforce or weaken the role of professional judgement within digitally mediated organisational contexts. Accordingly, the paper conceptualises training as a mechanism of cognitive governance through which PSFs orient how professionals interpret technology, exercise judgement, and respond to changing organisational demands over time. In this study, cognitive governance refers to the set of organisational practices through which firms shape the interpretative frameworks, judgement processes, and decision-making logics used by professionals when interacting with technology and addressing novel situations. Unlike organisational learning, which focuses on the acquisition and sharing of knowledge, cognitive governance concerns the organisational regulation of how knowledge is interpreted and applied in practice. It therefore differs from professional socialisation, training transfer, knowledge governance and dynamic capabilities because it focuses specifically on how organisations shape professionals' interpretative and judgement processes. More specifically, cognitive governance comprises three closely related dimensions: interpretative framing, judgement formation, and decision-making logic.

Building on this gap, the present study adopts an organisational and managerial perspective on professional training in accounting firms, analysing training not merely as a tool for individual skill development but as a mechanism of cognitive and organisational governance in the context of digital transformation. Drawing on a comparative multiple-case analysis of Italian accounting firms, the study compares predominantly operational training pathways with those integrating theoretical-conceptual content, in order to understand how these differences influence the development of professional judgement, the degree of technological dependence and the ability to evolve the service model. This case-based approach makes it possible to examine in depth the organisational mechanisms through which training practices mediate the relationship between technology, professional knowledge and service-model configurations in context. The comparative multiple-case design

is adopted as a theoretically appropriate methodological choice for observing how different training configurations generate distinct organisational mechanisms and trajectories under digital transformation. This design is necessary for tracing how training-related mechanisms unfold across organisational contexts and over time, making visible forms of relational variation and theory-relevant dynamics that would be difficult to capture through variable-based approaches (Gummeson, 2017; Lindgreen *et al.*, 2021).

The main contribution of this study lies in demonstrating that training systematically shapes the development trajectories of professional service firms under digital pressure. In particular, the findings show that training approaches focused on procedural efficiency strengthen short-term productivity but tend to weaken professional judgement as an organisational capability, increasing dependence on technological tools and favouring more standardised service models. By contrast, the integration of theoretical-conceptual training supports the development of shared interpretative frameworks, strengthens decision-making autonomy and contributes to the strategic adaptability of PSFs, encouraging the evolution of more advisory-oriented and higher value-added service models. In this sense, the study contributes to the literature by showing that training can be interpreted not merely as a competence development practice, but as an organisational lever influencing how PSFs integrate technology, knowledge and value creation, thereby refining our understanding of how training configurations shape divergent trajectories of technological adaptation in knowledge-intensive firms. More specifically, the study contributes to theory by integrating insights from the literature on PSFs, digital transformation, and organisational learning, and by explaining the mechanisms through which training shapes divergent trajectories of judgement, technological dependence, and service-model evolution.

Against this background, this study asks how different approaches to professional training influence professional judgement, technological dependence, and strategic adaptability in professional service firms undergoing digital transformation. To address this question, the study develops three theoretical propositions to guide the comparative case-based analysis. These propositions are intended not as predictive claims in a variable-based sense, but as theoretically informed lenses for tracing processual and contextual variation across cases.

First, the study proposes that predominantly operational training enhances short-term efficiency but reduces the ability to address non-standard situations (P1).

Second, the study proposes that the integration of theoretical-conceptual content, through the development of shared interpretative frameworks, is

positively associated with professional judgement and interpretative autonomy (P2).

Finally, the study proposes that theoretical-conceptual training significantly contributes to the strategic adaptability and the capacity to evolve the service model of professional service firms in contexts of digital transformation (P3).

The remainder of the article is structured as follows. The next section reviews the relevant literature and develops the theoretical foundations of the study. The subsequent sections present the methodology, empirical findings, discussion, managerial implications and conclusions. In doing so, the paper also speaks to the broader role of qualitative case-based research in generating theoretically relevant knowledge about organisational mechanisms that are context-sensitive, relational, and processual.

2. Literature Review

Literature on professional service firms (PSFs) has developed along several distinct strands that, while collectively highlighting the centrality of knowledge and human capital, offer fragmented interpretations of organizational functioning and value creation. A first strand identifies PSFs primarily as knowledge-intensive organizations where value generation depends on applying specialized expertise to complex, ambiguous problems rather than maximizing operational efficiency (Maister, 1993; Alvesson, 2004; von Nordenflycht, 2010). Parallel to this, a second research stream places professional judgement at the core of firm performance, emphasizing its role in interpreting unique contexts, managing exceptions, and sustaining institutional legitimacy (Abbott, 1988; Greenwood, Li, Prakash & Deephouse, 2005; Muzio, Brock & Suddaby, 2013). A third perspective focuses on governance and control, demonstrating that organizational coordination within these firms relies fundamentally on professional norms, ethical codes, socialization, and continuous learning rather than on traditional hierarchical or algorithmic mechanisms (Freidson, 2001; Noordegraaf, 2007; Faulconbridge & Muzio, 2017). Within this governance view, training is historically recognized as essential for reproducing professional identity, though it has rarely been analyzed as a deliberate strategic lever designed to shape collective capabilities.

More recently, a distinct fourth stream of research has emerged to examine the impacts of digital transformation on PSFs. This literature shows how automation, digital platforms, and intelligent software systems are reconfiguring the very content of professional work, thereby intensifying a structural tension between procedural standardization and discretionary judgement

(Susskind & Susskind, 2015; Hinings, Gegenhuber & Greenwood, 2018). As technology embeds an increasing share of core analytical tasks, firms face a heightened risk of service commoditisation, which simultaneously reduces the discretionary power of professionals and increases organizational dependence on external technology providers (Autor, 2015; Brynjolfsson & McAfee, 2014; Esposito De Falco, Cucari, Canuti, & Modena, 2019). This shift introduces acute cognitive risks, including selective de-skilling and automation bias, where the systematic delegation of decisions to digital systems progressively erodes a professional's capacity for independent critical thought (Parasuraman & Riley, 1997; Bainbridge, 1983; Raisch & Krakowski, 2021). Consequently, contemporary PSF environments demand the cultivation of adaptive expertise, anchored in a deep understanding of underlying theoretical principles, rather than mere routine expertise, ensuring that professionals can navigate the novel, non-standard challenges typical of digitalized environments (Hatano & Inagaki, 1986; Ericsson, 2006; Felin, Foss & Ployhart, 2015; Teece, 2018).

Despite the depth of these insights, the existing literature remains compartmentalized. While studies on digital transformation focus heavily on macro-level business models, traditional training research remains siloed around individual-level outcomes like isolated task performance or general employability (Becker, 1993; Baldwin & Ford, 1988). This fragmentation overlooks the role of professional training as an organizational mechanism of cognitive governance that actively mediates the relationship between technological integration and strategic adaptability. Specifically, there is a lack of integrated understanding regarding how different educational approaches, such as operational training targeting procedural efficiency versus conceptual training focusing on theoretical foundations, shape a firm's long-term developmental trajectory. This study addresses this exact theoretical gap. Methodologically, exploring these unfolding, context-dependent organizational mechanisms call for a comparative, case-based research design capable of tracking longitudinal dynamics rather than treating training outcomes as static, isolated metrics (Gummeson, 2017; Lindgreen *et al.*, 2021).

To conceptualize how training configurations influence professional judgement and organizational trajectories, this study frames professional training as a strategic driver of dynamic capabilities. From an organizational perspective, training pathways that privilege narrow, procedural efficiency tend to lock firms into rigid, technology-dependent configurations. Conversely, training approaches that integrate broader theoretical and conceptual frameworks provide the cognitive foundations necessary for professionals to engage critically with technology, recombine knowledge, and sustain professional autonomy under conditions of change.

To further clarify this organizational dynamic, the study introduces the concept of T-shaped knowledge and the systemic categories of “information variety” developed within the Viable Systems Approach (VSA) (Barile & Saviano, 2013; Barile, 2024; Barile *et al.*, 2021). Used here strictly as a complementary interpretive lens rather than the primary theoretical anchor, this perspective helps illustrate how operational training reinforces localized “information units” and context-dependent “schemes of synthesis” to create narrow, “I-shaped” competencies. In contrast, theoretical-conceptual training fosters higher-order “general schemes”. These broader cognitive structures mirror the horizontal bar of “T-shaped” knowledge, supplying the interpretive breadth required to transition professional service firms away from passive technological dependence and toward highly adaptive, judgement-based configurations.

3. Methodology

This study adopts a qualitative, interpretative, and theory-driven comparative multiple-case design to analyse complex organisational mechanisms such as professional judgement, interpretative autonomy, and strategic adaptability in professional service firms undergoing digital transformation (Gummeson, 2017; Lindgreen *et al.*, 2021). The design is used to examine how different training configurations generate distinct organisational mechanisms and adaptation trajectories under similar conditions of digital pressure.

Consistent with qualitative research oriented towards theory building, the aim is not statistical testing but the identification of the mechanisms through which different approaches to training influence the relationship between professionals, technology, and the service model. The study is situated within an interpretative framework, according to which organisational reality is socially constructed through practices, meanings, and shared cognitive frameworks. Professionals’ narratives therefore provide a key source of evidence for understanding how training is translated into behaviours, decisions, and organisational trajectories across cases.

In line with this approach, the research follows a logic of analytical generalisation, seeking to develop theoretical inferences that are transferable to other contexts of professional service firms characterised by high knowledge intensity, regulatory pressure and increasing digitalisation, rather than pursuing statistical generalisation of the findings. The objective, therefore, is to refine theory through comparative case-based evidence rather than to produce statistically representative results.

3.1 Identification and Selection of Relevant Literature

The theoretical framework was developed through a focused review of peer-reviewed literature on professional service firms, professional judgement, digital transformation, automation, training and organisational learning. The search was conducted mainly through Scopus and Web of Science, using combinations of keywords such as “professional service firms”, “professional judgement”, “digital transformation”, “automation”, “training”, “adaptive expertise” and “learning transfer”. The selected contributions informed the conceptual framework and the development of the empirical categories used in the case analysis.

3.2 Empirical Context and Sampling

The empirical context of this research consists of Italian accounting firms, selected as a paradigmatic case of small professional service firms operating within a highly regulated environment characterised by frequent regulatory and technological changes. This empirical context is particularly relevant from a theoretical perspective, as it combines high knowledge intensity with strong pressures towards the digitalisation of professional activities. Such a context makes the role of professional judgement especially salient and allows for a clear observation of the tensions between digital standardisation and the exercise of interpretative autonomy. Accordingly, Italian accounting firms provide a particularly suitable empirical setting for a comparative multiple-case analysis of how training configurations shape organisational responses to digital transformation.

The sample comprises 30 interviews conducted across 30 Italian accounting firms, all employing fewer than 10 staff members, selected through a purposive sampling strategy. Focusing on small and medium-sized firms allows for a clearer observation of the organisational and training dynamics that influence the relationship between professionals and technology. The selection criteria included: (i) systematic use of digital tools for the management of accounting and tax-related activities; (ii) the recent recruitment of personnel who had completed professional training programmes; and (iii) the willingness of firm owners or senior professionals to participate in in-depth interviews. Owners and senior professionals were selected as key informants because they are directly responsible for training decisions, work organisation, client relationships, and strategic positioning within small accounting firms. Each firm was treated as an organisational case, allowing the study to

compare how different training approaches were associated with variations in professional judgement, technological dependence, and service-model evolution across cases. The sampling logic was therefore not aimed at representativeness, but at selecting analytically comparable cases exposed to similar digital pressures while preserving sufficient variation in training configurations and organisational responses.

The main characteristics of the sample are presented in Table 1, which summarises information relating to firm size, the role of the interviewed professionals, their professional experience, and the level of digitalisation of the organisations analysed. These features support the analytical comparability of the cases while preserving sufficient empirical variation to explore different organisational trajectories.

Table 1: Sample Characteristics

Firm	No. of Employees	Interviewee Role	Experience	Level of Digitalisation
S1	3	Owner	12 years	High
S2	5	Owner	15 years	Medium
S3	2	Partner	20 years	High
S4	6	Owner	22 years	Medium
S5	4	Owner	13 years	High
S6	7	Partner	22 years	High
S7	2	Owner	10 years	Medium
S8	4	Partner	18 years	High
S9	1	Owner	6 years	Medium
S10	3	Partner	20 years	High
S11	3	Owner	21 years	High
S12	4	Owner	20 years	Medium
S13	2	Partner	16 years	High
S14	6	Owner	22 years	High
S15	4	Owner	14 years	Medium
S16	6	Partner	23 years	High
S17	3	Owner	13 years	Medium
S18	5	Partner	19 years	High
S19	2	Owner	12 years	Medium
S20	4	Partner	21 years	High
S21	3	Owner	23 years	High
S22	5	Owner	14 years	Medium
S23	2	Owner	5 years	Medium
S24	5	Owner	23 years	High
S25	4	Owner	13 years	Medium
S26	6	Partner	20 years	High
S27	3	Owner	21 years	Medium
S28	5	Partner	14 years	High
S29	1	Owner	4 years	Medium
S30	4	Owner	12 years	High

Source: authors' own elaboration.

The final sample was considered adequate to ensure both interpretative depth and empirical diversity. Consistent with a theory-driven qualitative approach, data collection was not predetermined *ex ante* in numerical terms but continued until theoretical saturation was reached, understood as the point at which additional interviews no longer generated substantially new evidence with respect to the analytical constructs and theoretical mechanisms under investigation. The achievement of saturation was assessed through the progressive comparison of the cases analysed and the stabilisation of the emerging interpretative categories. After approximately the twenty-fourth interview, no substantially new categories emerged. This stabilisation concerned all three propositions rather than only the general contrast between operational and theoretical-conceptual training. The remaining interviews were used to confirm, refine and test the robustness of the interpretative patterns identified. This process made it possible to progressively verify the recurrence of the identified empirical patterns and to strengthen the interpretative robustness of the analytical categories, thereby reinforcing the credibility of the comparative case-based inferences developed in the study.

3.3 Data Collection and Interview Protocol

Data were collected through semi-structured interviews conducted with firm owners and senior professionals from the selected accounting firms. These organisational actors were chosen because they are directly involved in decision-making processes related to the management of professional work, staff training, and the adoption of digital technologies. This method was selected for its ability to combine comparability across cases with flexibility in exploring the underlying organisational processes within and across the selected organisational cases.

The interview protocol was explicitly designed in a theory-driven manner, with the aim of observing the causal mechanisms underlying the research propositions (P1-P3). Although the interview protocol was theory-informed, respondents were encouraged to discuss unexpected experiences, exceptions and contradictory situations. During coding, particular attention was paid to evidence that challenged the initial propositions or suggested mixed configurations. In this sense, negative and deviant cases were actively considered during the analytical process. In particular, the questions were formulated to explore concrete operational situations, in order to reduce the risk of abstract or purely evaluative responses. The questions were not intended to collect general opinions about training but rather to reconstruct specific situations, operational decisions, and organisational practices, thereby enabling an in-

depth understanding of how training configurations were translated into case-specific organisational trajectories.

Table 2 summarises the structure of the interview protocol, highlighting the relationship between thematic areas, the mechanisms analysed, and the research propositions.

Table 2: Structure of the Interview Protocol

Thematic Area	Questions	Mechanism Analysed	Proposition
Initial integration and early productivity	“How long did it take for new staff to become autonomous in standard tasks?”	Short-term efficiency	P1
Management of non-standard situations	“How are regulatory exceptions or cases not covered by procedures addressed?”	Adaptive capacity and interpretation	P1, P2
Professional judgement	“To what extent are employees able to explain and justify their decisions to clients?”	Interpretative autonomy and judgement	P2
Relationship with technology	“How often are decisions delegated to software without critical verification?”	Technological dependence / automation bias	P2
Strategic adaptability	“In recent years, has the firm developed new higher value-added services?”	Evolution of the service model	P3

Source: authors’ own elaboration.

3.4 Data Analysis and Validity

The interviews were recorded, fully transcribed and analysed using thematic analysis, following an iterative process structured in three phases: open coding, aggregation of codes into theoretically relevant categories, and systematic comparison across cases. During the open coding phase, recurring themes emerging from the interviewees’ narratives were identified and subsequently grouped into interpretative categories consistent with the theoretical constructs of the study. For example, statements referring to reliance on software outputs were coded as technological dependence; references to explaining decisions to clients were coded as professional judgement; and mentions of advisory, data interpretation or managerial support services were

coded as service-model evolution. These first-order codes were then aggregated into broader analytical categories related to operational training, theoretical-conceptual training, interpretative autonomy and strategic adaptability. These categories were not imposed deductively from the outset, but progressively refined through iterative movement between empirical material, within-case interpretation, cross-case comparison, and the evolving theoretical framework. The analysis was conducted in continuous dialogue with the theoretical framework, applying a pattern-matching logic to assess the consistency between the empirical evidence and the formulated propositions. The analytical process combined within-case interpretation with cross-case comparison to identify recurring mechanisms and meaningful variations across organisational contexts. This strategy also made it possible to reconstruct how training practices were associated with different trajectories of judgement formation, technological dependence, and strategic adaptation. As the analysis was conducted by a single researcher, particular attention was devoted to reflexivity and to the iterative comparison between empirical evidence and theoretical constructs to minimise potential interpretative bias. Given the interpretative nature of the study, reflexivity formed an integral part of the analytical process, with continuous movement between emerging categories, case-specific evidence, and the theoretical framework. This iterative process enabled the progressive refinement of the analytical categories and the verification of the interpretative robustness of the emerging patterns.

The reliability and internal validity of the study were strengthened through a consistent interview protocol, cross-case comparison, and transparency in the analytical procedures. Systematic comparison across cases made it possible to identify both recurring patterns and meaningful variations, thereby reinforcing the credibility of the theoretical inferences. Particular attention was also devoted to making explicit the links between analytical categories, empirical evidence, and theoretical interpretation, as well as the role of the researcher in the construction of meaning.

4. Results

The comparative analysis of the interviews conducted across the 30 accounting firms suggests the presence of recurring empirical patterns and systematic differences associated with different approaches to professional training. Although the patterns identified were recurrent, the cases did not display perfectly uniform trajectories. Alongside firms mainly characterised by operational training and firms more clearly oriented towards theoretical-conceptual training, several cases showed hybrid configurations combining procedural

training with mentoring, supervision or informal conceptual learning. Indicatively, about one third of the cases were predominantly operational, one third more clearly theoretical-conceptual, and the remaining cases hybrid; this classification is interpretative rather than statistical. Cross-case comparison revealed distinct organisational configurations in the ways professionals interpret the relationship between procedures, technology, and professional judgement, not as static differences but as trajectories unfolding over time.

Consistent with the research design, the results are organised around the three theoretical propositions (P1-P3). The analytical emphasis is not on isolated findings within single cases, but on how systematic comparison makes visible recurring mechanisms and meaningful differences in organisational trajectories. In particular, the analysis traces how different training configurations shape initial productivity, judgement formation, technological dependence, and strategic adaptability across cases.

4.1 Operational Training, Initial Productivity and Structural Limitations (P1)

Consistent with Proposition P1, the empirical evidence consistently shows that training pathways predominantly oriented towards operational skills are associated with higher levels of short-term efficiency. In almost all the firms analysed, professionals coming from training programmes strongly focused on learning procedures and using management software rapidly reach a level of autonomy sufficient to perform standardised tasks, such as recording transactions, managing recurring compliance activities and using the basic functionalities of digital systems.

This pattern emerges particularly clearly during the first months of professional integration, when familiarity with operational procedures significantly reduces learning time. This aspect is evaluated positively especially in smaller firms, where operational pressure and limited resources make the rapid integration of new staff particularly important. As one interviewee observed, “if the employee is familiar with the software and the standard procedures, within a few weeks they are already able to manage most routine compliance tasks independently” (Interview 7, firm owner). Across cases, this first phase is generally perceived as beneficial, although some firms describe it more explicitly as a short-term operational advantage than as a basis for broader professional development.

However, the analysis also reveals recurring structural limitations associated with this type of training. In particular, when interviewees describe non-standard situations-such as regulatory exceptions, complex cases or sudden

procedural changes following legislative reforms-greater difficulties emerge among professionals trained exclusively in a procedural manner. In such circumstances, these professionals tend to search for solutions within the software or rely on predefined procedures, displaying limited adaptability when immediate answers are not available. Several interviewees emphasised that, in the absence of explicit guidance from the system, employees with a predominantly procedural orientation tend to suspend operational action while waiting for further instructions. As one professional noted, “when a case does not fit within the software procedures, many younger employees prefer to stop and ask for confirmation, because they do not yet have the tools to interpret the situation independently” (Interview 18, partner). By contrast, a smaller number of firms reported that these limitations could be partially mitigated when junior professionals worked in close interaction with senior colleagues, although this compensation remained heavily dependent on informal support. In these situations, reliance on the support of senior professionals becomes particularly frequent. This pattern suggests the existence of an empirically observable trade-off between short-term efficiency and cognitive flexibility, particularly when operational training is not complemented by mentoring, supervision or broader conceptual learning. Over time, what initially appears as efficient integration tends to consolidate into a narrower interpretative repertoire, making professionals more dependent on software logics and less able to deal autonomously with novel situations. Although there are cases in which on-the-job experience partially compensates for these limitations, such situations appear less frequent and strongly dependent on the informal support of senior professionals.

