ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL

PROFESSIONAL SERVICE CONGLOMERATES AND JURISDICTIONAL COMPETITION: INFLUENCES OF DIGITAL TECHNOLOGIES AND REGULATIONS

Ph.D. THESIS

Berker KÖKTENER

Department of Management

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JUNE 2022

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İSTANBUL TEKNİK ÜNİVERSİTESİ ★ LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ

PROFESYONEL HİZMET KONGLOMERALARI VE YETKİ ALANI REKABETİ: DİJİTAL TEKNOLOJİLER VE DÜZENLEMELERİN ETKİLERİ

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Berker KÖKTENER, a Ph.D. student of ITU Graduate School student ID 403142013 successfully defended the dissertation entitled "PROFESSIONAL SERVICE CONGLOMERATES AND JURISDICTIONAL COMPETITION: INFLUENCES OF DIGITAL TECHNOLOGIES AND REGULATIONS", which the study prepared after fulfilling the requirements specified in the associated legislations, before the jury whose signatures are below.

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To my spouse and parents,

For their endless support and encouragement.

FOREWORD

It gives me a unique feeling to be penning these words. Writing the foreword feels like the final step of a journey that has lasted for years. Perhaps this is the first step on a new path. When I began my Ph.D. study, I did not envision it as another task to be completed but as an experience that I would enjoy and learn a lot. The dissertation should not have been the output of this experience; it should have been me. Looking back today, that is precisely how I will remember my Ph.D. study.

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Berker KÖKTENER
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ABBREVIATIONS

AI	: Artificial Intelligence
ATM	: Automated Teller Machines
BRSA	: Banking Regulation and Supervision Agency
CFO	: Chief Financial Officer
CISA	: Certified Information Systems Auditor
CMB	: Capital Markets Board
COBIT	: Control Objectives for Information and Related Technologies
CPA	: Certified Public Accountant
CT	: Computerized Tomography
FAOA	: Federal Audit Oversight Authority
FDI	: Foreign Direct Investment
GDP	: Gross Domestic Product
IDW	: Institut der Wirtschaftsprüfer in Deutschland e.V.
IFRS	: International Financial Reporting Standards
IMF	: International Monetary Fund
ISA	: International Standards on Auditing
ISACA	: Information Systems Audit and Control Association
IT	: Information Technology
NBS	: National Business Systems
PCAOB	: Public Company Accounting Oversight Board
PSC	: Professional Service Conglomerate
PSF	: Professional Service Firm
RPA	: Robotic Process Automation
SDIF	: Savings Deposit Insurance Fund
SEC	: Securities Exchange Commission
SOX	: Sarbanes-Oxley Act
SPO	: State Planning Organization
TCA	: Turkish Court of Accounts

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PROFESSIONAL SERVICE CONGLOMERATES AND JURISDICTIONAL COMPETITION: INFLUENCES OF DIGITAL TECHNOLOGIES AND REGULATIONS

SUMMARY

This study focuses primarily on phenomena in the broader perspective of the accounting firms' evolution and the role of digitalization and regulations. Accounting firms may grow their size and variety of services over time and evolve from a Professional Service Firm (PSF) into a Professional Service Conglomerate (PSC). Despite their fundamental differences, various professional groups remain in a single organization during this change. How does a PSF transform into a PSC, and what keeps distinct professional groups together? While there is a vast literature on PSFs, the research on PSCs is limited and fragmented. Also the studies are limited in explaining how digitalization plays a role in the transformation of professions and PSCs.

The study has identified three research streams emphasizing different themes: the role of the broader institutional environment, the results of the changing market conditions, and the purposeful strategic actions in becoming a PSC. The research has empirically analyzed a major accounting firm's historical transformation to a PSC over 40 years in an emerging country. The results have noted the critical roles of a particular country's business system and institutional changes in the PSC's organizational context. These factors, such as digitalization and regulatory changes, directly affect the demand for various professional services and their supply, leading to changes in the firm's partnership structure and disciplinary characteristics. In this regard, the contributions to the literature are threefold. First, the study provides a model describing how PSFs transform into PSCs, based on a comprehensive account of how the institutional environment has impacted the focal PSC. Secondly, the study outlines what keeps distinct professional groups inside the organizational boundaries instead of establishing independent professional firms, bringing additional insights to the literature on organizational boundaries. Thirdly, the study develops and analyzes a case study of a leading PSF's transformation into a PSC over 40 years in an emerging country. Lastly, the study calls for further research on the growth and internal organizing factors of PSFs, especially in understudied environments.

In the following section, the study zooms into inter-professional dynamics between established and new professions under digitalization and regulatory changes. Internal tensions arise from disparities amongst the professions that comprise multidisciplinary professional service firms. Prior work has advanced our understanding of how the institutional context intersects professional boundaries and creates jurisdictional conflicts in multi-occupational settings. However, we know little about how regulatory changes impact inter-professional and intra-organizational dynamics between established and new professions at professional service firms. Besides, multi-professional service firms must deal with external pressures, such as increasing digitalization. Advances in digital technologies affect the content and control of work among professions, reshaping established jurisdictions. The importance of digital

technologies is growing for professionals and their organizations. However, there is limited understanding of how this trend affects professions' content and jurisdictional arrangements.

The study explored changes in audit work due to digitalization and how auditors responded to jurisdictional conflicts through boundary work. It analyzed data collected from semi-structured interviews, participant observations, and archival data in a Big Four firm. The findings indicate that new regulations have radical impacts on established jurisdictions. The findings also show that digitalization impacts auditors' critical activities and jurisdictions in the diagnosis and treatment phases, increasing the effectiveness and value of audit work. Accounting auditors can respond to jurisdictional conflicts through different boundary work types for each professional practice act. The study advances our understanding of digitalization's implications on professions. It argues that professions can reduce contestation and increase collaboration through boundary work in the diagnosis and treatment phases. In contrast, professionals' ability to abstract helps them maintain favorable conditions in the inference phase.

Later, the study zooms out and connects the findings with the ongoing debate about how advances in intelligent technologies affect professions and their work. The central argument is about whether such changes will make humans more productive and professions accessible to society or make them obsolete. Current views have two opposing camps. Technology replaces most jobs resulting in long-term technological unemployment, or some jobs resulting in short-term technological unemployment. It will bring prosperity by reskilling labor and creating new jobs in the long term. The study structures the fragmented contributions of prior work by analyzing the implications of technological change through the theoretical lenses of the literature on professions. By bridging the technology and professions literature, the study organizes the critical dimensions to link the previously unconnected concepts and structure current contributions in a novel way. In this manner, the study introduces a theoretical approach that allows studying the implications of technology on professions. Besides, the study argues that technological change will replace professions, create new professions, improve productivity, or make them obsolete. However, it depends on how it affects specific acts of professional practices. Lastly, the study offers directions for future research based on the propositions developed.

PROFESYONEL HİZMET KONGLOMERALARI VE YETKİ ALANI REKABETİ: DİJİTAL TEKNOLOJİLER VE DÜZENLEMELERİN ETKİLERİ

ÖZET

Muhasebe firmaları zaman içerisinde operasyonlarını ve hizmet çeşitlerini büyütebilir ve bir Profesyonel Hizmet Firmasından (PHF) bir Profesyonel Hizmet Konglomerasına (PHK) dönüşebilir. Bu dönüşüm sırasında çeşitli meslek grupları, temel farklılıklarına rağmen tek bir organizasyonda faaliyet gösterirler. Farklı meslek grupları aynı PHK'da bir araya gelirler ve bir arada kalırlar. Bir PHK'daki profesyonel hizmetlerin çeşitliliği, aynı şirkette ikamet eden ve çoğunlukla farklı meslek gruplarının birleşiminin bir çıktısıdır. Her ne kadar bu meslek grupları ayni PHK altinda yer alsalar da, bu grupların uzmanlıkları, ideolojileri, değerleri ve kimlikleri nedeniyle birbirlerinden farklıdırlar. Bununla birlikte, aynı PHK'daki meslek grupları, çoğunlukla bağımsız müşterilere ayrı hizmetler sunar, farklı uzmanlık bilgisine dayalı olarak çalışır ve çok farklı mesleki uygulamalara sahiptirler. Bu farklılıklar bazen meslek grupları arasında gerilimler yaratır. Bir mesleki hizmet sona erebilir, bir meslek grubu PHK'dan ayrılabilir veya meslek grupları arasındaki yetki sınırları çatışmaya açık hale gelebilir.

Bu çalışma, öncelikle muhasebe firmalarının zaman içerisinde PHK'ya dönüşmelerini geniş bir perspektifte ele almaktadır. Bir profesyonel hizmet firması bir profesyonel hizmet konglomerasına nasıl dönüşür ve bu dönüşümde farklı meslek gruplarını bir arada tutan nedir? PHF'ler hakkında geniş bir literatür olmasına rağmen, PHK'ların oluşumu üzerine yapılan araştırmalar sınırlıdır. Ayrıca bu dönüşümde dijital teknolojilerin ve ilgili yasal düzenlemelerin rolünü inceleyen az sayıda çalışma bulunmaktadır.

