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

Fabrizio Gritta[*], *Xhimi Hysa*[**], *Rosario Bianco*[***], *Mario Calabrese*[****]

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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.

[*] Lecturer, PhD, Department of Human Sciences, European University of Rome, Email: fabrizio.gritta@unier.it ID ORCID: https://orcid.org/0000-0002-1170-1334

[**] Associate Professor, PhD, Department of Management and Business, POLIS University, Email: xhimi_hysa@universitetipolis.edu.al ID ORCID: https://orcid.org/0000-0002-2279-6690

[***] Extraordinary Professor, PhD, Department of Management and Economics, Pegaso Telematic University, Email: info@rosariobianco.it ID ORCID: https://orcid.org/0000-0002-4470-4670

[****] Associate Professor, PhD, Department of Management, Sapienza University of Rome, Email: mario.calabrese@uniroma1.it ID ORCID: https://orcid.org/0000-0001-5204-2112

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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 underexplored. 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 (Gummesson, 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 (Gummesson, 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 (Gummesson, 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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