4.2 Theoretical-Conceptual Training and Professional Judgement (P2)

The results relating to Proposition P2 reveal systematic differences between professionals who have followed training pathways integrating theoretical-conceptual content and those trained predominantly through operational approaches. In particular, in cases where training includes an explicit understanding of the accounting and tax principles underlying procedures, interviewees report a greater capacity to interpret operations, connect operational activities to the relevant regulatory framework, and critically assess the solutions proposed by software systems. This interpretative capacity emerges not only in the management of more complex activities but also in a greater awareness of the regulatory and decision-making implications of everyday operations. It also becomes evident in the handling of anomalies and exceptions, as well as in the greater confidence shown when making decisions that are not entirely

guided by the system. As one interviewee noted, “when employees understand the accounting or tax principle behind a procedure, they are also able to question the software output if something does not seem right” (Interview 12, partner). Across cases, this pattern suggests that theoretical-conceptual training gradually builds interpretative resources shaping how professionals approach both routine and exceptional tasks.

A particularly relevant aspect concerns the relationship with clients. Interviewees describe professionals with a stronger theoretical foundation as being more autonomous in their interactions with clients, able to explain and justify the decisions adopted and to translate technical information into understandable arguments. In such cases, the professional is perceived not merely as an executor of compliance tasks but as an interlocutor capable of interpreting the client’s specific context. By contrast, among purely operational profiles, the explanation of decisions tends to be mediated through reference to software outputs or standard procedures, resulting in a more limited capacity for independent reasoning. This contrast suggests that theoretical-conceptual training contributes significantly to the development of professional judgement and interpretative autonomy, thereby offering strong empirical support for Proposition P2. The comparative evidence also indicates that this effect is cumulative rather than immediate, as professionals progressively become more confident in interpreting exceptions, justifying decisions, and engaging in less standardised forms of client interaction. At the same time, the analysis shows that this effect is not automatic but depends on the effective integration of theory and practice within the training pathway.

4.3 Training and the Relationship with Technology: Operational Dependence and Decision-Making Autonomy

A cross-cutting result that consistently emerged from the analysis concerns the relationship between training and the use of technology. In cases where training is strongly oriented towards learning digital tools, interviewees report a greater tendency to delegate a significant share of operational and interpretative decisions to software systems. This phenomenon becomes particularly evident when systems incorporate complex decision-making logics, reducing the transparency of the process and making it more difficult to understand the rationale behind specific operations. In such situations, the software tends to become an implicit reference point for defining operational choices. Consequently, technology is not perceived merely as a support tool but rather as an implicit guide to professional action. Across cases, this dependence does not appear as an immediate consequence of digitalisation

alone, but as a progressive organisational outcome reinforced by training paths that privilege procedural compliance over interpretative understanding.

By contrast, in cases where training includes a solid theoretical foundation, professionals display a more critical attitude towards digital tools. They tend to use software as analytical support, verifying outputs, intervening in the presence of anomalies and reinterpreting procedures according to the specificities of the case. This reflective approach allows professionals to maintain greater control over the decision-making process. This pattern suggests that theoretical training plays a significant role in mitigating operational dependence on technology and in preserving decision-making autonomy, thereby indirectly strengthening professional judgement. It also helps clarify the mechanism through which training configurations mediate the relationship between digital tools and professional autonomy across cases. In this respect, the comparative analysis highlights a processual divergence: while some firms move towards increasing reliance on software-mediated judgement, others develop a more reflexive configuration in which technology remains embedded within, rather than substituted for, professional interpretation.

4.4 Theoretical-Conceptual Training and the Strategic Adaptability of Firms (P3)

Consistent with Proposition P3, the findings indicate that the presence of professionals with a broader theoretical-conceptual training background is associated with greater strategic adaptability within firms. Interviewees report that firms which place greater emphasis on this type of training appear better equipped to address regulatory and technological changes, adapting procedures and working models in a less reactive and more deliberate manner. In such contexts, regulatory and technological changes are interpreted not only as operational constraints but also as opportunities to redefine professional practices. Moreover, the introduction of new technologies is not described as a simple substitution of existing practices but rather as an opportunity to rethink both the organisation of work and the range of services offered. As one interviewee observed, “when employees have a solid theoretical foundation, they are better able to understand what truly changes with new regulations or new digital tools, and this allows us to reorganise our work rather than simply adapting to it” (Interview 21, firm owner). This suggests that the effects of training extend beyond immediate task performance and may contribute to the firm’s capacity to reinterpret change and reconfigure its service model, in interaction with senior expertise, client demand, digital tool use and broader strategic orientation.

In particular, a greater propensity emerges towards the development of higher value-added services, such as strategic consultancy, support for managerial decision-making and data interpretation for clients, as well as a gradual shift from routine compliance activities towards more advisory-oriented forms of client support. This capability is attributed to the presence of professionals able to integrate technical competences with interpretative skills, moving beyond purely procedural execution. Several interviewees emphasised that this integration enables firms to position themselves more distinctively in relation to their clients. By contrast, in firms that rely predominantly on personnel trained in an operational manner, service innovation appears more limited and strongly constrained by the functionalities offered by software systems. These findings provide coherent empirical support for Proposition P3, showing how theoretical-conceptual training may act as an enabling condition for strategic adaptability and service-model evolution in professional service firms. The cross-case comparison suggests that stronger interpretative foundations enable firms to move more gradually from reactive compliance to more proactive, advisory-oriented configurations.

4.5 Summary of the Results

Overall, the findings indicate that training systematically shapes the relationship between professionals, technology, and the service model within accounting firms. Predominantly operational training supports short-term efficiency but tends to reinforce technological dependence and limit the capacity to address non-standard situations. By contrast, theoretical-conceptual training supports professional judgement, reduces automatic delegation to software systems, and contributes to strategic adaptability. These differences reflect broader organisational trajectories and provide the empirical basis for the theoretical discussion that follows.

5. Discussion

5.1 Interpretation of the Results and the Overall Logic of the Contribution

This section interprets the empirical findings in light of the theoretical framework and clarifies their contribution to the literature on professional service firms, digital transformation, and professional training.

Overall, the evidence provides consistent support for Propositions P1-P3

and supports an integrated interpretation of training as a mechanism through which firms mediate the relationship between professionals, technology, and strategic development trajectories. More specifically, the study refines theory by showing how training shapes the cognitive foundations of judgement, technological dependence, and strategic adaptability across different organisational contexts. The comparative analysis also shows whether professional work remains tied to procedural execution or develops broader interpretative and adaptive capabilities. The main contribution of the study lies in showing that training influences not only individual competences but also the organisational conditions under which technology is interpreted and used. Training therefore emerges as an organisational lever through which PSFs govern the balance between procedural efficiency and interpretative capacity under digital pressure. The contribution of the study therefore lies in showing that cognitive governance is the mechanism through which PSFs shape the cognitive conditions under which professionals interpret technology, preserve judgement and develop adaptive responses to digital transformation.

5.2 Short-Term Efficiency, Learning and Professional Rigidity (P1)

With reference to Proposition P1, the results confirm a structural trade-off between short-term efficiency and the ability to address non-standard situations. Predominantly operational training responds effectively to pressures for immediate productivity but tends to produce competences anchored to procedures and the logics embedded in digital systems. This finding contributes to the debate on routine versus adaptive expertise by showing how training oriented towards procedural execution may stabilise efficient yet inflexible competences. The comparative evidence further suggests that this rigidity is progressive rather than immediate: training initially accelerates integration, but over time may narrow the interpretative repertoire available when professionals encounter novelty, ambiguity, or regulatory change.

A key contribution of this study lies in clarifying that such rigidities do not arise simply from automation itself, but from the way in which automation interacts with training practices focused on procedural execution. In other words, technology does not automatically determine either the reduction or the strengthening of professional competences; rather, it operates in combination with specific organisational choices relating to training and the management of professional work. In the absence of an understanding of the underlying principles, the reduction of routine activities may translate into a loss of opportunities for implicit learning, limiting professionals' ability to recognise exceptions, interpret anomalies and adapt solutions to non-

standard contexts. In this sense, the study contributes to explaining why automation does not automatically lead to an upgrading of professional work but may instead reinforce trajectories of technological dependence. This suggests that the developmental trajectories of professional service firms under digital pressure depend not only on the adoption of technologies, but also on how organisations support the development of interpretative competences.

5.3 Automation, Training and Moving Beyond Technological Determinism

The findings help move beyond deterministic interpretations of digital transformation by showing that technology does not automatically weaken or strengthen professional judgement; its effects are mediated by training and organisational choices. In firms characterised by predominantly operational training, automation tends to amplify automation bias and implicit delegation to software systems. By contrast, where training includes a theoretical-conceptual dimension, technology is used as a support for interpretation rather than as a substitute for judgement. This shifts attention from technology itself to the organisational conditions governing its impact and highlights training as a key lever for avoiding trajectories of standardisation and commoditisation in PSFs.

5.4 Theoretical-Conceptual Training and the Development of Professional Judgement (P2)

The results relating to Proposition P2 provide a significant contribution to the literature on professional service firms by showing that professional judgement cannot be considered an intrinsic resource, or one automatically guaranteed by membership in a regulated profession. Rather, judgement emerges as the outcome of specific training practices that enable professionals to develop interpretative frameworks through which they assign meaning to information, evaluate alternatives and justify decisions. In this sense, the study adds to existing work on PSFs by showing that judgement is not merely preserved through professional socialisation in general but can be actively strengthened or weakened through specific organisational choices about the content and orientation of training.

The integration of theoretical-conceptual content into training does more than increase abstract knowledge: it connects principles, context, and professional action. This connection is crucial both for addressing non-standard situations and for maintaining an autonomous and credible dialogue with

clients. The study thus shows that training contributes to the reproduction of professional judgement over time rather than merely supporting the acquisition of technical competences. Comparative evidence further suggests that interpretative autonomy is cumulative rather than immediate, emerging through repeated exposure to training practices that connect procedural execution with conceptual understanding and contextual reasoning.

5.5 Professional Judgement as an Organisational Capability

One of the central theoretical contributions of this study lies in reinterpreting professional judgement as an organisational capability rather than merely an individual competence. The findings suggest that theoretical-conceptual training helps build a shared cognitive base that facilitates coordination, collective learning, and interpretative coherence within PSFs. From this perspective, professional judgement emerges from the interaction between training practices, shared languages, and organisational routines, and can be understood as the organisational manifestation of more T-shaped knowledge structures. In this sense, training supports the conditions under which interpretation, decision-making, and adaptation become possible. In this way, the study connects the literature on PSFs with that on dynamic capabilities, showing how training supports the renewal of organisational capabilities in response to technological and institutional change.

5.6 Strategic Adaptability and Service Model Development Trajectories (P3)

With reference to Proposition P3, the findings show that theoretical-conceptual training is associated with greater strategic adaptability and with a stronger capacity to evolve the service model towards higher value-added activities. PSFs that invest in this type of training appear better equipped to develop advisory and interpretative services, thereby avoiding competition based solely on efficiency and price. This adaptability does not emerge as a single outcome, but as a trajectory: over time, stronger interpretative foundations appear to enable firms to move from reactive procedural compliance towards more proactive and differentiated service configurations.

Some firms combine high operational efficiency with adaptive capacity. This pattern is consistent with the distinction between more procedural and more adaptive knowledge structures. Predominantly operational training appears to reinforce lower layers of the knowledge structure, leading to

efficient but context-dependent competences, whereas training pathways integrating theoretical and conceptual elements contribute to the development of general schemes that enable abstraction and recombination across contexts. In this sense, professional judgement and strategic adaptability can be understood as outcomes of stronger interpretative and adaptive capabilities. However, such configurations depend heavily on the presence of senior professionals with a solid theoretical foundation, suggesting that adaptability requires intentional training investments.

5.7 Interpretative Boundaries and Transferability of the Results

Like any qualitative study, the present research presents limitations that should be acknowledged. The findings are based on a specific national context and on a limited number of cases, which does not allow for statistical generalisation. A further limitation is that junior professionals and employees were not directly interviewed, which future research could address through multi-informant designs. However, the objective of the study is analytical generalisation through the identification of theoretical mechanisms that are plausibly relevant in other professional service firm contexts - such as law firms, consulting organisations and engineering services - characterised by high knowledge intensity, regulatory pressure and increasing digitalisation. Technological dependence may also be influenced by software design, workload pressure, regulatory complexity, firm size and client expectations. The study therefore interprets training as one relevant organisational mechanism, rather than as the sole determinant of technological dependence.

In this sense, the context of accounting firms functions as a revealing case that allows the tensions between digital standardisation and professional judgement to be observed with particular clarity. The findings therefore provide a solid conceptual basis for future comparative and longitudinal research aimed at exploring how different training configurations influence the development trajectories of PSFs across diverse institutional and technological contexts. From this perspective, the value of the study lies not in statistical representativeness but in the transferability of the mechanisms identified through comparative case-based inquiry.

6. Managerial Implications

The findings suggest that training in professional service firms should be regarded not only as a lever for operational efficiency, but as a strategic

choice with medium- to long-term implications. In small and medium-sized accounting firms, evaluating training only in terms of initial productivity risks concealing longer-term costs, including reduced cognitive flexibility, greater technological dependence, and a weaker capacity to address non-standard situations. By contrast, theoretical-conceptual training supports professional judgement, interpretative autonomy, and the evolution of the service model towards higher value-added activities.

The managerial implication is therefore straightforward: PSFs should not evaluate training only in terms of rapid productivity gains, but also in terms of its capacity to preserve judgement, autonomy and adaptability under digital pressure. Managers should therefore combine software-based and procedural training with mentoring, reflective learning, and theoretical-conceptual content capable of strengthening professionals' interpretative autonomy.

7. Conclusions, Limitations and Future Research Agenda

This study examines the role of professional training in governing the digital transformation of accounting firms as knowledge-intensive professional service firms. Through a qualitative comparative multiple-case design, it shows that training is not merely a technical instrument for updating, but a strategic lever shaping professional judgement, interpretative autonomy, and organisational adaptability. More specifically, the study conceptualises training as a mechanism of cognitive governance through which firms shape how professionals interpret technology and develop organisational responses ranging from more procedural and rigid configurations to more T-shaped and adaptive ones.

While acknowledging the limitations associated with the specific national context and the qualitative nature of the sample, these constraints do not weaken the theoretical contribution but instead clearly delineate its scope, opening the way for a structured future research agenda. Subsequent studies could extend the analysis to international contexts and to different types of professional service firms, adopt comparative or longitudinal research designs to observe the evolution of professional capabilities over time, and integrate quantitative approaches to assess the diffusion and intensity of the mechanisms identified. Further research could also examine in greater depth the role of specific training practices-such as mentoring, reflective learning and continuous professional development-in supporting the development of adaptive expertise and in mitigating the risks of de-skilling associated with digitalisation. Overall, the study invites scholars and practitioners to reconsider professional training not as a tactical response to immediate labour market demands, but as a central component of how professional service firms

preserve judgement, adaptability and competitive differentiation in the digital era. In this respect, the study responds to the tension between measurability and theoretical significance by showing that some of the most consequential organisational dynamics associated with digital transformation-such as the reproduction of judgement, the emergence of technological dependence, and the evolution of service models-can only be fully understood when analysed as situated and evolving processes rather than as isolated measurable outcomes.

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Industry 5.0 in Waste Management: Uncovering the Dynamic Capabilities Behind the Transition

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Abstract

Industry 5.0 represents a transformative paradigm that addresses disruptive megatrends by calling for a human-centred approach and sustainability orientation. Despite growing academic interest, little is known about how organisations are transitioning towards this innovative strategic posture, particularly in the service businesses. The study addresses this gap by investigating the dynamic capabilities that waste management organisations must activate to undertake the aforementioned transition. Drawing on the Dynamic Capabilities Theory and a qualitative multiple-case study conducted on three Italian waste management firms, data were collected through 18 semi-structured interviews and archival sources and analysed by using the Gioia methodology. The results reveal three aggregate dimensions of capability such as: Waste Ecosystem Scanning Capability; People-Technology Orchestration Capability; Smart Waste Cycle Reconfiguration Capability. All together, these capabilities constitute an integrated architecture through which organisations perceive environmental complexity, orchestrate technological and human resources, and reconfigure their strategic, operational, and relational processes.

Keywords: Industry 5.0; Dynamic Capabilities; Waste Management; Sustainability; Human-centricity; Gioia Methodology.

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Sommario

L'Industria 5.0 rappresenta un paradigma trasformativo che affronta i megatrend dirompenti promuovendo un approccio centrato sull'essere umano e orientato alla sostenibilità. Nonostante il crescente interesse accademico, si sa ancora poco su come le organizzazioni stiano effettuando la transizione verso questa innovativa postura strategica, in particolare nel settore dei servizi. Questo studio colma tale lacuna indagando le capacità dinamiche che le organizzazioni operanti nella gestione dei rifiuti devono attivare per intraprendere la suddetta transizione. Basandosi sulla Dynamic Capabilities Theory e su uno studio qualitativo multi-caso condotto in tre imprese italiane di gestione dei rifiuti, i dati sono stati raccolti attraverso 18 interviste semi-strutturate e fonti documentali, e analizzati mediante la Gioia Methodology. I risultati evidenziano tre dimensioni aggregate di capacità: Waste Ecosystem Scanning Capability, People-Technology Orchestration Capability, Smart Waste Cycle Reconfiguration Capability. Nel loro insieme, tali capacità costituiscono un'architettura integrata attraverso la quale le organizzazioni percepiscono la complessità ambientale, orchestrano risorse tecnologiche e umane e riconfigurano i propri processi strategici, operativi e relazionali.

Parole chiave: Industry 5.0; Dynamic Capabilities; Waste Management; Sustainability; Human-centricity; Gioia Methodology.

1. Introduction

The last decades have been characterized by transformative megatrends that have impacted and revolutionized the business landscape (Ciasullo *et al.*, 2024; Naughtin *et al.*, 2024). High economic instability, social disruptions, environmental concerns, technological innovations and digitalization drove businesses' profound transformations, by calling for a new evolutionary paradigm able to face the actual unstopping and vulnerable socio-economic context. At this regard, Industry 5.0 has arisen as a potential strategic approach that balances human needs, environmental and social issues, by also giving relevance to businesses' survival in the competitive environment. It has been defined for the first time by the European Commission (EC) in 2021 as the power of industry to achieve societal goals beyond jobs and growth, to become a resilient provider of prosperity, by making production respect natural environment boundaries and placing the wellbeing of workers at the center of the production process (Breque *et al.*, 2021). Moreover, unlike Industry 4.0, Industry 5.0 emerges as the combination of advanced technologies for addressing social and environmental issues. In other words, it calls for the reshape of firms' directionality towards a sustainable technological transformation, for which the objective is not only to achieve efficiency and optimi-

zation, but also the creation of a human-centered, sustainable, and resilient business value (Montera *et al.*, 2026; Renda *et al.*, 2021). In this regard, Destouet *et al.* (2023) discussed how human-robot collaboration assumes a key role in improving work efficacy and worker well-being, reducing errors, and increasing production flexibility; Ciasullo and Ferrara (2025) highlighted the implications of Industry 5.0 for humans and social and environmental aspects; Ghobakhloo *et al.* (2022) depicted the opportunity to encourage recycling, remanufacturing, and resource reutilization.

Despite the growing scholarly interest in Industry 5.0, the existing body of managerial literature, as highlighted by Ciasullo and Ferrara (2025), has predominantly investigated this paradigm in the manufacturing industry, where the integration of humans together with the environmental and social values and advanced technologies is immediately observable (Ghobakhloo *et al.*, 2024a). Consequently, a limited attention has been paid to the service industry. Yet, the growing relevance of personalized services, human-centric approaches, and sustainable practices increasingly call for a deeper understanding of how Industry 5.0 principles can be meaningfully transposed into service contexts.