Bu kapsamda çalışmada, farklı temaları vurgulayan üç araştırma alanı belirlendi: daha geniş kurumsal çevrenin rolü, değişen piyasa koşullarının sonuçları ve bir PHK olma yolundaki amaçlı stratejik eylemler. Araştırma, gelişmekte olan bir ülkede büyük bir muhasebe firmasının 40 yılda bir PHK'ya dönüşümünü ampirik ve tarihsel olarak analiz etti. Sonuçlar, bir ülkenin iş sisteminin kritik rolünü ve PHK'nın örgütsel bağlamındaki kurumsal değişiklikleri ortaya çıkardı. Buna göre dijitalleşme ve düzenleme değişiklikleri gibi faktörler, çeşitli profesyonel hizmetlere olan talebi ve bunların arzını doğrudan etkilemekte, firmanın ortaklık yapısında ve çoklu disipliner özelliklerinde değişikliklere yol açmaktadır. Bu bağlamda çalışmanın literatüre katkıları üç yönlüdür. İlk olarak, çalışma, kurumsal ortamın odak PHK'yı nasıl etkilediğine dair kapsamlı ampirik veriye dayalı olarak, PHF'lerin nasıl PHK'lara dönüştüğünü açıklayan bir model sunmaktadır. İkinci olarak, çalışma, meslek gruplarını bağımsız profesyonel firmalar kurmak yerine, aynı örgütsel sınırlar içinde tutan unsurların ana hatlarını çizerek örgütsel sınırlar literatürüne yeni anlayışlar getirmektedir. Üçüncü olarak, çalışma, gelişmekte olan bir ülkede 40 yıllık dönemde önde gelen bir PHF'nin bir PHK'ya dönüşümüne ilişkin bir vaka çalışmasını derinlemesine analiz etmektedir. Son olarak, çalışma, özellikle yeterince çalışılmamış

bağlamlarda, PHF'lerin büyüme ve iç örgütlenme faktörleri hakkında daha fazla araştırma yapılmasını vurgulamaktadır.

Bunun yanı sıra, dijitalleşme, profesyonel hizmet firmalarının ayırt edici özelliklerini değiştirerek dört büyük denetim şirketi için sermaye yoğunluğunu artırmaktadır. Örneğin dijitalleşme, artan işlem hacimleri, dijital işlem kaydı ve bunlara karşılık gelen dijital denetim araçları nedeniyle, muhasebe denetimlerini teknolojiye daha bağımlı hale getirmektedir. Bilgi sistemleri ve teknolojileri, muhasebe kayıtlarının doğru, adil ve eksiksiz tutulması için kritik hale gelmiştir. Bu nedenle, muhasebe denetçilerinin mesleki yargı yetkisi, sonradan ortaya çıkan bilgi teknolojileri denetim mesleğinin yargı yetkisi iddialarıyla giderek daha fazla sorgulanmaya başlamıştır. Zamanla bu durum daha yüksek düzeyde yetki çatışmasına ve meslekler arası işbirliği ihtiyacına yol açmıştır.

Bir sonraki bölümde, çalışma, dijitalleşme ve düzenleyici değişikliklerin etkisi altında yerleşik ve yeni meslekler arasındaki dinamiklere odaklanmaktadır. İç gerilimler, çok disiplinli profesyonel hizmet şirketlerini oluşturan meslekler arasındaki farklılıklardan kaynaklanmaktadır. Önceki çalışmalar, mesleki sınırların kesişmesine ve çok meslekli ortamlarda yetki çatışmalarına dair anlayışımızı geliştirmiştir. Ancak, düzenleyici değişikliklerin profesyonel hizmet firmalarında yerleşik ve yeni meslekler arasındaki ve organizasyon içi dinamikleri nasıl etkilediğine dair az şey biliyoruz. Öte yandan, çok disiplinli hizmet veren bu firmalar artan dijitalleşme gibi dış baskılarla da başa çıkmak zorundadır. Dijital teknolojilerdeki ilerlemeler, mesleki pratiklerin içeriğini ve kontrolünü etkileyerek yerleşik yetki alanlarını yeniden şekillendirmektedir. Dijital teknolojilerin meslekler ve hizmet firmaları için önemi artıyor olsa da, dijitalleşmenin mesleki pratiklerin içeriğini, yerleşik ve yeni meslekler arasındaki yetki düzenlemelerini nasıl etkilediğine dair anlayışımız sınırlıdır.

Dört büyük denetim firmasından birinde yarı yapılandırılmış görüşmelerden, katılımcı gözlemlerinden ve arşiv dökümanlarından toplanan verilerden yararlanan bu çalışma, dijitalleşme nedeniyle denetim çalışmasının içerik ve kontrolünde meydana gelen değişiklikleri ve denetçilerin sınır çalışması yoluyla yetki çatışmalarına nasıl tepki verdiğini araştırıyor. Bulgular, yeni düzenlemelerin yerleşik mesleki yetkiler üzerinde radikal etkileri olduğunu göstermektedir. Bulgular ayrıca, dijitalleşmenin teşhis ve tedavi aşamalarında denetçilerin kritik faaliyetlerini ve yetki alanlarını etkilediğini, denetim çalışmalarının etkinliğini ve değerini artırdığını göstermektedir. Muhasebe denetçileri, her bir mesleki uygulama eylemi için farklı sınır çalışma türleri aracılığıyla yetki çatışmalarına yanıt vermektedirler. Çalışma, mesleklerin teşhis ve tedavi aşamalarında sınır çalışması yoluyla rekabeti azaltabileceğini ve işbirliğini artırabileceğini ortaya koyarak dijitalleşmenin meslekler üzerindeki etkilerine dair anlayışımızı geliştirmektedir. Buna karşılık, mesleklerin soyutlama yeteneği, onların çıkarım aşamasında kendileri için elverişli koşulları sürdürmelerine yardımcı olmaktadır.

Yapay zeka ve otomasyon gibi dijital teknolojilerdeki gelişmeler, endüstriler, organizasyonlar ve mesleklerde önemli değişiklikler meydana getirmektedir. Dijital teknolojiler yalnızca meslekler arası düzenlemeleri yeniden yapılandırmakla kalmaz, aynı zamanda meslekler ve ilgili teknolojiler arasındaki düzenlemeleri de değiştirir. Bilişsel otomasyon ve yapay zeka gibi son teknolojik değişikliklerin meslekleri nasıl etkilediği konusunda devam eden bir tartışma mevcuttur. Tartışmanın odağında, bu teknolojik değişikliklerin meslekleri daha üretken ve erişilebilir kıldığı mı yoksa meslekleri ikame mi ettiği yer almaktadır.

Son aşamada çalışma, akıllı teknolojilerdeki ilerlemelerin meslekleri ve pratikleri nasıl etkilediğine dair devam eden tartışmalar ile çalışmanın bulgularını birleştirmektedir. Temel argüman, bu tür ilerlemelerin insanları daha üretken ve meslekleri toplum için daha erişilebilir mi kılacağı yoksa meslekleri işlevsiz hale mi getireceği ile ilgilidir. Bu kapsamda mevcut görüşler iki karşıt kampta yer almaktadır. Teknoloji, uzun vadeli teknolojik işsizliğe yol açarak çoğu işin yerini alır ya da kısa vadeli teknolojik işsizliğe neden olan bazı işlerin yerini alır ancak işgücüne yeniden beceri kazandırarak uzun vadede yeni işler yaratıp refah getirir. Bu çalışma, meslekler hakkındaki literatürün sağladığı teorik mercekler aracılığıyla teknolojik değişimin etkilerini analiz ederek önceki çalışmaların parçalı katkılarını yapılandırmaktadır. Çalışma ayrıca, teknoloji ve meslekler literatürü arasında köprü kurmakta, daha önce bağlantısı olmayan kavramları birbirine bağlayarak mevcut teorik katkıları yenilikçi bir şekilde yeniden yapılandırmaktadır. Bu sayede çalışma, teknolojinin meslekler üzerindeki etkilerini incelemeye izin veren teorik bir yaklaşım ortaya koymaktadır. Buna ek olarak çalışma, teknolojik değişimlerin mesleklerin yerini alabileceğini, yeni meslekler yaratabileceğini, mesleklerin üretkenliği artırabileceğini ya da işlevsiz hale getirebileceğini savunmaktadır. Ancak bu durum, teknolojik değişimlerin mesleki uygulamaların kritik eylemlerini nasıl etkilediğine bağlıdır. Son olarak, çalışma, geliştirilen önermelere dayalı olarak gelecekteki araştırmalar için öneriler sunmaktadır.

1. INTRODUCTION

Multiple professions coexist in partnerships among contemporary professional service firms (Greenwood, Hinings, & Prakash, 2017). These firms initially provided accounting audit services, attributing privilege to the accounting profession (Power, 1991; Taminiau & Heusinkveld, 2020). Later, they expanded into adjacent jurisdictions, colonized them, and became multidisciplinary professional service firms (Suddaby & Greenwood, 2001; Greenwood & Suddaby, 2006). Accounting firms may grow their size and variety of services over time and evolve from a Professional Service Firm (PSF) into a Professional Service Conglomerate (PSC). They also become members of an international network. The largest four networks are the Big Four: KPMG, PricewaterhouseCoopers, Ernst & Young, and Deloitte (Brock, Leblebici, & Muzio, 2014).