Emerging contributions have begun to explore this trajectory in service business such as hospitality (Hussain *et al.*, 2023), healthcare (Gomathi *et al.*, 2023), and education (Hashim *et al.*, 2024), examining how service delivery is reshaped in terms of customer satisfaction, patient-centricity, student well-being, sustainable tourism, and healthcare resilience. Among service industries, the waste management stands out as a particularly compelling yet underexplored domain for the application of Industry 5.0. Indeed, this service context suffers from the upcoming mega trends which have brought a significant rise in waste generation. Particularly, the combination of rapid population expansion, accelerated industrial development, and increasing urbanization has contributed to increasing annual municipal solid waste production in urban areas worldwide (Das *et al.*, 2019). Municipal solid waste generation is predicted to grow from 2.1 billion tonnes in 2023 to 3.8 billion tonnes by 2050¹. The UN Environmental Programme outlined that waste has been of the main drivers in contributing to worldwide environmental urgencies, since it played a role in climate change, biodiversity loss and pollution. More in-depth, the Global Waste Management Outlook 2024 pointed out that transporting, processing and disposing of waste generate CO₂ and other greenhouse gases and airborne pollutants that contrib-

¹ Global Waste Management Outlook 2024 by UN Environmental Programme (UNEP) available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/44939/global_waste_management_outlook_2024.pdf?sequence=3

ute to climate change and can have significant negative effects on human health and the environment. Against this backdrop, Industry 5.0 emerges as a strategic opportunity for the waste management sector, since the integration of advanced technologies with sustainability-oriented and human-centric practices may offer a viable pathway for addressing the sector's most pressing operational and environmental challenges (Zoumpoulis *et al.*, 2024). However, academic inquiry at the intersection of Industry 5.0 and waste management remains nascent, with only a limited number of contributions beginning to explore this research area (Mesjasz-Lech, 2023; Govindaraj *et al.*, 2024).

Beyond the sectoral gap, a deeper theoretical lacuna emerges from the existing literature. Current studies have predominantly focused on describing the outcomes of Industry 5.0 (Ciasullo and Ferrara, 2025; Ghobakhloo *et al.*, 2023) while neglecting the managerial processes through which firms actually transition towards this paradigm. In particular, scant scholarly attention has been devoted to understanding which capabilities firms need to activate to pursue an Industry 5.0 trajectory, and how these capabilities are mobilized, combined, and embedded within organizational routines and processes. This gap becomes especially pronounced in the service industry, where the interplay between human actors, sustainability relevance, and digital technologies assumes a configuration that differs substantially from the manufacturing context.

Against this backdrop, this study aims to uncover the capabilities that must be activated to actualize Industry 5.0 in the waste management sector. Theoretically, the study draws on the Dynamic Capabilities approach (Teece *et al.*, 1997; Teece, 2007), since it offers a robust framework for examining how organizations sense environmental opportunities, seize relevant resources, and reconfigure business processes in response to changing conditions. Methodologically, a qualitative approach through a multiple case study (Yin, 2018) is adopted by involving three Italian waste management firms. Data analysis follows the Gioia methodology (Gioia *et al.*, 2013), enabling an inductive theory-building approach capable of capturing the organizational complexity and interpretive richness inherent in the phenomenon under investigation.

The paper is structured as follows. After the introduction, Section 2 analyzes the study's theoretical background; Section 3 depicts the research design and the implemented methodology for the empirical analysis. Follow Sections 4 and 5, in which the achieved results are presented and discussed; and theoretical and practical implications are considered. Lastly, in Section 6, conclusions, and possible future research are outlined.

2. Literature review and theoretical background

2.1 Industry 5.0: a look into the waste management sector

The conceptualization of Industry 5.0 has generated considerable academic debate, structured around two main interpretive positions. A first strand frames it as an incremental evolution of Industry 4.0: building on its technological foundations, Industry 5.0 expands the scope of industrial transformation toward social and environmental goals (Xu *et al.*, 2021; Ghobakhloo *et al.*, 2022). A second strand, by contrast, emphasizes the technological character of the paradigm, pointing to human-robot symbiosis (Nahavandi, 2019; Maddikunta *et al.*, 2022), the emergence of symbiotic factories (Longo *et al.*, 2020), and highlighting the high sophisticated technologies coming with Industry 5.0. Rather than treating these positions as mutually exclusive, the present study, by adopting an integrative view, conceptualize Industry 5.0 as an *incremental revolution* that inherits from Industry 4.0 advanced and digitized technologies while reorienting them toward human-centred, environmentally and socially sustainable value creation. In other words, going beyond the technocentric nature of Industry 4.0, the latter paradigm emphasizes a human-centric approach that tends towards a logic of sustainability and organizational resilience, for which digital technologies represent tools that facilitate the achievement of organizational objectives (Ciasullo *et al.*, 2023).

In the waste management sector, despite the number of studies is limited, Industry 5.0 has been mostly conceptualized according to the technological revolutionary approach, thereby adopting an engineering perspective and focusing on the enabling role of digital technologies, such as IoT, AI, smart bins, blockchain, and robotics, in optimizing waste management processes.

In this regard, recent contributions have predominantly emphasized the infrastructural and algorithmic dimensions of this transition. Zoumpoulis *et al.* (2024) and Govindaraj *et al.* (2024) converge in situating smart bin technology as a foundational innovation, but differ in scope. The former proposes a novel concept design that combines advanced sensing, automation, and data analytics to address the limitations of existing commercial solutions and enhance efficiency in technology-driven urban waste management; the latter adopts a broader evolutionary perspective, tracing the trajectory of urban waste management from rudimentary disposal methods to sophisticated, sustainability-oriented circular systems through the lens of smart bin innovation, and demonstrating how Industry 5.0 principles can be operationalized at the level of waste collection infrastructure. Anitha (2025)

extends this technical trajectory further, integrating edge-AI smart bins, digital twin simulation, and graph-theoretic routing into a next-generation waste ecosystem, while Chauhan *et al.* (2026) similarly emphasize the operational integration of AI, machine learning, and IoT for real-time monitoring and automated classification, illustrating their direct relevance for AI-enabled operational systems in European urban environments.

Although these contributions recognize the relevance of Industry 5.0 to waste sector, the engineering-oriented perspective mostly focuses on the technical facets such as infrastructure and related design by stressing the specific outputs linked to the implementation of digital technologies. In other words, these studies operationalize Industry 5.0 at the level of technical systems and process outcomes, with no reflection about how organisations transition towards Industry 5.0 in terms of resources to mobilize, strategic choices to make, and internal transformations to undergo. Understanding it exclusively through a technological lens risks reducing a complex and transformative phenomenon to a set of tools, thereby obscuring the strategic, operative and tactical business processes that give meaning to those tools. Therefore, according to the incremental revolution view proposed, the Industry 5.0 paradigm requires a strategic posture able to sustain technologies with social and environmental concerns along with a human-centric approach, then calling for a deep analysis to understand how to integrate and combine these elements. More in depth, it is necessary to understand how organizations strategically manage the transition to Industry 5.0, uncovering both the resources that must be mobilized and the capabilities that must be activated to make such a transition possible.

2.2 A Dynamic Capability Approach

To meet the objective of the study, it relies on the Dynamic Capabilities Theory (DC). This theoretical approach explains how firms sustain innovative business value in complex and rapidly changing environments (Teece *et al.*, 1997). Dynamic capabilities are defined as the ability of an organization to integrate, build, and reconfigure internal and external competencies in response to shifting environmental conditions (Teece, 2007), and have been more recently extended to encompass the capacity to ensure robustness and recoverability from disruptions (Teece, 2023). Unlike ordinary capabilities, which concern the efficient execution of existing routines, dynamic capabilities are inherently future-oriented: they enable firms to anticipate strategic needs, identify emerging opportunities, and proactively reshape their resource base in alignment with long-term organizational goals.

According to the seminal literature (Teece, 2007), DC provides three interrelated capabilities: sensing, seizing, reconfiguring. Sensing refers to the continuous scanning, monitoring, and interpretation of signals from the external environment, that enable proactive anticipation and informed decision-making (Teece, 2017). Seizing encompasses the rapid mobilization and allocation of resources, in response to the opportunities identified through sensing, implying both decisional agility and the capacity to configure assets, partnerships, and organizational structures in ways that translate opportunity recognition into value creation (Teece, 2007). Reconfiguring involves the adaptive transformation of the firm's operational and organizational processes, ensuring long-term competitiveness by enabling firms to evolve its routines, cultural orientations, in response to both internal learning and external disruption (Teece, 2023). All together those capabilities set up a dynamic, iterative cycle through which firms not only respond to environmental change but actively shape their corporate capacity to do so overtime (Teece, 2017).

Since Industry 5.0 represents a complex transition, which simultaneously demands technological investment, human capital development, and environmental and social sensitivity, DC fits with the aim to understand the resources and the capabilities that are mobilized to make this transition real. Indeed, in the stream of literature related to Industry 5.0, DC has been already adopted in terms of useful theoretical perspective. For example, Mohammed *et al.* (2025) adopted it to identify the main capabilities that drive inner business resilience in the context of supply chains; Beta *et al.* (2025) highlighted how cultivating DC can enable governments to innovate responsibly and effectively under the Industry 5.0 paradigm; Modgil *et al.* (2025) uncovered the right capabilities for supply chain professionals in the context of the upcoming paradigm.

However, these contributions tend to address specific and partial dimensions of Industry 5.0. For example, Mohammed *et al.* (2025) concentrated primarily on its technological components, while Modgil *et al.* (2025) focused on the human capability dimension, thereby leaving room for a more comprehensive understanding of the full spectrum of capabilities that firms should activate to transition towards Industry 5.0 in its whole. Accordingly, the study explores sensing, seizing, and reconfiguring capabilities that waste management organizations nurture to navigate the complexity of the Industry 5.0 transition.

3. Methodology

3.1 Research design and context

To detect the dynamic capabilities activated to embrace Industry 5.0 in waste management this study employs a qualitative, multiple-case study design. This approach is established in management literature as a steady methodology that provides insights into an unexplored real-life phenomenon that quantitative methods are not able to extract (Hyett *et al.* 2014, Thomas 2011), thereby capturing the intricacy of the object of study.

The multiple case study analysis is focused on three Italian waste management firms. Italy has been chosen as the research context primarily because it is characterized by a supportive institutional context, that has been implementing initiatives related to circular economy to recycle waste (i.e., and investments of € 27.7 billion for the development of renewable energy and the improvement of the circular economy, PNRR). These efforts translate in Italy as the first ranking country among the five largest European economies in terms of circular economy performance, with the waste management sector as the main driver of this result (Sustainable development foundation, 2024). Moreover, with a municipal waste recycling rate of 53.3% (higher than the EU average of 49.1%) Italy demonstrates a mature operational waste management infrastructure (ISPRA Report, 2024).

The unit of analysis is the organization, with each of the companies treated as an embedded case, encompassing multiple respondent perspectives across various organizational functions (Yin, 2018). The case studies were selected according to a non-probabilistic, purposive sampling approach (Stake, 1995), oriented toward informational richness and cross-case comparability. Indeed, each case was selected for its ability to provide revealing and in-depth evidence of an emerging phenomenon (Eisenhardt and Graebner, 2007). This sampling strategy was guided by the following screening parameters (Rapley, 2014): (1) core business in the waste management sector, (2) being based in Italy, (3) having implemented advanced technologies in the last five years, (4) owning sustainability certificates (e.g., ISO 14001, EMAS), (5) having implemented human-centric practices (e.g., ISO 45001; SA8000). Given the strictness of these criteria and the still-emerging nature of the phenomenon under investigation, three organizations were selected. To maintain confidentiality, the names of the organizations were anonymized using symbols and progressive numbers. Appendix A describes the main characteristics of the involved organizations.

3.2 Data collection

Both primary and secondary data was collected over a period of six months (September 2025 – February 2026). Primary data was collected through qualitative interviews (Kvale and Brinkmann, 2009). To ensure that key informants covered a wide range of knowledge (Eisenhardt and Graebner, 2007). They were recruited in diverse business units. In total, 18 interviews were held across the three case organizations, with 6 interviews conducted each (Table 1). Interviewees were selected through a purposive sampling that required the following criteria: (1) having 10 years of seniority; (2) having a good knowledge of waste management processes. All the interviews were open-ended and semi-structured, so that participants were freely able to respond and also to raise whatever issues they considered important and give the researchers the flexibility to probe any matters that needed to be clarified (Silverman, 2013). Each respondent was first telephonically and informally informed about the scope and the focus of the discussion. In this conversation, they could get more insights into the interview process thereby enhancing their understanding of the topic. Furthermore, a cover letter was sent through an email that requested respondent consent and informed them about the anonymity and confidentiality of data so the respondents would be open to disclosing information beneficial for the study. Each interview lasted between 30 and 45 minutes each. Before organizing the series of interviews, a pilot test among 3 respondents was implemented to identify flaws, possible misunderstandings and weaknesses of the interview design (Kvale, 2007). The interview protocol was organized to extract relevant insights into the transition towards Industry 5.0, by investigating the main capabilities that the firms activated (Castillo-Montoya, 2016; Turner III, 2010). Due to the respondents' geographical distance, the interviews with the selected key informants, were conducted via Zoom platform, digitally recorded and transcribed verbatim to ensure no discrepancy was present (Yin, 2015).

Secondary data was collected to boost primary data and triangulate them (Patton, 2015). They consisted of archival information (e.g., reports, corporate websites, sustainability reporting, strategic plans), local and national waste management reports, and institutional documents. The triangulation process was implemented through the systematic cross-reference with interview transcripts to corroborate emerging codes, ensuring that themes identified in informants' accounts were consistent with documentary evidence. Also, secondary data were employed to validate the findings of the study by verifying their alignment with the organizations formally declared strategies and initiatives.

3.3 Data analysis

Given that the aim of the study was to inductively investigate how waste management firms implemented Industry 5.0 in terms of dynamic capabilities, data were analyzed according to the logic of Gioia Methodology (Gioia *et al.*, 2013). Indeed, this approach allowed a theoretically grounded-empirically informed approach engaging with an abductive logic (Magnani and Gioia, 2023).

Data analysis was conducted collaboratively by the entire research team, undertaking three iterative and interrelated stages.

First, each interview was read several times to develop a deep understanding of the organizational practices, technological initiatives, and transformation processes associated with the transition toward Industry 5.0 in the waste management context. At this stage, archival documents were taken into account to deeply understand and corroborate the informants' declarations.

Second, the study proceeded with the coding process, characterized by an iterative and abductive logic. To enhance analytical rigor and ensure inter-coder reliability, each researcher independently conducted the initial coding, after which coding outcomes were systematically compared and discussed within the research team. This autonomous coding procedure also helped reduce the risk of individual researcher bias throughout the analysis process (Gioia *et al.*, 2013). Agreement was pursued through an iterative, consensus-based process: each disagreement in coding was discussed collectively until convergence was reached, by aligning interpretive and abductive logic underpinning the Gioia methodology (Gioia *et al.*, 2013; Magnani and Gioia, 2023).

Initially, researchers identified recurrent themes, practices, and expressions emerging from the interviews, particularly those related to the enabling dynamic capabilities within waste management firms. The analysis moved progressively from raw qualitative evidence to increasingly abstract conceptualizations through the identification of first-order categories, grounded in informants' terms and interpretations. Subsequently, second-order categories were developed by systematically comparing empirical insights with prior literature on DC. These second-order themes enabled a more theory-centered interpretation of the empirical evidence, capturing how organizations develop sensing, seizing, and reconfiguring capabilities to support human-centric, resilient, and sustainable trajectories.

Finally, aggregate dimensions were identified by combining empirically grounded first-order concepts with theoretically informed second-order themes. At this level, archival documentation were used to validate and tri-

angulate informants’ responses. For example, statements regarding the re-orientation of strategic priorities towards sustainability (e.g., SRM3) were cross-checked against the organizations’ publicly available strategic plans and sustainability reports, confirming that such priorities were also formally embedded in official documentation, avoiding the possibility of relying only on individual perceptions. This highest level of abstraction enabled the researchers to conceptualize the dynamic capabilities underpinning the transition toward Industry 5.0 in waste management organizations.

Table 1: Respondents’ information

<i>ID</i>	<i>Type of actor</i>	<i>Structure characteristics</i>
SRM1	Strategic and risk Manager	O1 is a large Italian waste treatment and disposal firm. It manages approximately 100 waste treatment facilities in the North and Center, including landfills, waste-to-energy plants, anaerobic digestion units, and waste sorting facilities, processing over 7 million tonnes of waste annually.
SM1	Sustainability Manager	
IM1	Innovation Manager	
HR1	HR Manager	
OM1	Operational Manager	
NM1	Network Manager	O2 is one of Italy’s largest waste management companies, operating across the entire waste management value chain, from collection to material and energy recovery, with over 12,000 employees and nationwide presence.
SRM2	Strategic and risk Manager	
SM2	Sustainability Manager	
IM2	Innovation Manager	
HR2	HR Manager	
OM2	Operational Manager	O3 is a leading firm operating across Northwestern Italy and beyond, active in providing environmental services. Through its dedicated environmental subsidiary, the company serves over 3 million inhabitants with waste collection and treatment services, achieving a separate waste collection rate of 72.1% in 2024, significantly above the national average.
NM2	Network Manager	
SRM3	Strategic and risk Manager	
SM3	Sustainability Manager	
IM3	Innovation Manager	
HR3	HR Manager	
OM3	Operational Manager	
NM3	Network Manager	

4. Findings

This section presents the results of the empirical analysis according to a progressive and abductive logic, which identifies and conceptualizes the capabilities activated to embrace a behaviour inspired by Industry 5.0 in waste management organizations. Figure 1 shows the data structure of the methodological systematic process followed as described in the previous section.

4.1 Waste ecosystem scanning capability

Waste ecosystem scanning capability is the first aggregate dimension conceptualized in this analysis. It describes the capacity of waste management organizations to continuously read and interpret the external environment in its regulatory, environmental and social dimensions. This capability represents the foundational sensing mechanism through which firms recognize the urgency of transitioning towards Industry 5.0 and identify the strategic direction needed to make it possible. Three second-order codes underpin this dimension: Institutional and regulatory sensing, Environmental urgency sensing, and Societal consciousness.

Institutional and regulatory sensing captures the organization's ability to monitor and anticipate regulatory pressures at both European and national levels, translating normative mandates into strategic orientations. The firms under study demonstrated a proactive rather than reactive approach to regulatory compliance, treating policy frameworks such as the European Green Deal, the Circular Economy Action Plan, and the UN Agenda 2030 not as external constraints but as strategic enablers. As SRM2 stated: *"European regulations are not a burden for us, they are a roadmap. We read them carefully and use them to anticipate where the sector is going"*. Similarly, said SRM3 *"Following European standards is not easy, but we strongly believe it is necessary to be aligned with them, this is why we have institutionalized a business unit dedicated to regulatory monitoring"*.

Environmental urgency sensing reflects the organization's ability to keep updated with the environmental risks that are linked to such sensitive sectors such as waste management. The organizations demonstrated a clear recognition of the mounting pressures generated by increasing waste volumes, greenhouse gas emissions from transportation and disposal, soil and water contamination risks, and the growing inadequacy of traditional land-fill-based models. OP3 declared: *"We know very well our sector, the waste generation is more and more high. We cannot keep responding with the*

same tools and the same logic – the environmental pressure forces us to innovate, not incrementally but structurally". In the same logic, SRM3 affirmed: *"We know that our activity can produce effects for the society in general. We are committed to be always updated regarding waste generation trends, this allows us not to be late"*.

Societal Consciousness captures the organization's awareness of its responsibilities towards the communities it serves, and its recognition that waste management practices have direct and tangible consequences on citizens' health, quality of life, and societal well-being. The firms demonstrated a genuine orientation towards community welfare that extended beyond service delivery metrics, framing citizens not merely as passive users but as active actors whose well-being sets a strategic priority for them. As IM2 remarked: *"We operate in people's neighborhoods, we affect the air they breathe and the quality of their environment. The health of the community is not a secondary consideration; it is at the center of everything we do"*. This societal awareness also translated into a recognition that community engagement is not optional but structurally necessary for achieving sustainability objectives in waste management. NM1 affirmed: *"Citizens are our most important partners in this transition. Without their awareness and active participation, no technology or regulation will be sufficient to address the waste challenge we are facing"*.

4.2 People-technology orchestration capability

The second aggregate dimension emerging from the analysis is the People-Technology Orchestration Capability. It describes the capacity of waste management organizations to deliberately mobilize, combine, and integrate technological and human resources in a synergistic manner to pursue social and environmental objectives. This capability represents the strategic orchestration of technologies and humans simultaneously, recognizing that the transition towards Industry 5.0 requires the joint activation of digital assets and human potential. Three second-order codes underpin this dimension: Digital and Technological Resource Mobilization, Human-Centric Resource Activation, and Strategic Ecosystem Building.

Digital and technological resource mobilization captures the organization's capacity to identify, invest in, and deploy enabling digital technologies. The firms under study demonstrated a sophisticated approach to technology adoption, moving beyond isolated tool implementation towards the construction of integrated digital ecosystems and smart infrastructures. Investments in IoT sensors, AI-powered sorting systems, blockchain plat-

forms, and smart infrastructure were framed not as efficiency measures but as foundational assets enabling a new operational logic inspired by environmental responsibility. As OP2 stated: *“Investing in technology is not about doing the same things faster – it is about doing fundamentally different things. IoT and AI allow us to build a waste management system that is responsive, transparent, and genuinely sustainable”*.

Human-centric resource activation captures the organization’s capacity to develop, engage, and empower human resources – both internal and external – as active co-creators of the Industry 5.0 transition. This second-order code manifested in waste management through three interconnected practices: workforce upskilling, worker safety enhancement through technology, and community co-creation. The firms demonstrated a genuine commitment to developing their employees’ digital competencies. As HR2 observed: *“We invested heavily in training our people on digital tools. Technology without people who understand it and believe it is just expensive equipment”*. Worker safety emerged as a particularly salient dimension of human-centricity in waste management, given the physical risks inherent in waste operations. The adoption of robotics, automation, and wearable monitoring technologies was explicitly framed as a human welfare investment rather than a purely operational efficiency measure. As OP1 stated: *“Robots in our disposal facilities are not replacing our workers – they are protecting them. No human being should be exposed to hazardous waste if a machine can do it safely”*. Finally, community co-creation emerged as an extension of human-centricity beyond organizational boundaries, with firms actively engaging citizens as participants in the waste management system through digital platforms, and awareness campaigns. As NM3 remarked: *“Citizens are not the end point of our service – they are part of the system. We developed our app to be empowered by their observations”*.

Strategic ecosystem building reflects the organization’s capacity to mobilize resources beyond its own boundaries, through the construction of strategic partnerships, cross-sector collaborations, and innovation ecosystems. The firms demonstrated a clear recognition that no single organization possesses all the capabilities required for a full Industry 5.0 transition in waste management, making ecosystem building a strategic necessity. Partnerships with technology startups, research institutions, municipalities, and European funding bodies were actively cultivated as sources of complementary resources. As NM1 noted: *“We developed a partnership with a digital start up because we needed a tailored IoT systems during the disposal process”*. The creation of shared value emerged as the unifying logic of this ecosystem building activity, with firms increasingly designing their partnership strategies around the co-generation of economic, environmen-

tal, and social value. IM3 affirmed: *“Our partnerships are built around a common objective which is to create value for the territory”*.

4.3 Smart waste cycle reconfiguration capability

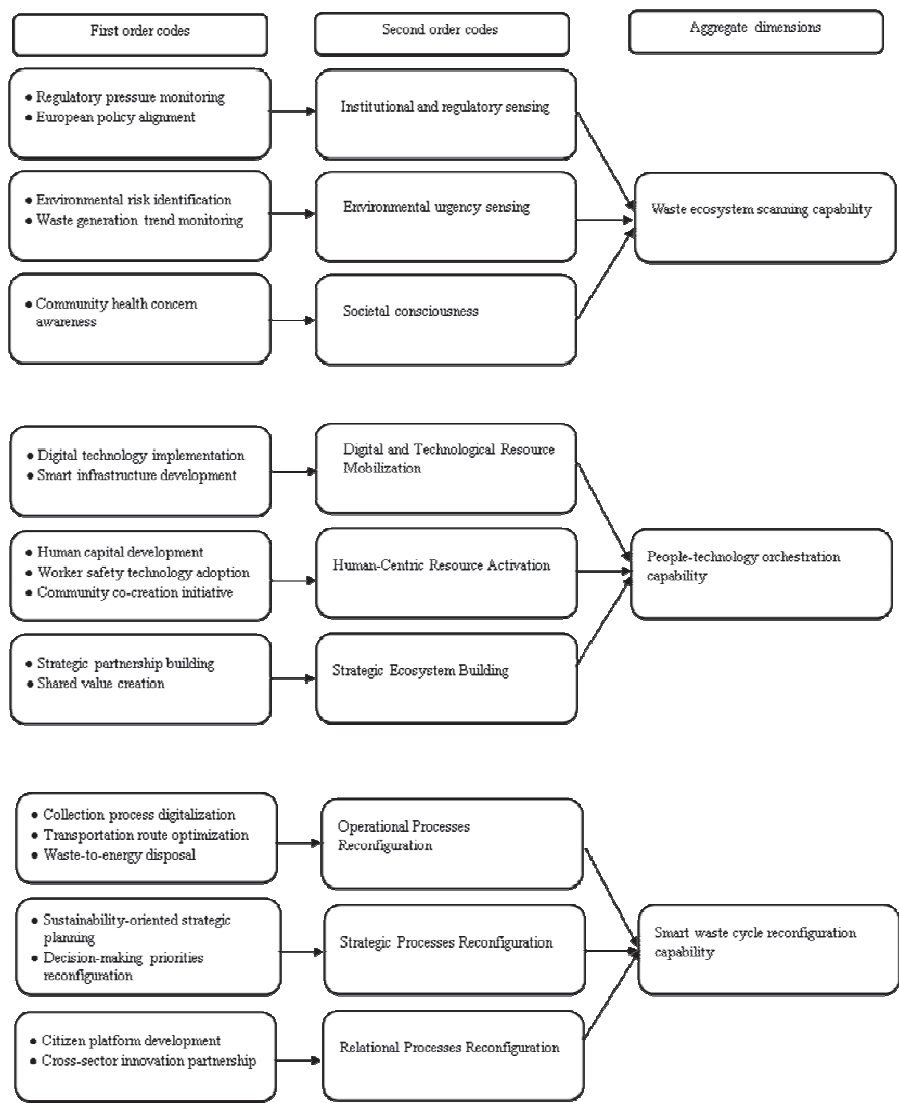
Smart Waste Cycle Reconfiguration Capability is the third aggregate dimension emerging from the analysis. It describes the capacity of waste management organizations to transform their core operational, strategic, and relational processes in response to the sensing and seizing capabilities activated. This dimension represents the manifestation of how firms reconfigure their ways of operating, strategizing, and relating considering technological innovation, environmental urgency, and social responsibility. Three second-order codes underpin this dimension: Operational processes reconfiguration, Strategic processes reconfiguration, and Relational processes reconfiguration.

Operational processes reconfiguration captures the transformation of core waste management processes – collection, transportation, and disposal and recycling – through the integration of digital and smart technologies, bringing the emergence of new operational routines. The digitalization of waste collection emerged as the most visible manifestation of this reconfiguration, with smart bin networks replacing traditional fixed-route collection with demand-responsive systems activated by real-time waste level data. As OP1 stated: *“We no longer send trucks on fixed routes at fixed times. The system tells us where to go and when – based on actual data. This changes everything: efficiency, emissions, costs, and service quality all improve simultaneously”*. Transportation processes underwent a parallel reconfiguration, with GPS tracking, IoT connectivity, and blockchain-based traceability enabling dynamic routing and end-to-end monitoring of waste flows. Also, disposal processes were similarly reconfigured, with firms developing long-term strategies to reduce landfill dependency in favor of waste-to-energy solutions and robotic automation. This reconfiguration reflected a fundamental shift in the treatment of waste, from a problem to be disposed of to a resource to be valorized. SRM1 affirmed: *“Our goal is to make landfill the last resort, not the default option. Waste-to-energy and robotics are the tools that make this possible, they allow us to extract value from waste while protecting our workers”*.

Strategic processes reconfiguration reflects the transformation of the organization’s planning, and business model logics in response to Industry 5.0 imperatives. This second-order code captures a fundamental shift in strategic orientation – from cost-minimization and short-term financial re-

turns to long-term value creation anchored in sustainability, and circularity. As SRM3 affirmed: “Our strategic plan looks completely different from what it was ten years ago. Sustainability is not a chapter at the end; it is the playground within which every strategic decision is made”. Similarly, a reconfiguration of decision-making processes was undertaken, by differently positioning the firms’ priorities, and balancing economic returns with environmental and societal outcomes.

Figure 1: Data structure



Relational processes reconfiguration captures the transformation of the organization's relationships with its key external stakeholders. Citizen platform development emerged as the most visible expression of this relational reconfiguration, with digital tools enabling citizens to actively participate in waste management processes – reporting issues, tracking collection schedules, accessing recycling guidance, and exchanging reusable goods. NM3 stated: “*Our app transformed the relationship with citizens. They are no longer passive recipients of services; they are active participants in a circular system. That changes the nature of our organization fundamentally*”. Cross-sector innovation partnerships further expanded the organization's relational ecosystem, with firms co-developing technological solutions, sharing knowledge, and accessing complementary resources through collaborations with startups, universities, and institutional actors. As NM3 noted: “*Our most important innovations did not come from inside our organization, they came from partnerships. Opening up to external knowledge and co-developing solutions with others is now a structural part of how we operate*”.

5. Discussions and implications

This study uncovers the dynamic capabilities that waste management organizations activate to transition towards Industry 5.0. The empirical analysis, conducted across three Italian waste management firms, reveals three aggregate dimensions, such as Waste Ecosystem Scanning Capability, People-Technology Orchestration Capability, and Smart Waste Cycle Reconfiguration Capability. They collectively constitute the overarching capabilities to trigger the shift towards Industry 5.0.

Waste Ecosystem Scanning Capability emerges as the foundational sensing mechanism underpinning the transition. It is operationally nurtured by the institutionalization of dedicated organizational units (i.e., regulatory monitoring units), then reflecting the top management efforts in explicitly allocating organizational resources. Instead of functioning as a passive monitoring activity, this capability reflects an active, interpretive process through which organizations develop the ability of simultaneous considering and reading regulatory, ecological, and social signals from the external environment. In this direction, this capability configures as multi-dimensional. Therefore, differently from previous studies (Mohammed *et al.*, 2025; Modgil *et al.*, 2025), which have predominantly addressed sensing in terms of market or technological signals, the present one demonstrates that in socially and environmentally sensitive industries, sensing is

inseparable from normative and societal dimensions, and, more specifically, from the governance structures that formalize and sustain it. In the context of waste management specifically, where operational activities have direct consequences on public health and territorial sustainability, sensing must also encompass civic and environmental responsibility.

People-Technology Orchestration Capability represents the core seizing mechanism through which organizations translate environmental awareness into actionable organizational transformation. In other words, it emerges that to meet environmental and societal issues, the firms both implemented technologies and valorized the role of humans. Indeed, technologies such as IoT infrastructures, blockchain, AI systems were integrated, while knowledge-based resources (e.g., workforce upskilling, community involvement, cross-sector partnerships) were mobilized to create the transformative value towards Industry 5.0. This orchestration requires top management to actively integrate resources investments in technological infrastructure and workforce development, indicating that seizing capability depends on a form of strategic leadership capable of sustaining a balanced technology-human approach over time. This finding resonates with the conceptualization of seizing capabilities (Teece, 2007), by showing that value creation arises not from the optimization of technological or human assets in isolation, but from their orchestrated integration. The orchestration, finally, emerges as a distinctive conceptualization of the seizing capability in service contexts, which differs from the technology-centered seizing logic which is central in manufacturing-oriented studies (Ghobakhloo *et al.*, 2022; Ghobakhloo *et al.*, 2024a).

Smart Waste Cycle Reconfiguration Capability captures the multi-level transformation that occurs once sensing and seizing capabilities have been activated. The reconfiguration unfolds simultaneously across operational, strategic, and relational dimensions, distinguishing Industry 5.0 transition from simple process digitalization. Operationally, the shift from fixed-route collection to demand-responsive smart systems and from landfill-based disposal to waste-to-energy and robotic automation reflects a fundamental redesign of the waste management value chain. Strategically, sustainability moves from a peripheral reporting requirement to the organizing logic of long-term planning. This approach represents a governance-level shift, whereby top management repositions sustainability as the organizing principle of strategic decision-making rather than a compliance outcome (Helfat and Peteraf, 2015). Relationally, citizens and external partners are repositioned from passive service recipients to active co-creators within a circular ecosystem, a transformation coordinated through structured mechanisms of stakeholder engagement. This multi-level reconfiguration aligns

with Teece's (2023) extended conceptualization of reconfiguring capabilities as encompassing cultural and relational transformation and enriches it by grounding it empirically in a service industry context.

The study presents both theoretical and managerial implications.

First, it extends the DC Theory reconceptualizing each of its constitutive capabilities for navigating the transition towards Industry 5.0. Sensing is shown to be multidimensional, going beyond isolated market or technological signals. Seizing is reconceptualized as an orchestration logic that jointly mobilizes technological and human resources. Reconfiguring, in turn, is shown to unfold simultaneously across operational, strategic, and relational dimensions. Second, it contextualizes the dynamic capabilities in a context-specific domain (i.e., waste management). This extends prior contributions (Mohammed *et al.*, 2025; Modgil *et al.*, 2025; Beta *et al.*, 2025), which have addressed partial or sectoral dimensions, towards a more comprehensive and integrated understanding. Third, it demonstrates that sensing, seizing, and reconfiguring are activated through governance mechanisms that reshape the allocation of organizational resources, the human-technology combination and the collaboration with stakeholders. In this direction, top management plays a central role in supporting the transition towards Industry 5.0. Indeed, the whole process is the result of governance deliberate choices, from the organizational structure to the strategic decision-making process. This reading resonates with, and extends, Teece's (2007) original formulation, pointing towards a more governance-sensitive understanding of how dynamic capabilities are activated and sustained. Fourth, it proposes a dynamic perspective of how the transition is triggered towards Industry 5.0, overcoming previous studies that mostly described Industry 5.0 in terms of outcomes (Ghobakhloo *et al.*, 2023). Fifth, it responds to the call for broader service-sector investigation of Industry 5.0 (Ciasullo and Ferrara, 2025), generating context-sensitive insights that challenge the manufacturing-centric assumptions pervading the existing literature.

Managerially, the study provides actionable insights to businesses. First, they should institutionalize environmental scanning as a dedicated strategic business area to nurture that proactive behaviour that allow managers to be constantly updated with environment regulatory trends, and community signals. Therefore, they could create specific teams addressing it. Second, managers must invest in people and technology simultaneously. The orchestration logic emerging from the data shows that digital tools generate value only when paired with workforce upskilling and worker safety initiatives. Accordingly, establishing partnerships emerges as a relevant condition for sustaining the transition over time.

Third, managers should recognize users and citizens as embedded co-actors in creating value. Indeed, through human-centric digital platforms, the firm is able to collect real-time behavioral data that feedback into sensing and reconfiguration processes, creating a virtuous cycle between community involvement and organizational learning.

6. Conclusions and limitations

This study provided a granular exploration of the dynamic capabilities that waste management organizations must activate to transition toward Industry 5.0. A qualitative multiple case study of three Italian firms has been conducted by implementing the Gioia methodology. Three aggregate dimensions were identified: the Waste Ecosystem Scanning Capability, the People-Technology Orchestration Capability, and the Smart Waste Cycle Reconfiguration Capability.

Although this research provides valuable insights into Industry 5.0 core capabilities, there are some limitations. First, the focus on three main Italian waste management firms limits the generalizability of the findings, both because the study considers one geographical context and firms that are embracing this transition towards Industry 5.0. Future studies could perform comparative analysis across different national contexts (considering also emerging economies) thereby enriching the understanding of how institutional environments influence capability development. Moreover, comparative studies could assess the differences between firms that are transitioning and those who are not. In this sense, also longitudinal studies could be employed to track capabilities evolution over time. Second, the reliance on semi-structured interviews and archival data as the sole sources of evidence may introduce collection biases that constrain the depth of the findings. Future research adopting a mixed-method approach and a broader sample would therefore strengthen the robustness and comprehensiveness of the emerging understanding of Industry 5.0 capabilities.

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Appendix A

Organization 3	Characteristics of firms	Organization 1	Organization 2
IoT and AI integration for smart waste management; AI sensor for waste composition analysis; AI computer vision systems for sorting cabin material analysis	Enabling Technologies	AI for recyclable material identification and collection route optimization; IoT platform for real-time data collection from sensors and truck-mounted cameras; Generative AI across 150 use cases.	IoT-enabled waste collection; AI-powered waste-to-energy plants; data analytics platforms for circular economy management; smart city digital infrastructure
Collection (smart bins, demand-responsive systems); transportation (route optimization); disposal (sorting automation); recycling (AI-driven sorting)	Processes Reconfigured	Collection (dynamic data-driven routing); transportation (IoT-based traceability); disposal (AI sorting, waste-to-energy); recycling (AI material identification)	Collection, transportation, disposal (waste-to-energy), recycling (material recovery), smart city services
Project for disability inclusion; mandatory sustainability training programs for all staff levels, ISO 45001; SA8000	Human-centricity- Worker	Top Employer certification for 17 consecutive years; global Top 10 Diversity & Inclusion Index; robotics for worker protection in disposal facilities, ISO 45001; SA8000	Worker safety programs; robotics to reduce worker exposure to hazardous waste, ISO 45001; SA8000
App for separate waste collection, door-to-door calendar, collection center locator, geo-referenced photo reporting, environmental news, kitchen waste recipes, service desk locator	Human-centricity- Citizen	App with 950,000+ downloads; barcode scanner for recycling guidance, door-to-door collection calendar, geolocation of ecological stations, photo-reporting of abandoned waste, bulky waste collection booking, Alexa voice integration	Free app for citizens collection calendar, separate waste collection guidance, anomaly reporting, ecological platform locator, bulky waste collection booking
72.1% separate waste collection rate (vs. 67% national average); ESG objectives to 2040; agri-voltaic and biogas from organic waste, ISO 14001, EMAS	Sustainability – Environmental	Net Zero 2050 target; -35% CO2 by 2029; 77.7% separate collection target by 2027; biomethane production from organic waste; plastic recycling, ISO 14001, EMAS	7 billion euro circular economy investments by 2035; 6.6 million tonnes of waste managed annually; material and energy recovery as core model, ISO 14001, EMAS
Loyalty program with gamification for citizen engagement in urban regeneration and Energy Bank donations	Sustainability – Social	Creating Shared Value as core business model; environmental education programs in schools	Community transparency initiatives around waste-to-energy plants; shared territorial value; institutional partnerships for service co-design
AI technology specialists for computer vision sorting systems; European Investment Bank for circular economy development; universities and research centers; municipalities for smart waste infrastructure	Strategic Collaborations	Generative AI start up; enterprise digital transformation, international organization for recycled plastic pipes	European Investment Bank for circular economy investments; technology startups for innovation; municipalities for service co-design; waste-to-energy technology partners

The Integrated Finance in FoodTech: A Qualitative Analysis of Sustainable Startup Scalability

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Abstract

This paper investigates the interaction between radical innovation and sustainable finance in the FoodTech sector, a context characterized not only by high capital intensity and delayed returns, but also by challenges related to consumer acceptance, regulatory requirements, and scalability. Through the longitudinal qualitative case study of Futura S.r.l., an innovative startup located in Southern Italy, the research examines how sustainable ventures navigate financial constraints within a peripheral entrepreneurial ecosystem. Drawing on the triangulation of documentary and operational sources, the study reconstructs the firm's evolution. The findings reveal that startup growth is enabled by a hybrid financing architecture combining

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public grants, bank debt, private equity, and ecosystem partnerships. Moreover, the analysis shows that sustainability supports scalability through both signaling and substantive mechanisms. Indeed, transparent ESG metrics enhance legitimacy and reduce information asymmetries, while sustainability-oriented investments generate measurable capabilities that facilitate access to finance and strategic collaborations. The study contributes to the literature on sustainable entrepreneurship and entrepreneurial finance by explaining how hybrid funding strategies support innovation in FoodTech ventures. Finally, it offers managerial implications for resource orchestration and network building, as well as policy implications regarding the role of public support in fostering sustainable entrepreneurship.

Keywords: Integrated finance; Sustainable entrepreneurship; FoodTech; Case study; Innovation ecosystem; Regional development; Startup.

Sommario

Il presente studio indaga l'interazione tra innovazione radicale e finanza sostenibile nel settore FoodTech, un contesto caratterizzato non solo da un'elevata intensità di capitale e da ritorni differiti nel tempo, ma anche da sfide legate all'accettazione da parte dei consumatori, ai requisiti normativi e alla scalabilità. Attraverso uno studio di caso qualitativo longitudinale di Futura S.r.l., startup innovativa localizzata nel Sud Italia, la ricerca analizza il modo in cui le imprese sostenibili affrontano i vincoli finanziari all'interno di un ecosistema imprenditoriale periferico.