The 'Big Four' are major professional service firms covering countries and economies worldwide, offering various services. These firms mainly offer accounting, taxation, financial advisory, technology advisory, management consulting, and legal services (Empson, Muzio, Broschak, & Hinings, 2015). Different professional groups such as tax consultants, lawyers, and information technology (IT) auditors reside together, eroding the accounting auditors' dominance in these firms. However, these groups are distinct from one another (Malhotra & Morris, 2009) due to their specialized knowledge (Abbott, 1988) or professional identities (Alvesson, Karreman, & Sullivan, 2015). Tensions emanate from the coexistence of different professional groups within these firms (Abbott, 1988; Abernethy & Stoelwinder, 1995).

1.1 Background of the Problem

How a professional service firm transforms into a professional service conglomerate, and what keeps distinct professional groups together? In this transformation, various professional groups remain together in the same professional service conglomerate despite their fundamental differences. The variety of professional services in a PSC is a matter of the combined footprint of mostly different professional groups residing in the same company (Abbott, 1988; Malhotra & Morris, 2009). Groups of professions are more similar across the different PSCs due to these groups' specialized knowledge (Abbott, 1988), ideologies (O'Mahoney & Sturdy, 2016), values (Fayard, Stigliani, & Bechky, 2017; Wright, Zammuto, & Liesch, 2017), and identities (Alvesson, Karreman, & Sullivan, 2015).

Professional groups in the same PSC offer separate services primarily to independent clients. These organizations function under diverse sets of expert knowledge and employ a variety of professional methods. Naturally, this is not linear growth. Sometimes these differences create internal tensions (Abbott, 1988; Abernethy & Stoelwinder, 1995). An added service may discontinue, making a professional group leave a PSC, narrowing down the service range, and shrinking jurisdictional boundaries (Barrett, Oborn, Orlikowski, & Yates, 2012).

Developments in digital technologies and changes in regulations play an essential role in bringing different professionals together and intersecting previously separate jurisdictions. Besides, digitalization changes the distinctive characteristics of professions and their organizations, increasing capital intensity for the Big Four firms (Kronblad, 2020). For instance, digitalization has made accounting audits more technology-dependent due to increased transaction volumes, digital transaction recording, and the corresponding digital auditing tools (Susskind & Susskind, 2015). Information systems and technologies have become critical for maintaining accurate, fair, and complete accounting records (Appelbaum, Kogan, & Vasarhelyi, 2017). Therefore, accounting auditors' professional jurisdiction has become increasingly challenged by the jurisdictional claims of the emerging IT audit profession. Over time, this has led to a higher level of jurisdictional conflict and the need for inter-professional collaboration (Brown-Liburd, Issa, & Lombardi, 2015; Constantiou & Kallinikos, 2015).

Advances in digital technologies such as artificial intelligence (AI) and automation bring significant changes to industries (Kallinikos, 2006; Schwab, 2016), organizations (Björkdahl, 2020; Gartner, 2021), and professions (Susskind & Susskind, 2015; Kronblad, 2020). Digital technologies not only reconfigure inter-professional arrangements (Barley, 1986; Nelson & Irwin, 2014) but also change the arrangements between professions and related technologies (Brown-Liburd, Issa, & Lombardi, 2015; Susskind & Susskind, 2015; Gresser & Lowenthal, 2019; Armour &

Sako, 2020). There is an ongoing debate about how recent technological changes, such as (cognitive) automation and AI, impact professions. The argument is whether these changes make them more productive and accessible or obsolete (Chace, 2016; Acemoglu, 2017; Reese, 2018; Susskind D. , 2020).

1.2 Reference to Previous Studies

While there is a vast literature about professional service firms, the literature on professional service conglomerates is limited and fragmented (Taminiau, Heusinkveld, & Cramer, 2019). This study identifies three streams emphasizing different themes. The first stream highlights the broader institutional environment's role and the political, economic, and regulatory impacts on PSCs (McKenna, 1995; Wright C. , 2000; Cooper & Robson, 2006; David, 2012). This stream emphasizes the implications of institutional changes on the expansion of PSFs. The second stream focuses on a market-based explanation of PSC formation (Ferner, Edwards, & Sisson, 1995; Greenwood & Suddaby, 2006). This stream emphasizes the responses of PSFs to changing client demands by expanding and proliferating their service offerings. Finally, the third-stream deals with the purposeful strategic actions to explain the colonization process that turns a large PSF into a PSC (Suddaby & Greenwood, 2001; Gardner, Anand, & Morris, 2008). This stream emphasizes the intentional activities of the professional groups to expand and diversify by establishing and legitimating new practice areas.

Previous literature has advanced our understanding of how broader institutional context and technological changes intersect professional boundaries and create jurisdictional conflicts in multi-occupational settings (Barrett, Oborn, Orlikowski, & Yates, 2012). The external forces, such as technological or regulatory changes, may trigger jurisdictional task negotiations and impose tensions between professional groups (Barley, 1986; Abbott, 1988). These forces may also intersect the professional boundaries of different groups and lead them to interact more (Ancona & Caldwell, 1992; Davidson & Chismar, 2007). When a new profession develops jurisdictional claims and interacts more with an existing profession, the latter may strategically respond with avoidance, defiance, and manipulation (Pache & Santos, 2010). The existing profession may also respond with professionalization (Larson, 1979), call the emerging profession as periphery (Allen, 2000), or perform task domain defense (Gray, Hogg, & Kennedy, 2011).

Besides, technological developments affect professions in many aspects. There are two opposing views in general. At one end of the pendulum swing is the argument that intelligent technologies such as artificial intelligence (AI) will displace almost all professionals from professional work. This argument assumes that AI will become more sophisticated over time and can do everything better than professionals, whether complex decision-king or judgmental work (Reese, 2018). Then only professions related to emotions, senses, and social skills would remain until the new generations of AI assume them in the future. Artificial intelligence and automation may have the ability to display emotions, empathy, and intelligence and, as a result, displacing humans from many tasks (Chace, 2016). This prediction includes even complex tasks that require cognitive skills that AI and machines can perform. Therefore, advances in AI and automation displace professionals from tasks rather than creating new jobs.

At the other end of the pendulum, professionals always remain more capable of performing specific activities than AI. While new technologies replace a subset of professionals, they are often complementary and make other professionals more productive by helping to complete routine tasks. AI and automation will replace some routine and non-judgmental work. However, they will also create new and more value-added jobs specific to human sensitivities (Reese, 2018). Economists predict that AI and automation will boost low- and high-skilled professions but displace the middle class. This prediction assumes that automation affects routine rather than non-routine tasks, as non-routine tasks require greater creativity, judgment, and social skills (Susskind D. , 2020). In addition, digital technologies can enable professionals to work more efficiently by automating routine tasks. By doing this, professionals can focus on more complex and value-added tasks. AI and automation can reduce the costs of professional services, making the expertise more affordable for larger groups (Susskind & Susskind, 2015).

1.3 Analytical Framework

Firstly, this study aims to understand how a PSF transforms into a PSC, maintaining diverse professional groups in their organization. The study empirically examines the transformation of a large accounting firm into a PSC in an emerging country. In the research setting, the study investigated one of the Big Four member firms in Turkey, named (pseudonym) ALPHA. Turkey is among the countries that have undergone economic liberalization in the last 40 years (Bayar, 1996; Öniş, 2019). Therefore, this shift leads to a proliferation of PSFs into PSCs and is empirically relevant.

The study takes a historical perspective in developing and analyzing a comprehensive case study of ALPHA covering its 40 years (Clark & Rowlinson, 2004; Amenta & Ramsey, 2010). The study has collected data on the company's past and present, including the constituting professional groups. The data collection has taken nearly two years. The study has participated in internal meetings, studied the company archives, and conducted in-depth interviews with the organization's members. As most of the firm's former members are still alive and traceable, the study has triangulated archival data and in-depth interviews with former and present organizational members. As the study traced the firm's history in the company archives, the study has located and interviewed current and former members.

The study develops a narrative of historical events based on the interview data during the fieldwork. During this analysis, the study has identified significant historical events and followed their causal links to the organization's actors and the institutional context. In analyzing the interview data, the study has performed the first and second-order coding using the constant comparative method (Gioia, Corley, & Hamilton, 2012) to develop a comprehensive understanding of the company during each period. The study has generated the data structure, visiting the relevant historical and theoretical literature in parallel (Locke, 2001; Corbin & Strauss, 2008; Denzin & Lincoln, 2011). This data structure has helped develop and assess the case study.

Secondly, the study focuses on accounting auditors and IT auditors who interact regularly and work together. Traditionally, the accounting profession owns the audit work. However, changes in digital technologies and regulations have changed the accounting profession. Large-scale information systems processing financial data, keeping accounting records, generating financial statements, data analytics tools, and artificial intelligence (AI) applications have become fundamental elements of accounting audits (Brown-Liburd, Issa, & Lombardi, 2015; Appelbaum, Kogan, & Vasarhelyi, 2017; Kokina & Davenport, 2017). Regulators have begun to consider existing auditing techniques inadequate (KPMG, 2016), emphasizing the IT auditors' role. In this context, the study is particularly interested in how existing and emerging professions in the Big Four firms experience reshaping their professional jurisdictions due to digital technologies and regulations. Despite the high volume of literature on major professional service firms (Suddaby, Saxton, & Gunz, 2015; Taminiau, Heusinkveld, & Cramer, 2019; Taminiau & Heusinkveld, 2020), the extant literature on the jurisdictional consequences of technological and regulatory changes overlooks two basic themes.