Basandosi sulla triangolazione di fonti documentali e operative, lo studio ricostruisce l'evoluzione dell'impresa nel tempo. I risultati evidenziano che la crescita della startup è stata resa possibile da un'architettura finanziaria ibrida che combina contributi pubblici, debito bancario, capitale di rischio privato e partnership ecosistemiche. Inoltre, l'analisi mostra come la sostenibilità favorisca la scalabilità attraverso meccanismi sia di segnalazione sia sostanziali. In particolare, metriche ESG trasparenti rafforzano la legittimità dell'impresa e riducono le asimmetrie informative, mentre gli investimenti orientati alla sostenibilità generano capacità misurabili che facilitano l'accesso ai finanziamenti e alle collaborazioni strategiche. Lo studio contribuisce alla letteratura sull'imprenditorialità sostenibile e sulla finanza imprenditoriale, spiegando come strategie di finanziamento ibride possano sostenere l'innovazione nelle imprese FoodTech.

Infine, il lavoro offre implicazioni manageriali per l'orchestrazione delle risorse e la costruzione di reti relazionali, nonché implicazioni di policy riguardanti il ruolo del sostegno pubblico nella promozione dell'imprenditorialità sostenibile.

Parole chiave: Finanza integrata; imprenditorialità sostenibile; FoodTech; studio di caso; ecosistema dell'innovazione; sviluppo regionale; startup.

1. Introduction

In recent years, the evolution of global markets has imposed a paradigm shift, moving attention away from the mere maximization of profit toward the generation of integrated value, capable of combining economic, environmental, and social objectives. This transition has been accompanied by evolving social expectations regarding the responsibilities of firms toward society and the environment, redefining what stakeholders perceive as appropriate and legitimate entrepreneurial behaviour (Horne & Mollborn, 2020).

Within this scenario, the FoodTech sector has emerged as one of the most advanced laboratories for experimenting with sustainable business models. The sector is not limited to the automation of production processes, but addresses crucial challenges related to the resilience of food systems, public health, and the reduction of environmental externalities (York & Venkataraman, 2010). Startups operating in this field are required to respond to a market demand increasingly oriented toward food inclusivity and radical traceability. The production of functional foods, such as gluten-free or lactose-free products, combined with the optimization of natural resources, transforms food technology into a driver of social well-being and environmental sustainability (Shepherd & Patzelt, 2011).

However, the high capital intensity required for research and development and for the industrialization of such solutions places FoodTech startups, defined as ventures that leverage technological innovation to improve food production, processing, distribution, and consumption, before a paradox: the need for substantial initial investments in the presence of returns deferred over time (Hockerts & Wüstenhagen, 2010).

FoodTech startups face distinctive commercialization and scaling challenges. The success of food innovations depends on consumer acceptance, while stringent food-safety regulations can increase time-to-market and uncertainty (Mosikyan *et al.*, 2024; Laureati *et al.*, 2024; Stephens *et al.*, 2018). Moreover, scaling often requires substantial investments in specialized production facilities and supply-chain integration (Tziva *et al.*, 2020; Stephens *et al.*, 2018), resulting in significant financing needs and complex growth trajectories.

These characteristics make access to finance a critical challenge for FoodTech startups, often requiring entrepreneurs to combine multiple funding sources, including public support, private investors, and sustainable finance instruments. In this context, financing decisions become closely linked to sustainability. On the one hand, credible ESG metrics, scientific validation, and transparent reporting reduce information asymmetries and

strengthen legitimacy among investors (Delmas & Burbano, 2011; Yang *et al.*, 2024). On the other hand, sustainability-oriented investments can generate measurable outcomes that influence valuation and financing decisions (Mansouri & Momtaz, 2022). Sustainability therefore acts not only as a signal of venture quality but also as a strategic asset that facilitates access to capital and supports scalability (Lüdeke-Freund, 2020).

However, despite growing attention to sustainable entrepreneurship and sustainable finance, limited research has examined how evolving social expectations surrounding sustainability become translated into legitimacy mechanisms that shape startups' access to heterogeneous sources of finance. This gap appears particularly relevant in FoodTech contexts, where high capital intensity, regulatory complexity, and societal demands for transparency and inclusiveness intersect. Existing studies have predominantly examined these dimensions in isolation, focusing either on sustainable entrepreneurship, legitimacy processes, or entrepreneurial finance. Less attention has been devoted to understanding how these elements interact over time and how legitimacy-building practices enable sustainable ventures to orchestrate hybrid financing trajectories. Addressing this gap, we propose that sustainability-related expectations do not merely constrain entrepreneurial action but can be strategically translated into signals that facilitate the mobilization of heterogeneous financial resources.

The analysis of the evolutionary dynamics of Futura S.r.l. aims to investigate how sustainability-related expectations are transformed into legitimacy-enhancing practices that facilitate access to hybrid financial architectures. More specifically, the study develops a process-based explanation of how sustainable ventures mobilize heterogeneous sources of capital by converting sustainability commitments into credible signals recognized by investors, intermediaries, and other ecosystem actors. In doing so, the study contributes to the literature on sustainable entrepreneurship by connecting insights from institutional theory and the emerging literature on social norms, showing how legitimacy functions as a dynamic mechanism linking sustainability and resource mobilization.

From this perspective, the use of a qualitative approach based on a case study appears to be the most suitable choice for capturing the complexity of phenomena that are intrinsically embedded within their context and characterized by non-linear process dynamics (Pillai *et al.*, 2024). While quantitative research often tends to prioritize measurement precision, the case study allows for the reconstruction of the decision-making processes and relationships that define value creation (Bergh *et al.*, 2017), exploring how evolving social expectations become translated into institutional legitimacy mechanisms that shape entrepreneurial access to heterogeneous sources of

finance (Suchman, 1995; DiMaggio and Powell, 1983; Horne and Mollborn, 2020).

Within this framework, the role of human capital emerges strongly as a fundamental pillar for activating such pathways. The success of a high-impact entrepreneurial initiative, in fact, does not depend exclusively on the effectiveness of financial models or the solidity of the technological infrastructure, but finds its genesis in the complementarity of aptitudes and in the strategic vision of its founders, characterized by a strong operational background.

In the case of Futura S.r.l., the complementarity between the founders' profiles contributed significantly to the venture's development. Fabio Biondi brought extensive expertise in the food sector and product innovation, while Giuseppe Russo contributed to managerial, financial, and institutional competences. Their combined capabilities facilitated the alignment of technological innovation, strategic governance, and access to external resources.

The remainder of the article is structured as follows. Section 2 presents the conceptual background, Section 3 describes the case study methodology, Section 4 reports the findings, and the final sections discuss the results and present the conclusions.

2. Conceptual background

2.1 Sustainable entrepreneurship, legitimacy, and value creation

Sustainable entrepreneurship has progressively consolidated itself as an interpretative paradigm capable of describing forms of entrepreneurial action oriented not only toward the creation of economic value, but toward the integrated generation of environmental and social benefits.

From this perspective, the firm is no longer interpreted exclusively as a productive unit aimed at profit maximization, but as a strategic actor capable of actively contributing to the ecological transition and to the resilience of socio-economic systems through radical innovation in products, processes, and business models (Elkington, 1997; Porter & Kramer, 2011).

A central theoretical reference in this field is provided by the definition proposed by Shepherd and Patzelt (2011), according to whom sustainable entrepreneurship consists in the discovery and exploitation of opportunities aimed at developing future products and processes capable of generating “broadly construed gains”, while preserving nature and supporting local communities. This perspective is particularly relevant precisely because it

integrates sustainability into the core logic of entrepreneurial opportunity, avoiding its relegation to a merely ethical, philanthropic, or reputational dimension.

Within this framework, several contributions have highlighted how environmental and social criticalities do not merely represent constraints, but genuine sources of opportunity. Dean and McMullen (2007) and Cohen and Winn (2007), for example, underline how market inefficiencies related to environmental degradation generate spaces for the emergence of new models capable of internalizing negative externalities. Consequently, sustainability is transformed into a competitive driver that enables the creation of new markets and unprecedented industrial configurations (York & Venkataraman, 2010).

More recent literature has further clarified that sustainable entrepreneurship manifests itself through business models that incorporate impact directly into the value proposition and organizational processes (Lüdeke-Freund, 2020). This approach shifts attention away from a simple value-oriented perspective toward the firm's ability to industrialize and scale a responsible value proposition (Schaltegger, Hansen & Lüdeke-Freund, 2016).

Recent contributions have further emphasized that sustainable entrepreneurship should be understood as a process embedded within broader socio-technical systems, in which value creation depends on the alignment between organizational capabilities, stakeholder expectations, and enabling institutional conditions (Muñoz & Cohen, 2018). This perspective highlights that the scalability of sustainable business models is contingent not only upon entrepreneurial agency but also upon the broader environments in which ventures operate.

A crucial theoretical issue related to sustainable entrepreneurship concerns the fact that it develops within systems of socially shared expectations that define what behaviours are considered appropriate and desirable. Horne and Mollborn (2020) define social norms as collectively recognized expectations that guide behaviour through social approval and disapproval mechanisms. In the context of entrepreneurship, these norms influence how stakeholders evaluate the legitimacy of ventures and their claims regarding sustainability. While social norms refer to informal expectations and shared understandings, institutions encompass broader systems of formal and informal rules that structure organizational action (DiMaggio & Powell, 1983). Social norms may therefore be understood as one of the mechanisms through which institutional pressures emerge and shape organizational behaviour. Firms tend to adapt to these pressures in order to obtain legitimacy and, consequently, access to critical resources (Suchman, 1995). Such legit-

imacy is not static but continuously negotiated through interactions with multiple audiences, whose evaluations evolve over time as societal expectations change (Bitektine, 2011). Consequently, ventures must constantly demonstrate congruence between their sustainability claims and observable organizational practices. Sustainability may therefore be interpreted as a process of progressive institutionalization that redefines the criteria of economic acceptability for entrepreneurial action. This process is consistent with evidence showing that deviations from socially accepted expectations may trigger sanctions, while conformity enhances organizational acceptance and access to opportunities (Ody-Brasier & Vermeulen, 2020).

In this regard, Muñoz and Cohen (2018) emphasize how increasing accountability represents a strategic response to the evolution of the regulatory framework. Within the European context, for example, these dynamics have been accelerated by stringent regulatory frameworks linked to the green transition and ESG disclosure, as demonstrated by the Corporate Sustainability Reporting Directive (European Parliament and Council, 2022). In this scenario, sustainability can no longer be treated as a purely narrative or accessory dimension: Binder and Belz (2015) observe that a firm's credibility depends on its ability to make impact measurable and verifiable. As sustainability claims increasingly become subject to scrutiny, measurable indicators and transparent reporting systems reduce informational ambiguity and support legitimacy judgments by external audiences (Delmas and Burbano, 2011). This represents a fundamental transition. In order for sustainability to become a financial lever, it must be translated into metrics and standards capable of reducing informational ambiguity toward external actors. Moreover, this necessity has now been intensified by the risk of greenwashing, to the extent that the market has been driven toward a strengthening of certification and transparency systems (Delmas & Burbano, 2011), thereby attributing to sustainability a distinctly informational and governance-oriented dimension.

2.2 Sustainable finance and access to capital: sustainability as a selection criterion

Access to capital has historically represented one of the most critical issues for the survival and growth of sustainable startups. The literature highlights how these firms must face structurally more severe financial constraints than conventional business models, due to the need for substantial initial investments in Research and Development, the complexity of regulatory compliance, and the creation of physical production infrastructures that

generate returns deferred over time (Hall & Wagner, 2012; Hockerts & Wüstenhagen, 2010). This scenario creates a genuine funding gap, because it forces entrepreneurs to translate sustainability into observable and measurable signals capable of generating trust within a market often characterized by informational asymmetries (Schaltegger & Wagner, 2011).

Entrepreneurial finance literature has long highlighted the coexistence of bank debt and venture capital as alternative yet complementary sources of funding. Venture capital is generally associated with ventures characterized by high growth potential, severe information asymmetries, and intangible assets, whereas bank debt tends to be more suitable when firms can rely on collateral and more predictable cash flows (de Bettignies & Brandner, 2007). Despite the prominence of venture-backed success stories, bank financing remains the predominant source of external funding for new firms (Robb & Robinson, 2014).

Despite these challenges, recent regulatory and market developments have progressively reshaped the relationship between sustainability and access to finance. The introduction of the EU Taxonomy Regulation (2020) and the Sustainable Finance Disclosure Regulation (SFDR) has begun to codify objective criteria for the identification of “green” activities, directly influencing the risk assessment models of credit institutions and investment funds. Recent studies indeed suggest that the integration of ESG (Environmental, Social, and Governance) parameters is transforming sustainability from a reputational asset into an essential criterion of economic selection (Derdabi & Dvouletý, 2025).

At the same time, entrepreneurial finance literature suggests that investors do not follow a uniform selection logic. Traditional studies portray venture capital as relying on staged financing and intensive monitoring mechanisms designed to mitigate agency problems and information asymmetries (Gompers, 2022). However, more recent evidence indicates that reductions in experimentation costs have encouraged some venture capitalists to adopt “spray-and-pray” strategies, characterized by smaller investments across a larger portfolio of ventures (Ewens *et al.*, 2018).

For sustainable startups, these heterogeneous investment approaches imply that access to capital depends not only on growth potential but also on the ability to reduce uncertainty through credible sustainability signals. Recent studies further suggest that sustainability-related information increasingly enters investors’ screening processes by complementing traditional financial indicators rather than replacing them. ESG-related disclosures may therefore contribute to reducing perceived risk and improving investment attractiveness, particularly in contexts characterized by uncertainty and intangible assets (Mansouri & Momtaz, 2022; Yang *et al.*, 2024).

Transparent reporting practices, measurable impact indicators, and verifiable certifications may help entrepreneurs mitigate informational asymmetries and strengthen their legitimacy in the eyes of different categories of investors (Delmas & Burbano, 2011).

2.3 Integrated finance and hybrid funding models: a strategic trajectory

The financing of sustainable innovation rarely follows linear or monochromatic trajectories. Rather, it takes the form of a complex, hybrid, and sequential architecture, and this dynamic finds its theoretical foundation in the concept of blended finance, which involves the strategic use of public resources to mobilize additional private capital toward sustainable development objectives (OECD, 2018). Within this framework, the role of the State and development agencies changes radically: they no longer act merely to provide subsidies, but assume an enabling role by intervening during the highest-risk phases and facilitating the derisking of operations (Mazucato, 2013).

Blended and hybrid financing arrangements have increasingly been interpreted as governance mechanisms through which heterogeneous actors coordinate distinct objectives and risk preferences around common sustainability goals (Geddes *et al.*, 2018). Rather than representing exceptional funding configurations, these arrangements are becoming characteristic of innovation processes involving high uncertainty and significant societal impact.

Looking at the structure of an integrated finance pathway, it is possible to observe how the entire system rests upon three fundamental pillars, necessary to ensure long-term solidity.

First, there is institutional derisking, where instruments such as public guarantees and non-repayable grants function as a “shield” protecting the entry of private investments and commercial banks. Second, there is the sequentiality of funding sources, which triggers signaling mechanisms: each financing round obtained – whether a European grant or a business angel investment – acts as a certificate of quality that reduces perceived risk for the subsequent stage (Spence, 1973; Connelly *et al.*, 2011). Finally, there is the strategic allocation toward intangible assets, which distinguishes sustainable startups from purely digital (asset-light) firms.

The need to invest in laboratories, validation tests, and intellectual property protection shifts the focus of finance toward the construction of enduring and difficult-to-imitate competitive advantages (Barney, 1991).

Building on these theoretical insights, this study adopts the term integrated finance as an interpretative construct to describe the coordinated and sequential orchestration of heterogeneous funding sources throughout a venture's development trajectory. In this sense, integrated finance does not refer to the technological integration of financial services, as commonly understood in fintech contexts, but to the way different financial instruments perform complementary functions across successive stages of venture development. Public support mechanisms, debt instruments, and equity investments are therefore viewed as components of a broader financing architecture whose effectiveness depends on their alignment with evolving organizational needs and strategic objectives.

Viewed from this perspective, hybrid financing arrangements can be interpreted not only as mechanisms for resource acquisition but also as cumulative processes of legitimacy building. Each funding milestone functions as a signal that reduces uncertainty and influences subsequent evaluations by external audiences (Connelly *et al.*, 2011). In line with evidence showing that social influence and prior affiliations shape the recognition of entrepreneurial quality and opportunity (Azoulay *et al.*, 2017), the ability to attract heterogeneous funding sources may reinforce a venture's perceived credibility and facilitate access to additional resources. Integrated finance thus becomes a cumulative process of legitimization: the capital raised is not used solely to cover burn rate but is transformed into reputational capital and technological assets that reinforce and protect the firm's market positioning.

2.4 Entrepreneurial Ecosystems and Innovation Intermediaries as Enabling Infrastructures

If sustainability acts as a driver of innovation, the firm's ability to consolidate itself depends closely on ecosystemic conditions. Entrepreneurship does not develop in isolation, but within networks composed of interdependent actors such as universities, investors, institutions, and incubators (Isenberg, 2010; Stam, 2015). The ecosystem therefore represents an enabling infrastructure capable of reducing transaction costs and accelerating organizational learning.

For sustainable startups, which simultaneously face technological and regulatory complexities, access to scientific knowledge and legitimization networks directly conditions the possibility of transforming an intuition into an industrializable model (Schlange, 2009). Furthermore, the definition of innovation ecosystem proposed by Granstrand and Holgersson (2020)

emphasizes the evolutionary nature of these processes, where technological complementarity often requires collaborations that extend beyond the boundaries of the single firm (Adner, 2017). However, the effectiveness of these collaborations depends not only on formal governance arrangements but also on shared norms regulating what actors perceive as appropriate uses of transferred knowledge. As shown by Di Stefano *et al.* (2014), informal expectations can shape knowledge exchange by defining acceptable behaviours and fostering trust among ecosystem participants.

Digitalization has further strengthened these dynamics: Elia *et al.* (2020) highlight that, within digital entrepreneurial ecosystems, technology functions as an infrastructure capable of reshaping interactions. In the field of sustainability, moreover, the use of digital tools for traceability and data collection makes impact measurement more credible, reducing informational asymmetries toward consumers and investors (Delmas & Burbano, 2011).

Ultimately, ecosystems should be viewed not merely as contextual settings but as relational infrastructures that simultaneously support organizational learning, legitimacy building, and resource mobilization.

In this collaborative context, innovation intermediaries may be defined as organizers or actors that facilitate the innovation process by connecting different subjects, supporting knowledge exchange, and providing services that sustain innovative activities (Howells, 2006).

Within the context of entrepreneurship, these entities — including incubators, accelerators, and innovation hubs — assume a crucial role in fostering the transition from the laboratory phase to the market phase; consolidated literature has extensively documented the importance of the mentoring services and logistical support they are able to provide (Bruneel *et al.*, 2012). More recent studies have highlighted how incubators increasingly perform boundary-spanning functions, connecting ventures with investors, regulators, industrial partners, and knowledge providers while facilitating access to complementary resources required for scaling (Pauwels *et al.*, 2016; Autio *et al.*, 2018). However, in the context of high-impact entrepreneurship, their function has progressively evolved toward a form of financial orchestration.

The modern incubator therefore operates within a genuine capital architecture dimension, connecting startups that are often technically brilliant but financially fragile with the complexity of subsidized finance instruments and equity markets. According to the entrepreneurial ecosystem perspective, incubators reduce territorial fragmentation and guide firms through the dense framework of ESG compliance, helping them structure impact reporting systems that are attractive to institutional investors (Autio *et al.*, 2018).

By acting as informal certifiers and quality gatekeepers, incubators contribute to the social validation of entrepreneurial projects, signaling that ventures have undergone rigorous processes of selection and evaluation. This function is particularly important in contexts characterized by uncertainty, where conformity to accepted standards and expectations facilitates organizational acceptance and resource mobilization (Ody-Brasier & Vermeulen, 2020). By reducing uncertainty for external stakeholders, incubators facilitate interactions between startups and heterogeneous providers of capital and strengthen the legitimacy of entrepreneurial initiatives within the broader ecosystem.

Ultimately, intermediation transforms the ecosystem from a passive network of relationships into an active financing infrastructure, ensuring that sustainable startups possess the resources necessary to face the challenge of international scalability without losing their territorial roots.

2.5 FoodTech as a Context for Sustainable Entrepreneurship

As agri-food systems face growing pressures to feed a rising global population while reducing environmental impacts and adapting to climate challenges, FoodTech is gaining prominence as a key driver of innovation. FoodTech refers to innovative ventures and ecosystems that develop technological solutions across the food value chain, from production and processing to distribution, retail, and waste management. As a multidisciplinary field, it combines expertise from areas such as biotechnology, engineering, food science, and digital technologies to address challenges related to sustainability, efficiency, food security, and supply-chain management (OECD, 2026). As an empirical setting, FoodTech provides a particularly suitable context for examining the interplay between sustainability, legitimacy, and hybrid financing because it combines high technological uncertainty, strong regulatory pressures, significant capital intensity, and growing societal demands for transparency and inclusiveness (Stephens *et al.*, 2018; Tziva *et al.*, 2020).

The startups in this sector are faced with a paradox: the need for substantial initial investments in the presence of returns deferred over time (Hockerts & Wüstenhagen, 2010).

FoodTech startups face different challenges related to the commercialization of food innovations, which depends strongly on consumer acceptance (Mosikyan *et al.*, 2024; Laureati *et al.*, 2024). Moreover, many FoodTech innovations are subject to stringent food-safety standards and regulatory approval procedures, which can extend time-to-market and in-

crease uncertainty surrounding commercialization (Stephens *et al.*, 2018). Then, scaling FoodTech innovations often requires substantial investments in specialized production facilities, manufacturing capabilities, and supply-chain integration, creating challenges that go beyond those typically faced by digital ventures (Tziva *et al.*, 2020; Stephens *et al.*, 2018). These characteristics contribute to a distinctive entrepreneurial context in which financing requirements, growth trajectories, and commercialization risks may differ from those observed in other technology-intensive sectors.

This means that access to finance is a critical challenge for FoodTech startups, which often exceed the capacity of traditional financing channels. Consequently, entrepreneurial growth increasingly depends on the ability to combine multiple funding sources, including public support schemes, impact-oriented investors, venture capital, corporate partnerships, and other forms of sustainable finance. Sustainable finance is therefore not merely a source of capital but a mechanism through which startups can align economic viability with environmental and social objectives while reducing financing constraints and supporting scalability. Understanding how entrepreneurs combine these financial instruments becomes relevant in ecosystems, where access to large speculative investors may be limited and financial sustainability depends on a more diversified funding architecture.

It is precisely here that the link with sustainable finance becomes inseparable. To be financeable, FoodTech startups must translate their technological innovation into objective impact metrics and defensible assets. Sustainability operates through two complementary mechanisms. First, it acts as a signaling device that reduces information asymmetries between entrepreneurs and investors. Through credible impact metrics, scientific validation, and transparent reporting, startups can demonstrate the quality and legitimacy of their business models, thereby mitigating concerns about greenwashing and technological failure (Delmas & Burbano, 2011; Yang *et al.*, 2024). Second, sustainability contributes to scalability through the actual implementation of sustainable investments. When sustainability is embedded in production processes, resource efficiency, traceability systems, and supply-chain management, it generates measurable ESG outcomes that can be incorporated into investors' valuation and financing decisions (Mansouri & Momtaz, 2022). Sustainability therefore acts not only as a reputational signal but also as a strategic asset that facilitates access to capital and supports the creation of new markets, where scientific validation and supply-chain transparency become critical requirements for investors and industrial partners (Lüdeke-Freund, 2020).

3. Method

The present work adopts the single case study method with an exploratory and theory-oriented purpose, an approach that proves particularly effective when the objective is to analyze contemporary phenomena within their real-life context, where the boundaries between phenomenon and context are not clearly defined (Yin, 2014). The choice of this methodology responds to the need to capture the complexity of the interactions between technological innovation, institutional legitimization, and financial architectures, variables that could hardly be isolated through standardized quantitative methods (Johnson *et al.*, 2006). Consistent with process-oriented case study research, the aim of the study is not to establish causality in a statistical sense, but to reconstruct the sequence of decisions, interactions, and organizational responses through which hybrid financing arrangements emerge within a specific context. The analytical objective is therefore explanatory and theory-building, seeking analytical rather than statistical generalization (Yin, 2014; Hoon, 2013).

Following the indications of Eisenhardt and Graebner (2007), the case of Futura S.r.l. was selected because of its emblematic nature; it allows the observation of the operationalization of an “integrated finance” model within a research-intensive sector such as FoodTech. The analysis focuses on how these dynamics translate into operational realities within the context of Southern Italy, historically characterized by informational asymmetries and capital gaps, with the aim of understanding the mechanisms through which sustainable ventures mobilize heterogeneous financial resources and transform environmental and territorial constraints into patentable competitive advantages.

The rigor of the research is ensured through the use of multiple sources of evidence, including documentary data, Chamber of Commerce records, chronologies of public funding, and ESG certification protocols, thereby ensuring the data triangulation necessary for internal validity (Patton & Appelbaum, 2003). The triangulation of multiple data sources also allowed the reconstruction of convergent evidence regarding the timing, purpose, and conditions associated with different financing decisions, thereby enhancing the credibility and robustness of the explanatory account (Yin, 2014).

The analysis adopts a longitudinal perspective to reconstruct the venture’s financing trajectory over time and identify the mechanisms through which successive funding events contributed to reducing uncertainty and enabling subsequent resource mobilization. Particular attention was devoted to the sequencing of financing decisions and to the interactions among

public support schemes, debt instruments, and private investment, in order to understand how legitimacy accumulated throughout the venture's development process. More specifically, the study examines the financing timeline to explore how national and regional support measures, guaranteed bank debt, and private investment combined over time into a hybrid funding configuration. Rather than conceptualizing integrated finance as a moderating variable, the analysis interprets it as a dynamic and sequential architecture through which different sources of capital become progressively aligned with the venture's evolving needs and legitimacy requirements. Such a systematic approach is consistent with the need to strengthen the link between qualitative methods and managerial theorization, offering an analysis that is rich, context-sensitive, and capable of capturing the complexity of a strategic orchestration aimed at sustainable scalability (Cornelissen, 2017; Wickert *et al.*, 2021).

4. Empirical evidence: The case of startup Futura S.r.l. as a pathway of “Integrated Finance”

Like a closed-box mechanism, in which outside observers see only the external casing while remaining unaware of the complex internal gears, the Southern Italian financial ecosystem is often labeled according to its structural limitations, determined by dependence on bank credit and the chronic gap in venture capital funds. Yet empirical evidence suggests the emergence of a silent and extremely effective “hybrid model.” Precisely because of the limited presence of large speculative funds, entrepreneurs in Southern Italy cannot afford to rely on a single instrument. On the contrary, in order to ensure survival and scalability, they must implement a complex and carefully calculated process of financial engineering.

The case of Futura S.r.l. is therefore emblematic. It is the chronicle of how, within a compressed timeframe, the entire spectrum of funding sources is combined: equity capital (bootstrapping), triggering measures (Smart Money), national subsidized finance (Invitalia) and regional subsidized finance (Campania Startup 2023), guaranteed bank credit, and a targeted injection of equity from private investments.

4.1 Profile and Value Proposition: Innovation within tradition, the patent asset, and the ESG dimensions

Futura S.r.l. operates through the brands “Pizza Giusta” and “4 Morsi”, and represents a disruptive FoodTech case deeply rooted in Southern Italy, specifically in the Caserta area. Its value proposition moves across particularly challenging terrain: producing and commercializing a highly inclusive frozen pizza – gluten-free, lactose-free, and available in vegan variants – without sacrificing the taste of tradition.

The triggering technological element lies in the use of a sulfur-water-based dough with high hydration levels, as it guarantees greater digestibility, a higher calcium intake, and perfect visual mimicry with wood-fired Neapolitan pizza.

The intuition was subsequently validated and legally protected. Through the funds obtained from the Voucher 3i program, the company initiated the process of protecting its know-how, and although it filed two applications, the true strategic asset that the company ultimately secured and safeguarded was the patent for the sulfur-based dough (Patent No. 102021000025886).

From an ESG perspective, moreover, the company does not merely rely on declarations of intent, but operates according to rigorous protocols. Its social impact has been validated through the acquisition of the “Spiga Barata” mark from the Italian Celiac Association (AIC), the highest guarantee standard for celiac consumers. In addition, the company employs short supply-chain raw materials and is equipped with an advanced supply-chain tracking system accessible to the final consumer through a QR code placed on the eco-sustainable packaging.

4.2 The financing timeline: the architecture of capital accumulation

The capitalization pathway of Futura S.r.l. is not a random sequence of public calls, but rather a form of hybrid funding architecture structured with chronological precision. The construction of this financial architecture followed a logic of progressive risk reduction and accumulation of reputational capital, where each individual funding source was activated according to a specific stage of project maturity. In order to understand the effectiveness of this orchestration, the startup’s financing trajectory may be broken down into the following sequential and interdependent phases:

1. *Triggering Phase – Bootstrapping and Smart Money.* The mechanism begins with an initial share capital of €10,000 (€2,500 paid in) and interest-free loans from the founders. The first public leverage instruments

then act as accelerators: Invitalia's Smart Money measure for the purchase of specialized services and the Voucher 3i program to support patenting expenses for the dough. Subsequently, the Digital Vouchers 4.0 2023 from the Chamber of Commerce of Caserta financed the first instrumental assets;

2. *Scale-Up Phase – National Subsidized Finance*. The paradigm shift occurs through Invitalia's ON – Oltre Nuove Imprese a Tasso Zero measure. Against an industrialization plan worth €1,399,700, Invitalia injected €1,209,840 into the system, of which €1,008,200 consisted of a zero-interest loan and €201,640 of non-repayable grants;
3. *Strategic Debt – Banking Finance*. To cover the private risk share required by Invitalia, in May 2024 the startup finalized an unsecured loan worth €500,000 with UniCredit;
4. *Opening the Safe – External Investments (Equity)*. With the debt structure consolidated, in July 2024 the company approved a capital increase. At this stage, the role of the incubator (012factory S.p.A. Società Benefit) proved crucial: by organizing targeted meetings and leveraging the fiscal incentives and tax deductions available for investments in innovative startups, the company attracted MV2 (MVQuadro S.r.l.). The partner entity therefore contributed liquidity (up to €360,000 for a 15% shareholding) as well as fundamental engineering know-how;
5. *The Research Push – Regional Finance*. In perfect synergy, the startup intercepted the resources of the Campania Startup 2023 call. This non-repayable grant (covering 70% of expenses) was not used for working capital, but for a precise structural objective: the creation of an internal Research and Development laboratory.

Within this architecture, public finance effectively acted as a derisking instrument. The €500,000 loan with UniCredit existed only thanks to the shield provided by the Central Guarantee Fund (MCC), which covered 80% of the amount and unlocked a credit channel that would otherwise have remained sealed in Southern Italy. This cumulative process contributed to the development of organizational legitimacy, which, in turn, facilitated access to increasingly diverse forms of capital.

At the same time, the solid patent base, combined with a validation pathway that includes the already obtained UNI/PdR 125 Gender Equality Certification, as well as the ISO 14001 and ISO 9001 certifications currently under implementation, sent unequivocal signals of reliability to the market, reducing informational asymmetries even before the entry of the private investor.

From an ecosystem perspective, 012factory S.p.A. Società Benefit was not merely a service provider, but the true architect of the operation's financial structure.

From the early phases facilitated by Smart Money, the incubator guided the startup through the management of the so-called “double funding prohibition,” ensuring that the regional funds allocated to the R&D laboratory did not overlap with Invitalia’s national resources. Yet the key move occurred on the private side, as the incubator accompanied the firm through a genuine roadshow, managing negotiations with several industrial entities. By placing the solidity of the project and the leverage of tax incentives for investors on the table, it created the ideal conditions for MVQuadro’s equity entry.

Finally, the ability to attract financial resources became intertwined with ESG-oriented value creation. The true “currency” of Futura S.r.l. was, in fact, the translation of its business model into rigorous ESG metrics:

- Environmental Dimension (E) – Procurement privileges local suppliers such as Olio EVO Mastroberardino and Bioagricert tomatoes. The company is currently implementing ISO 14001 and ISO 9001 certifications in order to reinforce its production processes and reduce the environmental impact of the new plant.
- Social Dimension (S) – The product addresses food vulnerabilities, guaranteed not only through the analyses conducted by the Spanish partner Neatique, but also through the stringent “Spiga Barrata” certification of the AIC. Internally, solidity is certified through the achievement of the UNI/PdR 125 Gender Equality Certification.
- Governance Dimension (G) – The advanced Supply Chain tracking system, accessible through QR codes, eliminates informational opacity between production and final consumers.

Taken together, these dimensions show how the adoption of ESG metrics does not represent an accessory element, but rather a strategic lever capable of strengthening the firm’s credibility and facilitating its access to financial resources. In the Futura case, ESG-related practices were embedded within the financing trajectory itself. Certifications, traceability systems, and formalized governance mechanisms contributed to making the venture’s value proposition observable and verifiable, thereby supporting interactions with heterogeneous providers of capital operating under different risk assessments and decision criteria.

Against this backdrop, the empirical evidence suggests that integrated finance is not simply characterized by the coexistence of multiple funding sources, but by the capacity to align them with the evolving needs and developmental stages of the venture. Public support did not substitute for private investment, nor did private capital merely complement subsidized finance. Instead, each instrument fulfilled a distinct function within a broader financing architecture: grants enabled experimentation and the protection of

knowledge assets, bank debt supported industrialization requirements, while equity investors contributed both financial resources and strategic competences. The effectiveness of the overall trajectory therefore stemmed from the complementarities among these instruments and from their alignment with the firm's evolving resource needs, organizational capabilities, and growth objectives.

4.3 Ecosystem Collaborations and Territorial Impact

The resilience of the “Futura model” lies in the fluidity of its alliances. Initially, scientific validation relied upon the Department of Agriculture of the University Federico II of Naples: a crucial triggering phase for studying dough chemistry.

However, when the project expanded and required a broader international perspective, the startup implemented a strategic switch. For continuous laboratory analyses and for managing a complex internationalization process, the company relied on Neatique, a highly specialized entity based in Barcelona, Spain. This transition marked the evolution from a local hub toward a borderless European expansion logic, where Neatique became the guarantor of both microbiological safety and entry into new markets. On the social front, entry into the AIC Campania network and the acquisition of the “Spiga Barrata” certification further reinforced the ethical commitment toward vulnerable consumer groups.

Within this collaborative context, the Campania Startup 2023 call forced Futura S.r.l. to move beyond a closed operational logic. The most tangible impact of this liquidity injection was the establishment of an internal R&D laboratory, a move that shifted the company's center of gravity from the “assembly of recipes” to the “production of food technology.” At the same time, the synergy with the incubator's technological branch (012Tech) made it possible to develop an advanced short supply-chain tracking software, a “human-centered” system that rendered transparent the path of raw materials from the field to the freezing process.

Moreover, the Futura case dismantles the prejudice of “adaptive behavior,” namely the tendency of certain Southern Italian firms to intercept funds solely for survival purposes. Here, liquidity was not consumed as working capital. The Voucher 3i funds were used surgically to secure the sulfur-based dough patent (No. 102021000025886). This asset was capitalized on the balance sheet under “Intangible Fixed Assets,” transforming public money into competitive advantage and demonstrating genuine value creation.

In particular, Futura's procurement relationships with Mulino Caputo, Mastroberardino, and Sorgenti di Telese constitute a territorial development strategy. The attracted funds were transformed into contracts for the local ecosystem, ranging from MVQuadro's engineering services to 012Tech's IT support and Mar Costruzioni's construction activities. In this sense, the firm does not merely operate within the territory, but actively contributes to its economic structuring, functioning as a catalyst of relationships and value flows. Moreover, this impact is also coherent with the ESG dimension, insofar as the valorization of local suppliers, supply-chain traceability, and attention to certified standards simultaneously contribute to environmental sustainability, social value creation, and strengthened transparency within governance processes.

The case also suggests that the impact generated by integrated finance extends beyond the focal venture and contributes to the reconfiguration of the surrounding entrepreneurial ecosystem. Financial resources were not directed exclusively toward firm-level growth objectives, but were transformed into investments in local supply chains, specialized services, technological capabilities, and collaborative relationships. In this sense, the value generated through hybrid financial architectures appears to be distributed across a broader network of actors, reinforcing the ecosystem's absorptive capacity and future innovation potential (Autio *et al.*, 2018; Stam, 2015). At the same time, the findings indicate that embeddedness and openness should not be interpreted as alternative strategic orientations. Futura's development trajectory combined strong territorial anchoring with the selective activation of extra-local partnerships, allowing the venture to access complementary knowledge, specialized expertise, and international opportunities without weakening its local roots. The collaboration with Neatique exemplifies how sustainable ventures may achieve scalability by connecting local legitimacy and production capabilities with transnational networks of validation and market expansion.

Viewed through this lens, sustainable scalability appears to depend not solely on securing larger volumes of capital, but on the venture's ability to convert financial resources into relational, technological, and territorial assets capable of reinforcing both organizational competitiveness and ecosystem development.

5. Conclusion and Implications

The analysis of the Futura S.r.l. case contributes to ongoing debates in sustainable entrepreneurship by illustrating how access to hybrid financial

architectures is shaped not only by the availability of resources or the intrinsic quality of technological innovation, but also by ventures' ability to align with evolving societal expectations surrounding sustainability. Consistent with studies emphasizing the importance of legitimacy for entrepreneurial resource mobilization (Suchman, 1995; DiMaggio & Powell, 1983), the findings suggest that sustainability-related expectations become financially consequential when they are translated into organizational practices that external audiences can recognize and evaluate. Integrated finance therefore emerges as a process through which measurable sustainability commitments progressively support access to heterogeneous sources of capital.

The empirical evidence further supports prior research highlighting the strategic role of transparency and accountability in sustainable entrepreneurship (Binder & Belz, 2015; Muñoz & Cohen, 2018). In the Futura case, impact reporting, certifications, intellectual property protection, and collaborations with reputable intermediaries did not constitute peripheral activities aimed at reputation management. Instead, they functioned as mechanisms through which entrepreneurial claims were substantiated and uncertainty reduced. The ability to transform entrepreneurial vision into verifiable ESG practices and protected intangible assets, such as the sulfur-based dough patent, enabled stakeholders to assess venture quality through observable indicators of commitment, reliability, and growth potential.

At the same time, the findings extend existing literature by refining the relationship between social norms, legitimacy, and entrepreneurial finance. While previous studies have shown that social norms shape perceptions of appropriate organizational conduct (Horne & Mollborn, 2020; Ody-Brasier & Vermeulen, 2020), the present study suggests that their influence on financing outcomes is indirect. Social norms contribute to defining the evaluative criteria through which investors, intermediaries, and institutional actors interpret sustainability claims and allocate resources. Legitimacy thus appears less as a static organizational attribute and more as an evolving accomplishment that develops throughout the venture's growth trajectory.

From an entrepreneurial finance perspective, the findings also nuance existing understandings of hybrid funding arrangements. Rather than viewing integrated finance simply as the coexistence of multiple funding sources, the case illustrates how different instruments fulfil distinct functions at different stages of venture development. Grants supported experimentation and capability building, debt facilitated industrialization, whereas equity investors contributed both financial resources and complementary competences. The effectiveness of hybrid architectures therefore depended

not merely on diversification itself, but on the alignment between financing instruments, organizational maturity, and evolving resource requirements.

Collectively, these findings integrate insights from sustainable entrepreneurship, institutional legitimacy, and entrepreneurial finance into a process-oriented framework explaining how sustainable ventures mobilize resources under conditions of uncertainty. Although derived from a single case study, this interpretation offers a theoretically informed lens through which similar dynamics may be explored in other sectors and institutional contexts beyond FoodTech.

The findings also contribute to a broader understanding of the challenges faced by innovative startups. Prior studies have shown that entrepreneurial ventures often struggle not only with resource constraints but also with the development of managerial capabilities, the acquisition of strategic knowledge, and the ability to navigate increasingly complex support ecosystems (Passaro *et al.*, 2017; Passaro *et al.*, 2020). In this respect, the Futura case suggests that startup growth depends on more than the availability of financial resources. The presence of intermediaries capable of facilitating learning processes, connecting entrepreneurs with relevant stakeholders, and supporting the interpretation and combination of available opportunities may substantially influence the venture's capacity to scale. The ability to orchestrate relationships, acquire legitimacy, and progressively align financing choices with organizational development therefore emerges as a critical capability for innovative startups operating under conditions of uncertainty.

From the perspective of managerial implications, the study offers several operational indications for business decision-makers and actors within innovation ecosystems. First, there emerges a need for management to develop specific competencies in hybrid financial orchestration. Founders must not limit themselves to product management, but must be capable of navigating the sequentiality of funding sources, understanding how public capital may function as a catalyst for the derisking of private equity operations (Mazzucato, 2013). This suggests that founders should actively plan financing trajectories rather than individual fundraising rounds, combining grants, public incentives, incubator programs, impact investors, and private equity according to the firm's stage of development. In doing so, entrepreneurs should also view incubators, competitions, and support programmes not merely as sources of funding, but as learning environments through which strategic capabilities and relational resources can be developed (Passaro *et al.*, 2017; Passaro *et al.*, 2020).