The understanding of digitalization's implications for existing and emerging professions organized in the Big Four firms is limited. Despite the insights gained in prior studies in other industries, such as healthcare (Barrett, Oborn, Orlikowski, & Yates, 2012; Beane, 2019), the analysis of different multi-professional settings is limited. Nevertheless, professional jurisdictions are disputed and renegotiated in light of new digital technologies in many industries (Kallinikos, 2006), including audit, tax, and consulting (Gendron & Barrett, 2004; Suddaby, Saxton, & Gunz, 2015). Digitalization has significantly impacted the audit of financial statements, previously performed only by accounting auditors. Today, also IT auditors work with them and perform accounting audits to a great extent. The increasing use of advanced digital tools intersects jurisdictions on audit work, making these groups more interdependent. Digitalization and technological changes (Susskind & Susskind, 2015) invite IT auditors and accounting auditors to renegotiate their professional boundaries while increasing collaboration.

Also, we know less about how different professions negotiate boundaries under the influence of digitalization in multi-professional service firms (Pache & Santos, 2010; Taminiau & Heusinkveld, 2020). Prior studies have addressed how professionals perform different types of boundary work. Researchers have primarily studied the enactment of boundary work within established (Heusinkveld, Gabbioneta, Werr, & Sturdy, 2018) or emerging contexts (Bos-de Vos, Lieftink, & Lauche, 2019). However, extant literature does not explain how existing and emerging professions negotiate jurisdictional boundaries when digitalization favors an emerging profession.

Technological innovations play an important role in reorganizing work among different professional groups (Lamont & Molnar, 2002). Reorganizing work leads to conflicts over jurisdictional boundaries between other professions (Abbott, 1988). In such cases, professions respond to these jurisdictional conflicts with different types of boundary work, such as reinstating, bending, and pioneering role boundaries (Bos-de Vos, Lieftink, & Lauche, 2019).

This study examines digitalization's implications for existing and emerging professions in the Big Four firms and their jurisdictional conflicts to address these shortcomings. The study has focused on accounting auditors who have historically dominated independent financial statement audit work. The study has examined the impact of digital technologies on their professional work and their responses to jurisdictional conflicts (Abbott, 1988) with IT auditors. The study explored the effects of digitalization on jurisdictional arrangements between existing and emerging professions in a Big Four firm.

For this purpose, the study analyzed the accounting auditors and IT auditors in a Big Four firm in Turkey. The study collected data from the company for over three years, using participant observation and in-depth interviews. Moreover, the researcher familiarized himself with the IT audit department's establishment and development by analyzing archival data over time. The study categorized the audit work by referring to Abbott's (1988) three professional practice acts to analyze digitalization's impact on the audit profession. While analyzing jurisdictional conflicts, the study categorized accounting and IT auditors' responses with Bos-de Vos et al.'s (2019) boundary work scheme. The study specifically analyzed how professionals respond to jurisdictional changes due to digitalization.

The research setting is theoretically relevant. Because the Banking Regulation and Supervision Agency (BRSA) has forced audit companies to perform accounting audits and IT audits to better audit the accounting environment. As a result of the transition, both professional groups collaborated and integrated their auditing efforts. A new banking law defined new roles and responsibilities for BRSA in 2005 after a series of crises in banking, including the 2001 and 2002 crises and the Imar Bank scandal in 2003.

According to the inspection commission, in the Imar Bank scandal, a consumer bank covertly implemented a double-booking system with ghost accounts for tax fraud, despite the audits taking place for many years. The new law required banks to receive an integrated accounting and information systems audit from an independent audit firm to avoid multiple teams' sampling, integration, and coordination issues. Therefore, the law and related bylaws laid the groundwork for IT auditors' rapid establishment within the professional service firms, creating novel inter-professional dynamics in the auditing companies. While this change allowed the accounting auditors to offer new services, it has also triggered conflicts between accounting and IT auditors inside these professional service firms.

This study aims to advance our current thinking about how intelligent technologies interact with professions drawing from the professions and technology literature. The study bridges the literature on professions (Abbott, 1988) and technology (Acemoglu, 2017). It presents a conceptual integration to reveal broader patterns in this debate (Jaakkola, 2020; Cornelissen, Höllerer, & Seidl, 2021). As the focal point, the study builds on the seminal work of Abbott (1988), explaining the composition of professional work and describing three acts of professional practice: diagnosis, inference, and treatment.

Moreover, the study discusses the implications of technology under two broader categories: enabling technologies and replacing technologies (Acemoglu, 2017). The study then enhances our understanding of the phenomenon of technology's implications on professions by juxtaposing these concepts on a 3x2 table and linking previously unconnected concepts in a novel way. Finally, the study explains the typology of professional practice and technology relationships, offering propositions and directions for future research.

1.4 Contributions

The contributions to the literature are threefold.

Firstly, the study provides a model describing how PSFs transform into PSCs, based on the comprehensive account of how the institutional environment primarily impacted the focal PSC. The study has identified several institutional features and business system characteristics that influence client organizations' demands for professional services. Therefore, the market-driven explanations have more of a mediating role over how institutional changes impact PSCs. Besides, the study outlined what keeps distinct professional groups inside the organizational boundaries instead of establishing independent professional firms, bringing additional insights to organizational boundary literature.

The study has also developed a case study of a leading professional service firm's transformation into a professional service conglomerate over 40 years in an emerging country. Extant research is mostly cross-sectional (Bucheli & Wadhwani, 2014). This study has a longitudinal focus, enables more in-depth explanations, and locates deep-seated institutional influences (Amenta & Ramsey, 2010). While the research on professions and PSFs grow, historical accounts of this phenomenon have had a limited appearance in flagship journals (Kipping & Üsdiken, 2008). The empirical context, as a non-Western country, is also a novelty. Most existing studies are only from Western backgrounds and originate from strongly market-based economic environments (Brock, Leblebici, & Muzio, 2014). The case is fundamentally different from common examples in the literature. However, it may be more similar to other developing countries with strong government influence, providing generalizability to similar contexts.

Secondly, the study makes two main contributions to the research on professions and digitalization. First, the study advances our understanding of digitalization's impact on professions. The researcher explored whether digitalization enables accounting auditors to be more effective (Brown-Liburd, Issa, & Lombardi, 2015; Appelbaum, Kogan, & Vasarhelyi, 2017). It may also replace them with an emerging professions' computer-aided tools from a subset of crucial audit activities (Susskind & Susskind, 2015). The findings show that digitalization can enable existing professions to be more effective in the diagnosis and treatment phases. In contrast, jurisdictional changes in the inference phase can displace existing professions by the threats from emerging professions.

Second, the study contributes by explaining how existing professions deal with jurisdictional conflicts related to digitalization through boundary work (Gray, Hogg, & Kennedy, 2011; Lander, Koene, & Linssen, 2013; Suddaby, Saxton, & Gunz, 2015; Taminiau, Heusinkveld, & Cramer, 2019). The findings show that existing professions respond to jurisdictional conflicts through different boundary works (Bos-de Vos, Lieftink, & Lauche, 2019) for each professional practice act (Abbott, 1988). They can reduce contestation and increase collaboration through boundary work in the diagnosis and treatment phases. At the same time, their ability to abstract helps them maintain the existing jurisdictional arrangements in the inference phase.

Thirdly, the study proposes that enabling technologies increase professionals' productivity and restructure diagnosis and treatment practices, making them more accessible to society in general. For example, legal professionals use algorithms to process large volumes of legal documents, making them more productive and setting aside time for client meetings or problem-solving (Susskind D. , 2020). Another example is video consultations that make professional services more accessible to others (Susskind & Susskind, 2015). The use of enabling technologies also enhances the legitimacy of professions by complementing the inference practices, where professionals often use abstract expert knowledge. For example, IBM's Watson product can complement the inference practices by helping professionals diagnose cancer and even develop treatment plans.

On the other hand, the study proposes replacing technologies to displace a subset of professionals from their diagnosis and treatment practices. However, reskilling others in the same practices makes them more qualified professionals. An example is the constant monitoring of vital statistics, resulting in a decline in jobs for doctors and nurses as many practices will be automated (Chace, 2016).

Besides, using expert knowledge of collected data will require new skills, such as big data analytics (Ross, 2017). Replacing technologies can also trigger jurisdictional conflicts between professionals such as CT (computerized tomography) scanners' technicians and radiologists (Barley, 1986). Finally, replacing technologies can obliterate professions by taking over inference practices such as self-driving cars, making chauffeurs and commercial driving jobs obsolete (Chace, 2016).

1.5 Outline of the Study

The following section discusses the literature on professional service conglomerates' formation despite the tensions between different professional groups and national business systems impacting the business environment in a country where PCSs operate. The study also discusses the implications of digitalization and regulatory pressures on the professions and the boundary work between professions.

Then, the study explains the research methodology, context, research design, data collection process, and analysis. After the methods chapter, two sections outline findings around becoming a professional service conglomerate and digitalization bringing jurisdictional conflict. Later, the study proceeds with a theoretical chapter: implications of digitalization on professional work.