Second, managerial practice must orient itself toward a “governance of transparency.” The implementation of traceability systems based on digital

technologies and the pursuit of high-profile certifications, such as gender equality or ISO environmental standards, become strategic levers for reducing the cost of capital. For the contemporary manager, this implies integrating ESG dimensions not as accessory communication elements, but as pillars of the value proposition capable of reinforcing competitive positioning and facilitating internationalization. Managers should therefore invest early in impact measurement systems, ESG reporting practices, traceability technologies, and certification processes that can provide verifiable information to investors and strategic partners. Finally, the role of external collaborations and incubator intermediation must be understood as a structural function for scalability; the manager must act as a network orchestrator, capable of connecting local scientific know-how with global distribution and analytical networks, thereby transforming the firm into a catalyst of both territorial and international value (Autio *et al.*, 2018).

From a policy perspective, the findings highlight the importance of public support in strengthening the FoodTech startup ecosystem. In particular, public funding schemes can play a catalytic role by reducing the financing constraints associated with high capital requirements, long commercialization horizons, and regulatory uncertainty. The case also suggests that policymakers should design support programs that not only provide financial resources but also encourage collaboration among startups, investors, research institutions, and industrial partners through networking activities and partnership-oriented call requirements. Furthermore, policy interventions can foster sustainable entrepreneurship by promoting the adoption of measurable sustainability practices and impact metrics, thereby facilitating access to sustainable finance and enhancing the scalability of innovative ventures.

From a methodological perspective, the study confirms that case-based research remains a fundamental tool for understanding emerging managerial phenomena that cannot be fully captured through standardized indicators (Reinecke *et al.*, 2016). The ability to reconstruct the processes of reputational and technological capital accumulation made it possible to identify a development model that integrates local roots with international ambitions. Despite the limitations intrinsically linked to the statistical generalizability of a single case, the work offers a basis for future research aimed at testing these dynamics through comparative or multi-actor designs (Hoon, 2013). While the empirical evidence is drawn from the specific context of Southern Italy, the mechanisms identified may be relevant for other entrepreneurial ecosystems characterized by limited access to venture capital, high innovation uncertainty, and strong reliance on public support and collaborative networks. Future research could test the transferability of these findings through comparative case studies or larger-scale quantitative analyses.

Thereby, future research may investigate whether the legitimacy-building trajectory identified in this study characterizes sustainable ventures operating in other sectors and institutional contexts, thereby assessing the transferability of the proposed interpretative framework through comparative and multi-case designs.

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From Undertourism to Destination Repositioning through Multi-Level Governance. The Case of the Marche Region (Italy)

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Abstract

The COVID-19 pandemic has accelerated a shift in tourism toward undertourism destinations, where travelers seek authentic experiences and deeper engagement with local resources and landscapes. Within this context, the present study examines how collaborative networks involving public and private actors can leverage undertourism as a strategic opportunity for destination repositioning. Focusing on the Marche Region (Italy), the research adopts a qualitative case study approach based on semi-structured interviews with key informants. Qualitative analysis and coding of the interview data revealed five types of networks that underpin the strategic and operational architecture of the region's tourism and cultural sector: public-private, intra-sectoral, inter-sectoral, cross-territorial, and industry-community networks. The findings indicate that sustainable competitiveness depends on integrating diffuse territorial assets through multi-level governance, addressing infrastructural gaps, and enhancing community wellbeing. They further suggest that successful destination repositioning requires a shift from traditional competition to “coopetition”,

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together with the need for new professional roles capable of orchestrating development processes and managing fragmented resources.

Keywords: Undertourism; public-private collaboration; destination competitiveness; sustainability; authenticity; multi-level governance.

Sommario

Il COVID-19 ha accelerato un cambiamento nei flussi turistici verso destinazioni caratterizzate da *undertourism*, nelle quali i viaggiatori cercano esperienze autentiche e un maggiore coinvolgimento con le risorse locali e il paesaggio. In questo contesto, lo studio analizza come le reti collaborative tra soggetti pubblici e privati possano valorizzare l'*undertourism* come opportunità strategica per promuovere il riposizionamento di una destinazione. La ricerca si focalizza sul caso della Regione Marche (Italia), adottando un approccio qualitativo basato su interviste semi-strutturate a informatori chiave del settore. L'analisi qualitativa e la codifica delle interviste hanno permesso di individuare cinque tipologie di reti che costituiscono l'architettura strategica e operativa del settore turistico-culturale marchigiano: reti pubblico-private, reti intra-settoriali, reti inter-settoriali, reti trans-territoriali e reti settore turistico-comunità. I risultati rivelano che la competitività sostenibile di una destinazione dipende dall'integrazione delle risorse diffuse sul territorio attraverso una governance multilivello, in grado di colmare i divari infrastrutturali e di garantire il benessere della comunità locale. Lo studio evidenzia, inoltre, come un riposizionamento di successo richieda il passaggio da una logica competitiva tradizionale alla "coopetizione", nonché l'introduzione di nuove figure professionali capaci di orchestrare i processi di sviluppo e di gestire risorse frammentate.

Parole chiave: Undertourism; collaborazione pubblico-privata; competitività della destinazione; sostenibilità; autenticità; governance multilivello.

1. Introduction

After the COVID-19 pandemic, the tourism sector has undergone profound transformations, marked by evolving tourist preferences and increasing demand for sustainable and experiential offerings (ETC, 2022; Goncu & Kamasak, 2024; Sageena & Kumar, 2025). In some instances, travelers are progressively moving away from overcrowded and standardized destinations toward lesser-known locations that promise authenticity, meaningful engagement, and closer connections with local communities (Blázquez-Salom *et al.*, 2023). The concept of undertourism captures this redirection of tourist

flows toward small towns, inland areas, and niche destinations that were previously marginal within mainstream tourism circuits. This shift aligns with a broader notion of cultural tourism that has emerged over recent decades – one no longer exclusively focused on traditional “art cities”, but extended to the multifaceted culture of a place. Cultural tourism is thus conceived as an integrated mix of elements: art, monuments, and historical centers, but also gastronomy, craftsmanship, natural landscapes, and slow-tourism itineraries (e.g., cycling and trekking). Given this multidimensionality, recent literature has introduced the concept of cultural landscape tourism (Montaguti & Meneghello, 2018; Cerquetti *et al.*, 2019), characterized by the integration of diverse elements that collectively shape territorial identity.

In this regard, even before the COVID-19 pandemic, at the European level, policymakers and regional Destination Management Organizations (DMOs) have rediscovered villages and small towns as models of sustainable tourism able to promote psychological well-being and enhance local cultural identities (Battaglia, 2018). In line with this trend, the Italian policy framework has evolved significantly with the National Recovery and Resilience Plan (NRRP), which identifies the revitalization of small historical centers as a structural priority. Specifically, the *Bando Borghi* (Investment 2.1, Mission 1, Component 3 – Attractiveness of Villages) represents a milestone in this strategy, allocating over one billion euros to support the economic and social regeneration of villages through “Lines A and B” of funding. This initiative represents a qualitative leap from previous strategies, such as the National Strategic Tourism Plan 2017–2022 or earlier programs like *Cammini d'Italia* (2016) and *Borghi* (2017), shifting the focus toward a systematic, culture-led regeneration approach. The current strategy aims to transform these inland and peripheral areas into smart villages by integrating digital innovation, sustainable mobility, and heritage enhancement. The effective implementation of these NRRP-funded interventions is designed to enhance the quality of cultural and tourism offerings, meeting the increasing demand for cultural landscape experiences. By fostering local entrepreneurship and community-based services, these measures aim to counter depopulation and contribute to the long-term economic and social revitalization of the Italian territory.

A key driver of destination competitiveness and long-term sustainability is the ability to design cohesive networks among several different territorial actors. Indeed, while experiential tourism provides a concrete pathway for activating authenticity and co-creating value in undertourism destinations, its implementation depends on multi-level governance and network-based coordination among public and private actors (Farmaki, 2020). Supportive institutional frameworks, targeted funding mechanisms, and collaborative

networks play a crucial role in enabling innovation and enhancing destination competitiveness. Despite their growing relevance, the extent to which undertourism can be strategically leveraged as a development opportunity – rather than merely a structural condition – remains underexplored in the literature, particularly regarding how governance arrangements and multi-stakeholder networks contribute to destination competitiveness.

Addressing this gap, the present study examines how collaborative networks involving public and private stakeholders can leverage undertourism as a driver of destination repositioning. To this end, it addresses the following research questions:

RQ1. How can collaborative networks between public and private stakeholders shape and implement tourism development strategies in undertourism destinations?

RQ2: Which governance mechanisms and multi-stakeholder dynamics are necessary in transforming undertourism from a structural constraint into a strategic development opportunity?

To achieve this goal, the research adopts a qualitative case study methodology focusing on the Marche region (Italy), a representative context characterized by diffuse heritage within undertourism dynamics. Data were collected through semi-structured interviews with key informants (KIs) representing strategic stakeholders, including trade associations and public administrators.

The paper is structured as follows: Section 2 presents the theoretical framework; Section 3 outlines the research design; Sections 4 and 5 analyze and discuss the empirical findings; Sections 6 and 7 highlight managerial and policy implications, as well as future research directions.

2. Theoretical framework

2.1 Undertourism from structural constraint to strategic opportunity

In recent years, the concept of undertourism has emerged within tourism studies as a significant counterpoint to overtourism, gaining increasing attention particularly in the aftermath of the COVID-19 pandemic (Trono *et al.*, 2022; Barač–Miftarević, 2023; Mahendru *et al.*, 2024). While overtourism addresses the negative externalities associated with excessive visitor concentration (Dodds & Butler, 2019; Milano *et al.*, 2019), undertourism refers to the opposite condition, broadly defined as a situation in which tourism demand falls well below a destination's carrying capacity (Pai *et al.*, 2024).

As noted by Barač–Miftarević (2023), overtourism and undertourism should be understood as interconnected phenomena that are increasingly inevitable in an era characterized by globalization, growing mobility, and changing tourist expectations (Milano & Koens, 2021).

In its primary sense, the concept of undertourism is associated with negative economic implications arising from insufficient tourist flows, particularly in destinations that remain marginal within dominant tourism circuits and experience significant underutilization of accommodation capacity. Drawing on the emerging literature, it can be conceptualized through five main interconnected dimensions:

- *Spatial peripherality*: the undertourism phenomenon predominantly affects destinations situated outside mainstream tourism circuits, such as small towns, rural areas, and peripheral regions (Garau, 2015; Lucarno *et al.*, 2020);
- *Institutional weaknesses*: undertourism destinations frequently suffer from inadequate planning, mismanagement of destinations, and a lack of coordination among stakeholders (Séraphin *et al.*, 2020);
- *Demand insufficiency*: in undertourism destinations, the tourism demand is chronically lower than the territory's potential and actual carrying capacity, attracting few or no tourists at all (Mihalič, 2020; Mihalič & Kuščer, 2019; Pai *et al.*, 2024);
- *Accommodation underuse*: as a direct economic consequence of low demand, undertourism destinations experience a significant underutilization of local hospitality infrastructure and accommodation capacity, which severely hinders local economic viability (Milano *et al.*, 2019);
- *Temporal/seasonal volatility*: undertourism is not a transitory condition limited to periods of crisis or disaster, such as the COVID-19 pandemic, but can manifest as a structural or seasonal phenomenon that challenges long-term destination stability (Pai *et al.*, 2024).

Beyond its descriptive dimension, undertourism is increasingly interpreted as a strategic opportunity for destination repositioning. Fletcher *et al.* (2019) conceptualize undertourism as a process aimed at enhancing the resilience of vulnerable territories through targeted tourism development. In this perspective, undertourism reflects a broader shift in tourist behavior, as growing awareness of the drawbacks of mass tourism encourages some travelers to seek alternative, less congested destinations (Blázquez-Salom *et al.*, 2021).

Emerging and lesser-known destinations tend to promote themselves by emphasizing local narratives, cultural identity, community life, and place-based values, rather than relying solely on standardized or image-driven representations (Biagiotti, 2019). From a managerial standpoint, this shift is

framed as an intentional development pathway aimed at redistributing tourist flows and enhancing the visibility of overlooked territories (Gowreesunkar & Vo Thanh, 2020). Ultimately, this transition calls on destination managers and policymakers to move beyond growth-oriented paradigms toward value-oriented approaches that prioritize experiential quality, sustainability, and local well-being, and consider key relationships and evolutionary dynamics among various actors at multiple levels (Baiocco *et al.*, 2023).

In this sense, undertourism should not be interpreted as a structural condition reflecting weak competitiveness, but rather as a strategic framework through which destinations can redefine their positioning while avoiding the pitfalls traditionally associated with mass tourism (Horlings, 2015; Higgins-Desbiolles, 2020). Within this reorientation, the capacity of destinations to generate value increasingly depends on intangible and place-specific resources, among which authenticity and experientiality emerge, respectively, as strategic assets and mechanisms for a destination's sustainable competitiveness (Butler, 2017; Chen *et al.*, 2020; Zhou *et al.*, 2022; Yi *et al.*, 2025). However, authenticity becomes tangible, lived, and economically productive through deliberate experience design and active visitor engagement (Pine & Gilmore, 1999).

Authenticity enables destinations – especially small, peripheral, and heritage-rich areas – to position themselves within high-value, experiential tourism markets. Experiential marketing, in turn, provides a practical approach for translating local cultural and social resources into distinctive tourism propositions (Schmitt, 1999; Pencarelli, 2019).

However, the successful implementation of experiential tourism depends on coordination among destination stakeholders. Fragmented or poorly aligned experiences risk undermining authenticity, coherence, and the overall destination image (Litavniec *et al.*, 2021). Crucially, transforming undertourism from a structural liability into a deliberate strategic opportunity requires shifting from fragmented initiatives to multi-level stakeholder networks (Barač-Miftarević, 2023). The effectiveness of these strategies depends on how regional tourism actors – both public and private – coordinate resources, align narratives, and implement innovation-oriented governance approaches. As demonstrated by Pinto *et al.* (2025) in their analysis of tourism-dependent regions, the governance of peripheral areas demands institutional coordination to overcome localized constraints and fragmented networks. Within this framework, network-based collaboration becomes the foundational mechanism to bridge the gap between local communities and institutional stakeholders, facilitating a shared vision that balances regional development with the local residents' quality of life. Consequently, a comprehensive mapping of these relational dynamics is essential to understand

how diversified stakeholders can jointly co-create sustainable tourism outputs.

2.2 Public-private and multi-level collaboration for destination repositioning

Uplifting flows towards lesser-known destinations is of interest not only to private operators but also to public institutions, whose objectives include promoting regional tourism-driven economic growth and local communities' engagement and well-being. Therefore, public institutions often strive to establish collaborations with local private actors to achieve additional value by encouraging investment in key activities. The involvement of all those who live in a destination is of paramount importance, since their lives are ultimately affected by public funding.

In public-private collaborations, public actors act both as rule-setters and contractual counterparts to private firms (Quelin *et al.*, 2019). These partnerships can initiate cascading positive effects on destination competitiveness and ultimately on the well-being of local communities. Therefore, they are increasingly recognized as catalysts for sustainable tourism growth, as they enable destinations to integrate public policy frameworks with the operational expertise of private operators (Pascariu & Dragan, 2006). In contexts characterized by undertourism, where competitiveness depends on leveraging diffuse heritage, multi-level governance is essential for coordinating actors across local, regional, and national scales (vertical cooperation) (Stofelen *et al.*, 2017). Such coordination ensures that strategic directives are translated into integrated, place-based experiences, effectively mitigating the risks of fragmented tourism offerings.

Furthermore, public-private networks can address structural bottlenecks by fostering coopetition – a form of collaborative competition – among local businesses, shifting the local dynamic from a zero-sum game to a shared collaborative advantage (horizontal intra-industry cooperation) (Baggio *et al.*, 2010; Della Corte & Aria, 2016). By working together, public and private stakeholders can create a positive cycle of innovation and resource sharing that directly supports the local economy (Della Corte & Aria, 2016). Ultimately, establishing robust public-private synergies (encompassing both vertical governance and horizontal cooperation) enhances the experiential value and long-term sustainability of marginalized destinations, ensuring that the economic and social benefits of tourism foster both destination competitiveness and collective wellbeing (Pascariu & Dragan, 2006).

The effectiveness of these collaborative frameworks inherently depends

on the complementary deployment of public and private support. From a welfare-theory perspective, public intervention and institutional support are vital for correcting market failures, particularly in rural or undertourism destinations where small enterprises often struggle to secure credit from traditional financial institutions to upgrade their offerings (Fleischer & Felsenstein, 2000). By providing foundational investments – such as infrastructure enhancements, capacity-building programs, and targeted funding initiatives – public actors lower the barriers to entry, establish the regulatory rules of the game, and buffer local stakeholders against environmental risks (Quelin *et al.*, 2019).

However, public funding alone is insufficient to increase a destination's value. Private support and engagement, driven by entrepreneurial agility and market responsiveness, are essential to translate public infrastructure into authentic, experiential tourism products (Pascariu & Dragan, 2006). Private actors provide the necessary operational investments, service innovation, and direct interactions with tourists that define the cultural landscape experience. Therefore, multi-level governance and coopetition serve as mechanisms through which public resources and private entrepreneurial support mutually reinforce one another (Stoffelen *et al.*, 2017). This synergy ensures that public financial intervention triggers private sector investment, transforming latent territorial heritage into a concrete competitive advantage that ultimately fosters the socio-economic well-being of the entire destination (Della Corte & Aria, 2016).

3. Research design

3.1 Research context: the case of the Marche region

The Marche region, located in central Italy along the Adriatic coast, offers a distinctive setting for examining the innovation dynamics of the tourism system from the undertourism perspective. Characterized by a diverse territorial configuration, the region combines coastal destinations, small historic towns, rural hinterlands, and natural landscapes, forming a complex and heterogeneous tourism system. While the coastline attracts significant seasonal tourism, inland and peripheral areas have traditionally been under-visited, making Marche an ideal case to explore strategies for destination repositioning under conditions of undertourism and for leveraging authenticity as a differentiating resource.

Tourism demand has shown steady recovery following the 2016–2017 earthquakes and the COVID-19 pandemic. After a 22% drop in overnight

stays between 2016 and 2018, the sector rebounded in 2019 before the 2020 health crisis interrupted growth. From 2021, arrivals and overnight stays rose consistently, reaching 2.7 million arrivals and 11.4 million overnight stays in 2024 – exceeding pre-pandemic levels¹. Compared with 2022, growth in 2023 was modest (+0.6%), well below the Italian average (+8.5%) and among the lowest overall, surpassing only Sardinia (-3.4%). However, when compared with 2019, the Marche region shows a positive recovery: overnight stays increased by 2.8%, a figure slightly above the national average (+2.4%). Although Marche is not among the regions that recorded the strongest post-COVID increases, such as Lazio or Molise, it performs better than many regions in Southern Italy that have not yet returned to their 2019 levels (ISTAT, 2024, p. 7).

The demand profile remains predominantly domestic (83.8% of overnight stays in 2023) (Ministero del Turismo, 2024, p. 9), yet international arrivals – particularly from Germany, the Netherlands, Switzerland, and Liechtenstein – are recovering (+29% arrivals; +27% overnight stays vs. 2019). This trend reflects a growing preference for less-crowded, authentic, and sustainable destinations, with tourists increasingly seeking slow travel, cultural immersion, gastronomy, and engagement with local communities, aligning with experiential and authenticity-driven tourism patterns.

Seasonality and shorter stays (from 5.34 days in 2017 to 4.38 days in 2023) (Regione Marche, 2024, p. 2) remain structural constraints, concentrating flows in the summer months and limiting the full exploitation of experiential tourism opportunities. In addition, the tourism labor market in the Marche region is characterized by structural heterogeneity, reflected in the significant presence of foreign workers (25.7%), the diversity of age groups represented, and the predominance of part-time employment contracts (52.8%) compared with full-time arrangements (47.2%) (FIPE Confcommercio, 2023). These patterns underscore the need to develop year-round, immersive experiences to extend stays, diversify demand, and enhance the value of marginal destinations, thus ensuring more stable and attractive working conditions.

On the supply side, the Marche region also features a complex and evolving accommodation system. In 2023, compared with 2019, a significant decline was recorded in the number of hotel establishments (-38 units, equivalent to -4.68%) and in the number of available bed places (-3,468, equivalent to -6.21%)². In 2023, 774 active hotels provided 52,421 beds, with lower-

¹ Own elaboration on Marche in Numeri. Turismo, <https://statistica.regione.marche.it/Marche-in-Numeri/Turismo>, 14.06.2026.

² Own elaboration on Marche in Numeri. Turismo, <https://statistica.regione.marche.it/Marche-in-Numeri/Turismo>, 14.06.2026.

and mid-range hotels contracting, while four- and five-star facilities remained stable (Regione Marche, 2024). In contrast, the non-hotel sector expanded sharply (+41% in establishments since 2019), largely due to the formalization of previously informal private accommodations. This growth of flexible, small-scale, and locally embedded accommodations supports experiential tourism, enabling closer interactions with local communities, traditions, and heritage.

The combination of uneven demand, diverse supply, and evolving tourist preferences positions Marche as a dual tourism system, facing coastal overtourism pressures and inland undertourism challenges. This duality makes the region particularly suitable for investigating how regional actors interact to co-create value, redistribute tourist flows, and foster sustainable development across heterogeneous territories.

3.2 Methodology

Building on the theoretical framework outlined above, this research adopted a case study methodology focusing on the innovation dynamics of the tourism system in the Marche region (Italy) to draw insights into how collaborative networks of public and private stakeholders can leverage undertourism as a vehicle for destination repositioning. A qualitative approach was applied to provide a comprehensive understanding of how regional tourism actors interpret and respond to post-COVID-19 transformations from an undertourism perspective.

Data were collected through online in-depth, semi-structured interviews with five KIs, conducted between March and July 2025. The interviews focused on tourism supply and demand trends, actors, governance, collaboration, and policy directions within the touristic ecosystem of the Marche region. Specifically, they addressed the following aspects: evolution of tourism demand; structure and competitiveness of tourism businesses; destination management and territorial marketing policies; training and infrastructure policies; and sustainability and innovation.

As shown in Table 1, the purposive sample included local stakeholders and experts deeply embedded in the region's cultural and tourism governance. The involvement of these KIs enabled the collection of rich, context-specific insights into both the structural challenges and the evolutionary trends of the local tourism ecosystem.

The analysis of interview transcripts was guided by the inductive principles of the Gioia methodology (Gioia *et al.*, 2013) to progress from informant-centric first-order concepts to researcher-centric second-order themes.

However, avoiding the rigid application of methodological templates (Pratt *et al.*, 2020), our final analytical model departs from a strictly linear hierarchy. Because tourism governance and territorial development are highly interconnected phenomena, several second-order macro-themes in our data conceptually bridge multiple aggregate dimensions.

- The analytical process followed a systematic three-stage coding pipeline:
- *First-order concepts*: the transcripts were analyzed inductively to isolate informant-centric open codes. A total of 32 statements directly reflecting the language of the KIs were extracted;
 - *Second-order themes*: through a double-staged coding, first-order concepts were clustered based on conceptual similarities into 11 researcher-centric macro-categories;
 - *Aggregate dimensions*: second-order themes were mapped into transversal themes, encompassing the 5 macro-networks of public and private collaboration analyzed in Section 4.

This approach ensured methodological rigor while remaining faithful to the complex, overlapping realities reported by our informants (Braun & Clarke, 2019).

Table 1: Profiles, sectors, institutional levels, and strategic scope of KIs

ID	Stakeholder	Sector	Institutional level	Scope	Interview duration
1	Tourism business trade association, representative	Private	Local business network	Local business advocacy and destination marketing	17 min.
2	Tourism business trade association, representative	Private	Local business network	Local business advocacy and destination marketing	60 min.
3	Senior policy officer	Public	Regional	Strategic policy-making	50 min.
4	Project manager	Public-private interface	Local-Regional	Place-based regeneration and network implementation	25 min.
5	Museum network, director	Public	Local	Network implementation	63 min.

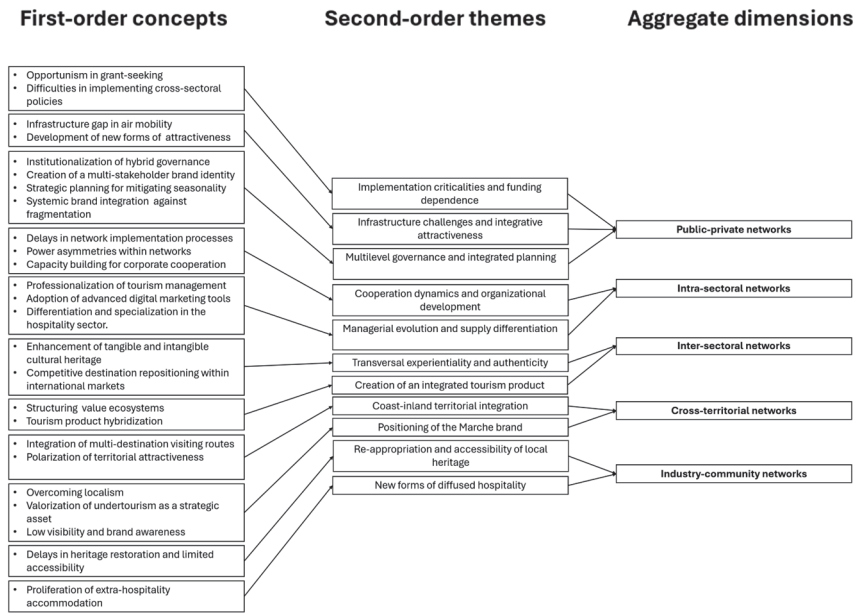
4. Results

The results from the interviews confirm that the Marche region is experiencing a shift in both tourism demand and supply, consistent with the under-tourism phenomenon. In this context, experiential tourism and small-town visitation are emerging as key drivers of regional development. These dynamics are best understood through the lens of relational tourism development, where value is not an intrinsic property of a single resource, but a result of interactions among diverse actors, territories, and sectors. A key finding is that authentic offerings cannot be sustained through isolated initiatives; they require a systemic approach, where resources (e.g., accommodation, cultural offering, mobility, etc.) are embedded within a broader service ecosystem.

Qualitative classification and coding of the interviews led to the emergence of an interpretive framework (Fig. 1) that illustrates how informant-centric concepts (the first column on the left) directly aggregate into broader strategic themes (second column). For instance, operational concerns raised by private sector representatives (KI1, KI2) and local project managers (KI4, KI5) regarding fragmented local resources were combined with the strategic guidelines outlined by regional policymakers (KI3). This process allowed 5 relational networks (third column) to emerge as the strategic and operative architecture of the touristic-cultural sector in the Marche region: public-private networks, intra-sectoral networks, inter-sectoral networks, cross-territorial networks, and industry-community networks.

Taken together, these dimensions suggest that destination competitiveness is not simply a function of resource endowment, but of how heterogeneous actors are able to coordinate meanings, roles, and strategic action across organizational levels and territorial boundaries (Haughland *et al.*, 2011).

Figure 1: Thematic analysis of the semi-structured interviews with KIs operating in the tourism and cultural industries in the Marche region



4.1 Public-private networks

This dimension serves as the strategic “governance frame” for the regional architecture. The institutionalization of hybrid entities, such as Destination Management Organizations (DMOs), is seen as a prerequisite to foster collaboration among diverse stakeholders, bridging the gap between «entrepreneurship, politics, and associations» [KI1]. Beyond coordination, these hybrid entities are fundamental to creating a strong destination identity. The challenge lies in transforming the regional “plurality” into organizational and promotional strength, as the Region is described as «a unique brand [that] at the same time preserves a varied territorial identity» [KI3]. Consequently, public-private synergy should facilitate strategic planning for diffused deseasonalization, ensuring that all measures move «in the direction of a more experiential, widespread tourism, less concentrated on summer seasonality» [KI3]. However, the implementation of this public-private governance model faces implementation difficulties and funding dependence. KI5 highlights a disconnect between strategic policy-making and local execution, where municipalities often engage in opportunistic grant-seeking. This results in «huge

confusion» and overlapping objectives, in which the original strategic intentions often «get lost in project management» [KI5]. A second crucial theme for activating effective governance concerns the infrastructural challenges that the network must address. The infrastructural gap, particularly regarding air mobility, is identified as a structural bottleneck. Respondents noted that the region «should invest a bit more in the airport, which is an extremely important source for tourist connections» [KI1]. To mitigate these physical constraints, the public and private sectors collaborate to develop compensatory attractiveness levers: the network focuses on enhancing the territory's "soft value" and attractiveness to compensate for physical accessibility constraints: «Obviously, one tries to compensate with the attractiveness of the territory, [...] we must be attractive in other ways» [KI2].

4.2 Intra-sectoral networks

While the public-private framework provides the strategic canopy, the intra-sectoral level examines how individual operators coordinate to professionalize the supply chain. Network-building here is described as a latent process that requires significant time to gain institutional legitimacy [KI5]. Furthermore, these networks often suffer from structural imbalances where larger, resource-rich entities may overshadow smaller ones, creating an "asymmetrical" environment that can hinder collective representation: «I really tried to give legs to a network [but] it is a completely asymmetrical network, [...] not representative of a territory» [KI5].

To mitigate these imbalances, respondents highlight the need for capacity building, suggesting that «it would be beneficial to expand training opportunities, increase the number of meetings, and foster interaction among entrepreneurs – potentially by involving well-prepared associations whose core mission includes education as a primary priority» [KI1].

This need for coordination is driving a managerial evolution in the sector. Consistent with studies on the disruptive impact of the sharing economy (Sigala, 2017), traditional accommodation providers are forced to rethink their value proposition.

The interviews suggest that the growth of experiential tourism «pushes traditional accommodation facilities to differentiate themselves [...] offering a series of services, SPAs, greater comforts [...] which tend to generate a virtuous cycle» [KI2] in response to the proliferation of diffused hospitality options. This "upgrading and upselling" process is seen as a vital response to the proliferation of diffused hospitality options.

Ultimately, competitiveness depends on transitioning from amateur or

purely political approaches to data-driven strategies. This requires a profound professionalization of tourism management. Operators recognize that «you cannot delegate to a politician to drive things forward»; instead, the sector must embrace digital tools toward a more data-driven marketing strategy, by «positioning ourselves on Google and [...] using artificial intelligence, to enter people's phones, since that is where we must enter» [KI1].

4.3 Inter-sectoral networks

The third dimension explores the hybridization of the tourism product through cross-fertilization between culture, agriculture, and hospitality. Following the COVID-19 pandemic, a clear shift has been observed: tourists increasingly seek «unspoiled realities» and «authentic places» outside of iconic, over-crowded circuits [KI5, KI3]. Modern vacations now integrate art and sacred circuits with regional excellence, such as the legacy of Giacomo Leopardi or Raffaello: «Today people don't go on vacation just because they want spaghetti and to sunbathe, today people want to see art, sacred circuits, [...] culture» [KI1].

A central theme emerging from the interviews is the transition toward transversal experientiality, whereby object-based authenticity – rooted in original cultural assets – acts as a catalyst for activity-based and existential forms of authenticity, deepening the visitor's sense of meaning (Kolar & Žabkar, 2009). Consequently, in contemporary management, authenticity is no longer just a quality, but a strategic resource for destination differentiation and competitive advantage (Butler, 2017). This shift is particularly crucial for destinations leveraging undertourism in the post-pandemic landscape. The core of this dimension is the integrated tourism product. The findings suggest that a single resource, such as a «simple abbey», only becomes a viable product when inserted into an ecosystem of guides and accommodation [KI2]. This requires a «stitch-by-stitch» approach [KI4] – a meticulous planning process involving farmers, winemakers, and cultural operators. By leveraging both tangible and intangible traditional assets, such as wine and olive oil tourism, the region shifts from a resource-based logic to a system-based logic, in which authenticity serves as an enabling condition that enhances experiential quality and triggers positive behavioral outcomes, such as loyalty and word-of-mouth (Yi *et al.*, 2025).

4.4 Cross-territorial networks

This dimension focuses on the spatial integration between the coast and the hinterland. Data show a significant shift in attractiveness: while coastal tourism remains stable, the hinterland is experiencing a «boom in the search for historic villages» (*borghi*) [KI3]. This is not a zero-sum game but a functional synergy; international visitors often lodge on the coast while seeking «experiential immersion» in the inland villages [KI1]. To succeed, the region must overcome persistent localism and “bell tower” rivalries [KI2]. The Marche brand is increasingly associated with its network of small towns, which serve as a strategic asset for mitigating fragmentation. Strategic effectiveness requires «thinking of ourselves as a unified context» [KI2] and accelerating connection processes [KI1]. By integrating small villages into broader regional circuits, the undertourism characteristic is repositioned as a competitive advantage, offering a more sustainable and visible alternative to saturated destinations [KI3].

4.5 Industry-community networks

The final dimension of the framework examines the industry-community network, focusing on the crucial relationship among tourism development, local identity, and the destination’s social fabric. This dimension moves beyond purely economic transactions to examine how the tourism supply chain integrates with – or, in some cases, disrupts – the life of the local community. A critical challenge is the re-appropriation and accessibility of local heritage. Prolonged closures due to post-disaster recovery pose a risk of “identity discontinuity”, in which the symbolic link between the community and its heritage is broken. As KI5 warns, if assets remain inaccessible, the local «feeling of belonging» is jeopardized. Simultaneously, the proliferation of diffused hospitality (e.g., B&Bs, tourist apartments, etc.) is a «double-edged sword». While it expands the region’s capacity, it structurally alters historic centers, often displacing student populations and traditional residents [KI2]. This dimension emphasizes that a sustainable ecosystem requires a “social return” on heritage and a balance between industry growth and community needs. Tourism must be aligned with residents’ accessibility and cultural continuity to avoid the risks of gentrification and depopulation. Within an undertourism perspective, the focus should shift from tourist satisfaction to the comprehensive enhancement of the residents’ quality of life. In this network configuration, local well-being is not merely a product of tourism activity, but a structural prerequisite: only by ensuring a high quality of life for

residents can a marginalized territory remain an authentic, welcoming, and resilient destination over the long term.

5. Discussion

The five dimensions, emerging from the analysis of the interviews, form a relational and evolutionary architecture (Fig. 2) that enables the Marche region to transition from a structural constraint of undertourism to a strategic opportunity for repositioning (Fletcher *et al.*, 2019; Lucarno *et al.*, 2020). At the foundation of this framework lies the public-private network, which acts as the indispensable “governance canopy”. As highlighted in the literature, both overtourism and undertourism often stem from inadequate planning and a lack of stakeholder coordination (Séraphin *et al.*, 2020). Therefore, the institutionalization of hybrid entities, such as DMOs, is not merely an administrative task but a prerequisite to move beyond growth-oriented paradigms toward value-oriented approaches that prioritize strategic planning and local well-being (Higgins-Desbiolles, 2020).

Within this overarching governance framework, a sequential logic of co-operation emerges, clarifying the paths that both public and private stakeholders can follow to collaborate effectively and turn undertourism into an opportunity. First, intra-sectoral networks are required to professionalize the supply chain and mitigate the “translational ineffectiveness” of public policies. This internal coordination is the first step in safeguarding place identity, ensuring that individual operators can collectively manage authenticity not as a “staged” performance (MacCannell, 1973), but as a professionalized strategic resource (Butler, 2017). Networks of operators – spanning coastal, inland, and extra-hotel segments – play a central role in facilitating innovation, enhancing competitiveness, and improving governance. Coordinated use of funding and resources allows actors to avoid fragmented initiatives and to implement strategic, long-term projects. These findings underscore the importance of combining product innovation (new experiences, offerings) with process innovation (networked collaboration, governance structures) to support sustainable, resilient regional tourism.

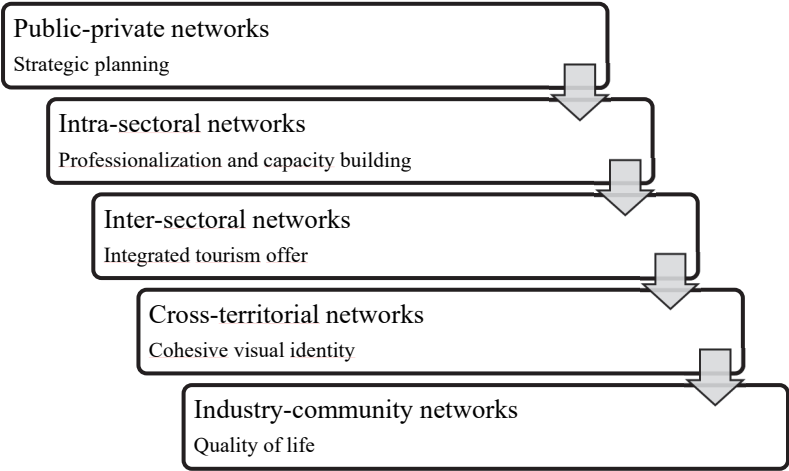
Once internal coordination is achieved, the focus shifts to intersectoral networks, where product hybridization occurs, and the definition of an integrated tourism offer plays a crucial role. This stage is the operational heart of experiential tourism. By integrating culture, agriculture, and hospitality, the region activates object-based authenticity to foster existential authenticity and meaningful engagement (Kolar & Žabkar, 2009). This «stitch-by-stitch» job [KI4] is the practical application of experience design, transforming intangible assets

into a multidimensional “cultural landscape” where value is co-created through the interaction of diverse sectors (Montaguti & Meneghello, 2018). However, for this system to achieve international competitiveness, the cross-territorial dimension becomes the strategic lever for branding.

By functionally linking the coast and the hinterland, the region can effectively redistribute tourist flows – a key managerial goal in undertourism contexts (Gowreesunkar & Vo Thanh, 2020). This synergy allows the region to reposition itself as an “unspoiled reality” [KI3], offering a credible alternative to mass-tourism circuits by leveraging its nature, slow mobility, and authentic narratives (Biagiotti, 2019), towards a cohesive visual identity.

Finally, the industry-community network represents the ultimate condition for long-term sustainability and resilience (Fletcher *et al.*, 2019). This dimension ensures that tourism development does not lead to “identity discontinuity” but remains embedded in the social fabric. As suggested by the theory, hospitality serves as the mediating interface where place identity is negotiated. Only by ensuring a “social return” on heritage and preventing the displacement of residents can the destination maintain the very genuine social interactions that modern tourists seek (Zhu *et al.*, 2025). This relational hierarchy demonstrates that destination competitiveness in undertourism areas is not merely a function of resource endowment. It is a sophisticated process of coordinating meanings, roles, and strategic actions (Haughland *et al.*, 2011), where authenticity acts as the enabler and experientiality as the mechanism to transform a marginal territory into a high-value, resilient destination.

Figure 1: Strategic mapping of the five relational networks and corresponding operational outputs



6. Managerial and policy implications

This study has investigated how collaborative networks can transform undertourism from a structural constraint into a strategic opportunity for destination repositioning. The findings from the Marche region demonstrate that the transition toward a value-oriented tourism model depends on the ability to integrate diffuse heritage, authenticity, and multi-stakeholder governance.

The results of this study suggest that creating bridges among isolated actors is of paramount importance for overcoming the underutilization of resources. Tourism operators should not hesitate to seek synergies with actors in the cultural sector. Additionally, direct competitors should not be feared but rather interpreted as components of a broader cultural tourism landscape, in which the success of one firm will benefit other firms as well. From a managerial perspective, regarding RQ1, the study demonstrates that collaborative networks between public and private stakeholders shape and implement tourism development strategies by driving a necessary paradigm shift for local operators from competition to “coopetition”.

Tourism and cultural operators must move beyond the fear of direct competitors. In an undertourism context, the “competitor” is not the neighboring hotel, but the lack of visibility of the territory. Success should be viewed as a collective outcome where the enhancement of one asset increases the value of the entire cultural landscape. Furthermore, managers should work towards a cross-sectoral hybridization and seek synergies with non-traditional tourism sectors, such as agriculture and craftsmanship, to design “stitched” experiences that protect authenticity while ensuring economic viability.

Concerning governance dynamics, in response to RQ2, the study highlights that the most effective governance mechanisms to transform undertourism into a strategic opportunity rely on network-based coordination, strategic regional guidance, and community engagement. This paradigm shift requires the empowerment of new professional figures acting as network orchestrators or “destination managers” who possess the skills to mediate between public and private interests, manage complex data, and coordinate grant-seeking activities. As for policy implications, policymakers – mainly regional actors – play a crucial role as the strategic governing body of the territorial strategy. First, public intervention must prioritize both physical and digital accessibility (e.g., airport connections and smart-village infrastructure). Policies should incentivize the formation of formal networks that transcend municipal boundaries. Funding mechanisms should reward projects that demonstrate a unified destination identity rather than isolated interventions. To prevent the negative externalities of future growth, policy actions must foster citizens’ engagement. Ensuring that

tourism development enhances the quality of life for residents (not just for visitors) is essential to maintaining the social sustainability of small villages.

7. Limitations and future research

Despite the insights provided, this study is subject to some limitations that open avenues for future investigation. As an exploratory study, the analysis focused exclusively on key informants and supply-side stakeholders and is rooted in the specific socio-economic context of the Marche region. Future research should integrate the demand perspective by investigating how tourists perceive these “undertourism” destinations and whether their expectations of authenticity are met, and adopt a comparative approach by analyzing other Italian or European regions to identify universal versus context-specific drivers of destination repositioning. Given that many NRRP-funded projects are still in the implementation phase, longitudinal research will be necessary to assess the actual long-term impact of these investments on countering depopulation and fostering economic resilience.

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