Finally, the study concludes by discussing the findings, their relationship with previous research, and the study's contributions to the literature. The study's limitations and recommendations for future research are at the end.

2. LITERATURE REVIEW

This section discusses the literature on professions and professional service firms and how they have grown into major professional service conglomerates. Secondly, the section discusses how external forces such as national business systems, regulations, and digitalization, have played a role in bringing different professions together. These forces are fundamental in forming multidisciplinary professional service conglomerates. Thirdly, the literature review section discusses the implications of different professions working together and technological change on professions and their practices. Finally, this section elaborates on two method theories to study the implications on professions and their practices.

2.1 Professions and Professional Service Firms

This section discusses the definitions of professions and professional service firms. Also, it discusses how professional service firms grow into professional service conglomerates.

2.1.1 Professions

Professions are occupations that share distinguishing characteristics, such as a body of expert knowledge, membership in a professional organization, and formal training. This collection of identifying characteristics determines the occupations' professional statuses. These trait-based characteristics of professions, on the other hand, are essentially ahistorical and derived from stereotype forms of traditional professionals, such as law or accounting. This definition overlooks what professionals undertake in their daily work to negotiate and protect their unique and privileged occupational statuses (Kirkpatrick, Muzio, & Ackroyd, 2012).

Studies on the sociology of professions have shifted the focus away from the defining characteristics of professions and toward a new debate on how occupations achieve and retain their professional statuses (Abbott, 1988). This shift opened new avenues centering on professionalism as a method of organizing and directing an occupation rather than a distinct occupation endowed with certain static qualities. According to this new approach, occupations retain substantial influence over the definition, execution, and assessment of the professional practices and organizing of these practices in social and economical ways. While external pressures affect professions and organizations, they result from intentional and organized efforts (Kirkpatrick, Muzio, & Ackroyd, 2012). Processes of occupational closure are at the core of such efforts, as professions aim to maximize benefits by limiting access to benefits and opportunities to a smaller group of privileged individuals.

2.1.2 Professional service firms

Professional service firms (PSF) vary from single occupational engineering, legal, or accounting practices to multidisciplinary professional service firms such as the Big Four firm. Professional service firms are generally associated with high knowledge intensity, low capital intensity, and professionalized workforce (Nordenflycht, 2010). However, definitions of professional services firms aim to capture the heterogeneity among these firms while being flexible enough to avoid generalizing distinct characteristics of many professional organizations (Kirkpatrick & Noordegraaf, 2015). In this regard, professional service firms have four defining characteristics, however, to varying degrees: primary activity, knowledge, governance, and identity (Empson, Muzio, Broschak, & Hinings, 2015).

Firstly, the primary activity is applying expert knowledge to produce unique solutions to a client's problems and challenges. This characteristic excludes capital-intensive firms instead of generic knowledge-intensive firms that offer packaged solutions instead of unique ones. Secondly, professionals' technical skills and in-depth understanding of their clients are valuable assets. These assets can be the knowledge accredited by professional associations or acquired about their clients over time. Thirdly, where professionals regulate the ownership of the most valuable assets, governance refers to the broad individual autonomy and management power. This situation gives professionals legitimacy to decide how to apply expert knowledge to unique client solutions. Lastly, professionals must acknowledge each other as professionals. They reach this entitlement by accumulating education, training, accreditations, and reputation. This condition also enables professionals to operate autonomous governance models within professional service firms (Empson, Muzio, Broschak, & Hinings, 2015).

2.1.3 Growing into professional service conglomerates

Colonization is large accounting firms' expansion into adjacent professional jurisdictions and becoming conglomerate PSFs (Suddaby & Greenwood, 2001). Taminiau et al. (2019) identify two distinct research foci on colonization. Firstly, some scholars focus on the implications of colonization for PSFs and society in general. Providing end-to-end services to global corporate clients and benefiting from cross-selling opportunities are two common examples (Greenwood & Suddaby, 2006). However, these implications are not always in the best interest of the PSFs and sometimes cause difficulties. For example, different professional groups within a PSF bring organizational complexities (DiBenigno & Kellogg, 2014) and tensions between them. Secondly, some scholars focus on the main conditions that provide resources to colonization by establishing new practice areas where gaining legitimacy is the key (Gardner, Anand, & Morris, 2008).

Despite the tensions and conflicts, the literature addresses that different professional groups can remain together when there are specific resources (DiBenigno & Kellogg, 2014). These resources are essential to understanding how large professional service firms transform into professional service conglomerates (PSC). Although approaches explaining how large accounting firms change into large PSCs remain limited and fragmented (Taminiau, Heusinkveld, & Cramer, 2019), the study has identified three perspectives.

The first stream emphasizes the role of broader political, economic, and regulatory changes to clarify how a large PSF expands its jurisdictions and becomes a powerful PSC (Cooper & Robson, 2006). This perspective emphasizes how institutional changes allow large PSFs to gain legitimacy for expanding into adjacent territories (David, 2012). For instance, McKenna (1995) studied the coexistence of different professional groups such as engineers, accountants, and lawyers dates to merchant banking. This diversity provided a primary resource for a rapid expansion of consulting after the legal separation of investment and commercial banking in 1933 (McKenna, 1995). Institutional contexts and regulatory changes have implications for the interplay of different professional groups, such as accounting, law, business strategy, and information technology (Wright C. , 2000). This perspective paved the way for the emergence of PSCs.

The second stream focuses on the market-driven explanations for the transformation of large PSFs into PCSs. According to this perspective, the PSFs' transformation into PSCs responds to clients' demands for additional services. In this view, expansion is only professional firms' exploitation of market opportunities, leading to higher profit margins (Ferner, Edwards, & Sisson, 1995). As PSFs use cross-selling opportunities, they provide a full range of services for their clients (Greenwood & Suddaby, 2006). This view also considers the shifts in the professional services market structure (Armbrüster & Kipping, 2002) that trigger the expansion of professional scope and jurisdictional disputes. Therefore, service clients became more demanding of customized services tailored to their needs (Greenwood, Morris, Fairclough, & Boussebaa, 2010). They pushed diverse professionals together at the same firm.

The third stream considers professional groups and their organizations' role in explaining colonization. These actors purposefully and strategically expand their jurisdiction (Suddaby, Cooper, & Greenwood, 2007). Certain intentional activities drive this expansion, such as establishing legitimacy for new practice areas (Gardner, Anand, & Morris, 2008) or commodifying management knowledge for migrating into an adjacent jurisdiction (Suddaby & Greenwood, 2001). Also, the professional groups can define the rules of membership and set technical, legal, or market standards for professional services (Lawrence, 1999). These institutional strategies and professional work (Adler, Kwon, & Heckscher, 2008) equip professional groups with resources for jurisdictional expansion through reproduction or the transformation of institutional structures (Lawrence, 1999; Arnold, 2005).

In addition to these three streams, individual studies explain a PSC's formation and retention of different professional groups in the same professional firm. These studies illustrated how organizational resources, such as firm reputation (Greenwood, Li, Prakash, & Deephouse, 2005) or formal bureaucratic structures (Ferner, Edwards, & Sisson, 1995), act as a "glue" among professional groups, keeping them together. Some other examples are mixing different forms of control and hybridization (Hanlon, 2004; Noordegraaf, 2015) and integrating customer relationship management systems (Greenwood, Morris, Fairclough, & Boussebaa, 2010).

These research streams consider contextual influences and institutional impacts on the focal firms' growth and expansion. However, different country contexts create diverse and distinct economic and social activity patterns, namely national business systems.

Careful consideration of the contextual environment is required to assess how the macro-institutional environment impacts the respective context and better understand colonization in its socio-economic context.

2.2 External Forces Bringing Professions Together

This section discusses the implications of national business systems, regulations, and digitalization on professional service firms and professions.

2.2.1 National business systems

National business systems (NBS) and the complementary institutional regimes have implications on the organization of business associations, professional groups, and the firms' behavior (DiMaggio, 1994). These schemes are inherently different and promote varying organizational arrangements and formations of professional groups. The national business systems are the dominant economic organization and control (Whitley, 1999). These frameworks improve our understanding of institutions' relations and economic and organizational structures (Hotho, 2014).

The national business systems framework proposes six distinct business system types; fragmented, coordinated industrial district, compartmentalized, collaborative, highly coordinated, and state-organized business systems (Whitley, 1999). Whitley distinguished these six ideal business systems in ownership coordination, non-ownership coordination, employment relations, and the linkages with institutional features such as state coordination, financial system, and intermediaries' strength (Whitley, 2000).

In owner-managed firms, the owner-managers can exercise control over economic activities and resources and maintain their firm control without sharing it with other shareholders. Usually, the owners' knowledge of the business is high, and they are directly involved in its management. On the other hand, in alliance-type ownerships, groups of trusted agents control the financial assets and have some management involvement through considerable voting rights. Alliance-type owners often have a significant level of business knowledge. Finally, in-market ownership, the scope of ownership interest is low and focuses on assets' financial return. Shareholders or portfolio managers have a low level of business knowledge and management involvement, making it difficult for shareholders to assess the returns without detailed information about firms (Whitley, 1999).

The business system characteristics relate to dominant institutional contexts distinguishing several institutional features, such as state coordination or financial system. These features are crucial for governing access to critical resources and ownership relations in the business environment. State coordination has three elements. The first element of state coordination is its dominance and willingness to share investment risks with private economic interests. In this case, the businesses become dependent on state policies and actions. The second element is state antagonism to collective intermediaries. The state encourages the establishment of intermediary associations or not. The third element is the extent of formal regulation of markets directly or indirectly, setting constraints on the economic actors' activities (Whitley, 1999).

The financial system is another critical institutional feature in the NBS approach. It describes the extent to which capital is made available and priced. According to this perspective, either capital markets allocate the capital through competition or the state itself and its intermediaries provide the capital directly to the firms. Investors and fund managers have shorter-term interests and trade ownership when offered price premiums in a capital market-based financial system. On the contrary, large banks play dominant roles in credit-based financial systems coordinated mainly by state agencies and ministries. As these capital markets have relatively lower liquidity, the state and banks must involve more in decision-making through administrative processes and develop specific industries (Whitley, 1999).

Any colonization and PSC formation analysis needs to understand the national business system type in the respective country to understand contextual relationships. When a state's role is especially central in the business system, understanding the nature of the state's influence is also critical. Whitley (2005) differentiates between regulatory and developmental states. The latter has three types: dominant developmental states, business-corporatist states, and inclusive corporatist states. The regulatory states establish clear rules of the competitive game where economic decision-making is decentralized, and economic actors pursue their objectives more freely.

On the other hand, developmental states are more active in decision-making and coordinating economic development. Entry into new industries, investing technologies, or guidance to industries steered more centrally. The developmental states may also vary in the involvement of independent associations in policy development. Accordingly, in the dominant developmental states, independent associations only form to act as state agents. In business-corporatist states, these associations have greater autonomy, and they represent monopolies in dealing with state agencies. Finally, in inclusive corporatist states, independent associations' active involvement is more encouraged (Whitley, 2005).

2.2.2 Regulations

Regulatory changes increasingly brought different professions together to interact and collaborate under the same professional service firm. For example, regulations in auditing due to increasing digitalization have laid down conditions for accounting auditors and IT auditors to work together. Accounting auditors look over trial balances and financial statements to ensure "true and fair." On the other hand, IT auditors examine and review an organization's information systems to ensure that data processing is correct, secure, and compliant with the regulatory standards. In this respect, the two professions are different from each other in terms of their specialized knowledge (Abbott, 1988), ideologies (O'Mahoney & Sturdy, 2016), values (Fayard, Stigliani, & Bechky, 2017; Wright, Zammuto, & Liesch, 2017), and identities (Alvesson, Karreman, & Sullivan, 2015).

When different professions must work together, the distinct characteristics can create jurisdictional conflicts over the professional practices. A jurisdiction is a protected area that connects a profession to its activity. By renegotiating and asserting authority over a set of duties, a profession might construct or expand its social closure. Professionals, for example, can monopolize their professional practice by controlling their training or license (Abbott, 1988). Professionals can access resources due to institutionalized organizing, which allows them to occupy specialized expert knowledge bases. Credentials, authority, or training programs in a codified knowledge form have illustrated these resources (Suddaby & Greenwood, 2001). These essential aspects of a traditional profession contribute to social closure on its jurisdiction.

On the other hand, external pressures such as regulations can open or close jurisdictional areas of new or existing professions seeking new grounds and posing challenges to professions (Abbott, 1988). Regulatory changes may disturb existing jurisdictional arrangements for tasks and strengthen or weaken professions (Heusinkveld, Gabbioneta, Werr, & Sturdy, 2018).

Established professions respond to the dangers posed by new professions by employing techniques such as professionalization (Larson, 1979). Alternatively, a more established or higher-status profession may defend its jurisdiction against a new profession by alleging superiority (Allen, 2000). Therefore, the dominant professions may retain control or partly share their jurisdiction with new professions. Alternatively, they may give advisory control over some tasks to create a division of labor in their jurisdiction (Abbott, 1988). Regulatory pressures may prompt boundary work to structure various forms of inter-professional coordination and establish mediation mechanisms to resolve disagreements between professions (Karunakaran, 2018).

Professionals do boundary work in either matured (Heusinkveld, Gabbioneta, Werr, & Sturdy, 2018) or nascent environments (Bos-de Vos, Lieftink, & Lauche, 2019). However, we know less about how different professions in multidisciplinary settings cope with inter-professional dynamics originating from regulatory changes. There are studies on this topic, such as in healthcare. However, there is a research gap in inter-professional dynamics in professional service conglomerates with changing regulations (Pache & Santos, 2010; Taminiau & Heusinkveld, 2020). Regulatory changes affect professions like accounting auditors, consultants, or lawyers in multi-professional service firms (Susskind & Susskind, 2015). These firms restructure inter-professional and intra-organizational dynamics due to contextual changes. As a result, jurisdictional arrangements in PSFs face more complex situations increasingly. There is a research gap on how accounting auditors deal with regulatory challenges to their historically established jurisdictions through boundary work.

2.2.3 Digitalization

The implications of recent advancements in intelligent technologies such as artificial intelligence and automation are named the Fourth Industrial Revolution (Schwab, 2016). Inanimate production systems constituted power from water flows, and steam engines led to the first industrial revolution. The second industrial revolution has inanimated power conversion with the advances of electric grids, electric motors, and internal combustion engines.

Although there is a consensus on the first and second industrial revolutions, there is a debate on the following eras. Advocates of distinguishing between the third and fourth industrial revolutions argue that the advances in electronics and computers entail the third industrial revolution. At the same time, digitalization, AI, and intelligent technologies have led to the fourth industrial revolution (Schwab, 2016). The opposing view argues that the Fourth Industrial Revolution is not a quantum change but an evolutionary outgrowth of the Third Industrial Revolution. Hence the two eras together can be called the Control Revolution since control components of production systems are inanimated (Barley, 2020).

Advances in digital technologies are affecting various industries (Kallinikos, 2006). Shifting from an industrial to a more digital economy (Schwab, 2016) and its ramifications impact societies, businesses, individuals, and professions (Susskind & Susskind, 2015). Digitalization involves the increased use of digital technologies (Björkdahl, 2020), resulting in significant changes to how professions and their organizations create, deliver, and capture value (Gartner, 2021). The growing importance of digital technologies for professional and organizational activities emphasizes the need to explore the relationships among digitalization, professions, and organizations (Constantiou & Kallinikos, 2015; Hinings, Gegenhuber, & Greenwood, 2018; Kronblad, 2020).

Digital technologies play an essential role in reorganizing professional work among different professional groups and reshaping jurisdictional arrangements (Lamont & Molnar, 2002). For example, innovations in medical imaging devices have challenged the traditional roles and relationships between radiologists and radiology technologists (Barley, 1986). Technological developments leading to comprehensive digital technologies may challenge professional autonomy, as examined in the relationship between librarians and Internet searches (Nelson & Irwin, 2014). Technological developments may also create conflicts over symbolic boundaries that shape divisions between employees of different statuses (Vallas, 2001).

Digital technologies have also impacted audit, tax, law, and consulting professions (Susskind & Susskind, 2015) organized in multi-professional service firms. For example, developments in digital technologies have significantly impacted the management consulting industry. As digitalized cognitive templates proliferate, procedures become more codified. Expert knowledge is becoming less abstract and more commodified daily (Brynjolfsson & McAfee, 2014). This trend has made professional services increasingly challenged by new digital technologies, such as artificial intelligence (Susskind & Susskind, 2015).

Similarly, digital technologies have also impacted legal professions (Gresser & Lowenthal, 2019). Digital tools and collaboration platforms have significantly altered legal practices (Susskind & Susskind, 2015). The back-office and document management applications enable the digitalization of legal service delivery (Armour & Sako, 2020). Digitalization alters the characteristics of legal professionals. It makes them less knowledgeable but more capital-intensive (Kronblad, 2020).

Digitalization and its associated challenges in the accounting audit profession are, in fact, not new (Susskind & Susskind, 2015). Accounting auditors adopted spreadsheet software for auditing tasks. They then developed the necessary skills for reviewing computer-based accounting systems. Later, auditors developed computer-assisted techniques to standardize audit processes (Appelbaum, Kogan, & Vasarhelyi, 2017). Simultaneously, client enterprises are required to analyze large transaction volumes and financial data (Brown-Liburd, Issa, & Lombardi, 2015).

Similarly, regulators have considered existing sampling methodologies or computer-assisted techniques inadequate, requiring more comprehensive approaches (KPMG, 2016). Over time, professional service firms have started using more sophisticated computer-aided tools, increasing digitalization in audit work. These changes have emphasized the role of IT auditors (Kokina & Davenport, 2017).

2.3 Implications on Professions

This section discusses how bringing different professions together creates tensions in multidisciplinary PSFs. Also, the section discusses how increasing digitalization affects professions and their work.

2.3.1 Tensions and conflicts between professions

Professional service firms and professions legitimize themselves as the appropriate source of professional knowledge while expanding into new territories. Simultaneously, they de-legitimize other firms and professions, resulting in eventual growth in the scope and the creation of jurisdictional disputes with other firms and professions (Suddaby & Greenwood, 2001).

Tensions between professional groups emanate from differences in expertise, values, shared meanings, or identities, making it difficult for professionals to collaborate and PSFs to grow toward PSCs (DiBenigno & Kellogg, 2014). The theoretical focus in the sociology of professions has been on various kinds of conflicts. Some scholars focus on organizational forms (Abernethy & Stoelwinder, 1995; Dirsmith, Heian, & Covaleski, 1997; Morris & Pinnington, 1998; Bêvort & Poulfelt, 2015) and levels for the bureaucratization of professional work (Barley & Tolbert, 1991). Because these differences in modes of organizing create tensions in PSFs, they limit their transformation into PSCs. Other scholars focus on conflicts that emanate from multi-professional coexistence in PSCs. These are conflicting knowledge management strategies (Morris & Empson, 1998), jurisdictional claims (Abbott, 1988; Wright C. , 2000; Armbrüster & Kipping, 2002), status expectations (Abbott, 1988), and shared meanings (Bechky, 2003) between different professional groups in the same firm. Some scholars focus on conflicts at other levels, such as tensions during their interactions with clients (Kitay & Wright, 2004) or their conflicting internationalization and localization practices (Muzio & Faulconbridge, 2013; Boussebaa, 2015; Faulconbridge & Muzio, 2016).

The professional jurisdictions in PSFs have become more comprehensive (Taminiau & Heusinkveld, 2020). Extant research describes how broader institutional context involving regulatory changes intersects professional boundaries and creates jurisdictional conflicts. There are insights on healthcare (Barley, 1986; Fitzgerald, Ferlie, Wood, & Hawkins, 2002; Barrett, Oborn, Orlikowski, & Yates, 2012; Beane, 2019). However, researchers paid limited attention to other multi-professional settings, such as professional service firms.

2.3.2 Technological change and professions

The transition from an industrial to a digital economy has consequences for society, organizations, professions, and individuals (Susskind & Susskind, 2015). The increasing availability of intelligent technologies (Björkdahl, 2020) leads to substantial changes in how occupations and work create and deliver value (Gartner, 2021). The relevance of intelligent technological change in work practices, professions, and organizations is expanding (Constantiou & Kallinikos, 2015; Hinings, Gegenhuber, & Greenwood, 2018; Kronblad, 2020). However, there is no consensus on whether this technological change displaces humans from jobs resulting in technological unemployment or creating more net jobs in the medium or the long term.

There are two types of technological change. Firstly, substitutional change is the technologies that improve the efficiency and effectiveness of work practices by replacing the existing technologies for the same purpose. These technologies reduce costs, make business more profitable, improve quality, and enable expert knowledge to be more accessible. Secondly, infrastructural change is the technologies that change society's production system. These technologies transform the work practices and occupations as well as demographics, family structures, community relations, and education systems, potentially leading to technological revolutions (Barley, 2020).

While examining intelligent technologies, this study focuses more on artificial intelligence and automation. Artificial intelligence (AI) is the "ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings" (URL-1). AI is the "intelligence demonstrated by machines, as opposed to the natural intelligence displayed by animals, including humans" (URL-2). AI is a broader term we use to define technologies reacting to their environment based on the data they receive. However, the AI has variations, such as narrow and general artificial intelligence.

The narrow AI has three types. First, the classic AI gathers all available variables, evaluates the options, and suggests professional actions. Second, expert systems collect data (i.e., rules, routines, practices) from other professionals' best practices. They recommend the best options when other professionals define certain input variables. Third, the computers consistently gather data about all input variables, conditions, and outputs of a knowledge base in machine learning. They use this large data repository to create rules that maximize the results over time. However, the general AI does not exist now but is potentially more intelligent and adaptable than human computing when responding precisely to new circumstances (Reese, 2018).

Britannica defines automation as the "application of machines to tasks once performed by human beings or, increasingly, to tasks that would otherwise be impossible" (URL-3). Automation is "a wide range of technologies that reduce human intervention in processes. Human intervention is reduced by predetermining decision criteria, subprocess relationships, and related actions — and embodying those predeterminations in machines" (URL-4). "Predetermination" in the definition of automation is a crucial criterion. It emphasizes the distinction between routine and non-routine tasks while examining the effects of technological change on work practices.

However, AI can enable automation to react to the surrounding environment based on big data, potentially flexing the predetermination criterion. In order to do that, accessing large data sets and controlling information is essential for artificial intelligence. Hence, AI and intelligent systems rely on machine learning tools using large data sets to predict complex decision-making problems (Brynjolfsson & McAfee, 2014). While the automation and robotics advances will boost efficiency, they will also cost humans their jobs. On the other hand, big data technology continues to rely on professionals in various disciplines to put its data to practical use (Ross, 2017).

The Luddite movement has debated whether technological change can lead to labor displacement and unemployment. Scholars often argue that while technological change displaces a subset of labor from the work practices, it replaces the labor with better and more value-added work (Clark, 1907). Scholars have also come up with opposing and pessimistic possibilities that the displacement of labor due to technological discoveries may outpace new jobs, resulting in technological unemployment (Keynes, 1963). The economic theory and two hundred years of historical evidence are the main pillars for the argument that technology is not a net destroyer of employment. However, these two pillars might be less valid today (Brynjolfsson & McAfee, 2014). In the following sections, the study discusses whether intelligent technologies will displace humans from jobs resulting in technological unemployment or creating more net jobs from the perspectives of economists and technologists.

2.3.2.1 Economic perspective

Defining several vital concepts such as productivity and displacement effects is essential to understanding economic perspectives on technological change and work. Automation lowers costs and raises productivity by the cost gap between labor and capital in performing activities. Economists argue that the productivity effect is one of the critical motivations of capital owners to invest in AI and automation. In addition, the displacement effect caused by automation is that when activities shift away from labor and towards the capital, labor's marginal product falls. The displacement effect, which lowers the number of jobs, is always negative (Acemoglu, 2021).

Labor share will constantly drop because of the displacement effect, and wages will rise less than proportionally with productivity. Moreover, the pay level may decrease because the displacement effect might be greater than the productivity effect. In case there are several types of work, the same logic indicates that the average wage will decline, even though the wages of some groups would rise. This approach elucidates why automation may result in job losses (Acemoglu & Restrepo, 2019).

Even if automation displaces humans, net production grows. There might not have been a fall in labor demand in the first place if productivity increases from automation were considerable. On the other hand, if AI and automation's productivity effects are minimal, there is too much automation. Recent research reveals that AI activities have increased significantly since 2016, primarily attributed to work displacement. Furthermore, data indicates that businesses that use AI and automation hire fewer people. This observation supports the assumption that emerging AI technologies diminish labor share and human displacement from work activities, especially with minor productivity effects (Acemoglu, 2021).

On the other hand, AI may create new work practices, increasing labor productivity. In this case, the new work practices increase the labor share and net employment. The new work practices may also raise the average pay level. The reinstatement effect indicates that the pay bill grows faster than productivity advances. After all, production processes involve more labor-intensive and non-routine work practices, pushing up the labor share. This thinking explains why pay levels climbed strongly after WWII (Acemoglu & Restrepo, 2019).

After presenting these two scenarios and their possible results, the critical question is how to balance employing AI for displacing labor with automation and creating new work practices. This balance links to the direction of technological change (Acemoglu & Restrepo, 2018). There may be possible distortions influenced by the objectives of leading firms' business models and projections based on economic factors such as productivity effects or policies on labor (Acemoglu, 2021). For example, US firms may have grown overly focused on cost-cutting. The US tax structure imposes a considerably higher marginal tax rate on labor than on capital investments; both incentivize excessive automation (Acemoglu, Manera, & Restrepo, 2020). However, the aspirations of large tech businesses determine the course of AI research. Many of these firms target replacing humans with algorithms, leading them to over-emphasize the use of AI for automation (Acemoglu, 2021).

2.3.3 Technological perspective

According to this perspective, AI will eliminate all work. Let us think we are no different from machines. It comes to reason that a machine could accomplish anything a human could do. Indeed, according to this line of reasoning, computers will surely grow so advanced that they can perform all tasks better than humans (Reese, 2018). Service industry employment is now in jeopardy as computers learn to make cognitive judgments. Many service vocations become obsolete soon due to intelligent technologies and robots. Technology will cause economic decline and deepen social class differences (Chace, 2016). AI research made a breakthrough when computers stopped thinking like humans. Professions utilize more machines and become more competent, resulting in massive job losses. Technological change jeopardizes all occupations, and the pay difference between employments has widened due to automation, which has created inequality (Susskind D. , 2020).

According to the second viewpoint, robots and AI will take over most, if not all, of our occupations. Because animals and robots are fundamentally different, there will be certain human occupations that machines cannot perform. As a result, the mental realm that machines cannot access always protect people. In the future, we will still have plenty of employment with AI. Suppose humans are genuinely distinct from both animals and machines. In that case, logic dictates that we will always be better at some tasks than robots. This scenario generates more employment and replaces or supplements many old occupations with automation. These new occupations will be more sensitive to human sensibilities (Reese, 2018). That also happened when the information revolution first appeared against the order of the industrial revolution (Chace, 2016).

If we approach this debate in more conceptual terms, what type of activities are more vulnerable to technological change? Some scholars have examined the work practices on a two-by-two matrix: routine versus non-routine work and manual versus cognitive work. Their study reveals that routine work practices are more vulnerable to being displaced by AI and automation irrespective of manual or cognitive (Acemoglu & Autor, 2011). The results are compatible with the definition of automation since the definition underlines that the activities for automation should be predetermined. Therefore, what can we argue about the work practices requiring manual versus cognitive abilities?

Roboticist Hans Moravec has observed that "It is comparatively easy to make computers exhibit adult-level performance on intelligence tests or playing checkers, and difficult or impossible to give them the skills of a one-year-old when it comes to perception and mobility" (Moravec, 1988). This paradox proposes that high-level reasoning decreases, whereas low-level sensorimotor skills increase computational requirements (URL-5). This proposition suggests that human labor has a more flexible advantage over AI in physical work than mental work. Developing flexible physical automation is expensive. Hence, today's automation projects often focus on specialized and routine tasks rather than general purposes. On the other hand, intelligent computers have beaten top-performing humans in chess and quiz shows (Brynjolfsson & McAfee, 2014). These developments let us predict that occupations like hairdressers and gardeners are more secure than legal professionals and stock analysts.

AI beating top-performing humans in chess is no big news. However, teams of average-performing humans plus average-AI beat the most robust AI or top-performing humans alone. The superiority of this human plus AI combination, also known as freestyle chess, indicates the importance of valuable human cognitive abilities like ideation, improvising, and inference in non-routine situations (Brynjolfsson & McAfee, 2014). In addition, insights from freestyle chess show that average humans can increase their cognitive abilities with AI and beat top-performing humans. In other words, AI can boost productivity in various cognitive activities that do not need a high level of human judgment and creativity. However, when AI integrates with human cognition, humans may reallocate their time to complex problem-solving activities that require judgment and creativity.

This study defines two categories based on AI and automation's implications on professional work practices: enabling and replacing technologies. Enabling technologies are intelligent technologies that increase the productivity of human labor by boosting manual or cognitive skills, irrespective of their relationship to routine or non-routine tasks. Examples are spreadsheet applications in mathematical calculations, computer-aided design software in ideation, or project management software in organizing. Enabling technologies also help decrease the cost of production or delivery of work, making labor more accessible, like using business communication platforms for remote working.

On the other hand, replacing technologies takes over human labor's work practices and tasks. This intelligent technology displaces humans from processes, making occupations obsolete and professions disappearing. There are several examples of automated teller machines (ATMs) versus bank tellers, switchboard operators versus automated switchboard systems, cashiers versus self-service machines, and taxi dispatchers versus mobility applications. This stud also categorizes intelligent technologies that alter work practices requiring fewer but more qualified labor under replacing technologies, reducing net employment. For example, advances in robotics displaced manual labor from manufacturing processes, creating new jobs for robotics engineers and reducing employment overall.

The economic perspective offers us two different views on the effects of intelligent technologies on employment and gives important clues for the future. Similarly, the technological perspective improves our understanding of what types of tasks intelligent technologies can primarily affect and whether this effect will be enabling or displacing. Although the number of studies addressing these two perspectives is increasing, the literature examining the effects of intelligent technologies on professions is still limited. Current studies focusing on professions often consider professional activities as a whole, while inferring about the future of professions and do not examine professional work practices on a granular basis.

2.4 Method Theories

The study utilizes various literature as the domain theories in the previous sections, such as professions and technology literature. The literature helped the researcher to understand the current perspectives on regulatory and technological changes and their implications on professions and work. In this section, the study uses boundary work and the literature on professions as the method theories. The study sought to advance current regulatory and technological change debates (Jaakkola, 2020).

2.4.1 Boundary work of professions

Inter-professional interactions and boundary-making/crossing patterns are critical in analyzing PSFs. Boundaries are demarcation lines between social structures, organizations, and environments (Lamont & Molnar, 2002; Santos & Eisenhardt, 2005). Social interactions among actors construct demarcation lines that regulate the interactions between actors (Gieryn, 1983). As social interactions create boundaries, the boundaries are not stable or static but open to renegotiation (Bos-de Vos, Lieftink, & Lauche, 2019).

Existing professions respond to threats from emerging professions with specific strategies, such as professionalization (Larson, 1979). Existing professions may also defend their jurisdiction against emerging professions by claiming them as central and holistic while arguing others as periphery and atomistic (Allen, 2000). In this case, a profession may retain control of its holistic jurisdiction and partly share an applicable jurisdiction with the emerging profession (Power, 1991). Alternatively, a profession may provide advisory control over a set of tasks to the emerging profession and form a division of labor that divides jurisdiction into interdependent parts (Abbott, 1988).

External pressures can also initiate boundary work that creates different forms of coordination (Kellogg, Orlikowski, & Yates, 2006) and teamwork (Comeau-Vallée & Langley, 2019). These pressures can intersect various jurisdictions and trigger jurisdictional negotiations between different professions (Barley, 1986) or professionals in an organization (Ancona & Caldwell, 1992). For example, robotic innovations influence pharmacists, technicians, and assistants' boundary dynamics and reconfigure these boundary relations (Barrett, Oborn, Orlikowski, & Yates, 2012). Another example is the increasing interdependency between clinical disciplines at hospitals, triggered by institutional and technological changes (Davidson & Chismar, 2007). Technological changes can also facilitate inter-professional coordination and establish truce structures that address conflicts in jurisdictions between professions (Karunakaran, 2018).

Professions maintain or negotiate their jurisdictions through intentional efforts (Abbott, 1988), called boundary work (Lamont & Molnar, 2002). Bos-de Vos *et al*. (2019) have identified three boundary work types: reinstating, bending, and pioneering role boundaries.

First, *reinstating role boundaries* is a response strategy, in which a profession maintains historically established demarcations by emphasizing its traditional roles and values. For example, accounting auditors could attempt to keep their historically set boundaries and traditional jurisdictions (Power, 1991; Taminiau & Heusinkveld, 2020) against IT auditors. Accounting auditors may undervalue IT auditors' expertise and focus on their roles through different acts of professional work. Although the increasing digitalization challenges established jurisdictions, accounting auditors may attempt to reinstate activities and jurisdictions in line with their designated roles. However, being conservative and challenging the collaboration may also endanger accounting auditors' professionalism, especially when new regulations are under discussion to address the implications of increasing digitalization.

Second, a profession may incrementally change its jurisdiction and traditional task sets. Professions do this to adopt new conditions under external pressures and *bend their role boundaries*. As an example, accounting auditors may attempt to expand their current activities and traditional roles in response to the impacts of digitalization. Accounting auditors may adjust their jurisdictions by performing non-accounting tasks, such as organizing cross-training sessions on information technologies and learning how to use digital technologies. Pressures on audit quality, client demand, and competition with other Big Four firms may have driven this motivation. IT auditors may also negotiate their roles in establishing collaboration with accounting auditors to improve their position in their firms.

Third, *pioneering role boundaries* happen when a profession intentionally and radically reconfigures existing boundary arrangements for stakeholders' benefits. Such accounting auditors and IT auditors may construct new role structures and develop new skills to address the implications of increasing digitalization. In that case, redefining role definitions and activities might help build collaboration between the two professions.

This study examines the regulatory and technological changes' implications on inter-professional dynamics in a PSF. This study analyzes accounting and IT auditors' responses to jurisdictional changes in the audit work process using Vos et al.'s (2019) boundary work approach. In this typology, the three forms of boundary work are reinstating, bending, and pioneering role boundaries. Reinstating role boundaries is a reaction to the need to preserve a profession's historically established demarcations. However, a profession can reconfigure its jurisdiction and traditional tasks to adopt new conditions under institutional pressures, bending role boundaries. Lastly, a profession can reconfigure existing boundary arrangements intentionally and radically with pioneering role boundaries. This lens helped move from informant-centric concepts to more abstract themes and improve understanding of response strategies to institutional pressures.

Prior research has dealt with how professionals pursue boundary work. Researchers have studied this phenomenon primarily in established (Heusinkveld, Gabbioneta, Werr, & Sturdy, 2018) or dynamic contexts (Bos-de Vos, Lieftink, & Lauche, 2019). Studies about how different professions respond to jurisdictional conflicts, especially in the healthcare industry. However, we still know less about jurisdictional disputes and boundary work in multi-professional service firms with increasingly digital environments (Pache & Santos, 2010; Taminiau & Heusinkveld, 2020). Developments in digital technologies reshape the jurisdictional arrangements between professionals such as auditors, consultants, or lawyers (Susskind & Susskind, 2015) in multi-professional service firms. Jurisdictional boundaries are increasingly in flux, and negotiations on professional work have become particularly important. Due to digitalization, we need to understand how established professionals respond to emerging professions challenging their jurisdictions.

2.4.2 Acts of professional practice

Prior literature has indicated that digital technologies can trigger changes in the composition of professional work (Gendron & Barrett, 2004; Brown-Liburd, Issa, & Lombardi, 2015; Susskind & Susskind, 2015). Abbott (1988) has categorized the composition of professional work into three acts of professional practice, corresponding to the critical phases of professions: diagnosis, treatment, and inference.

The first professional practice act, *diagnosis*, comprises analyzing the cause of a situation or problem and framing that against the profession's knowledge base. This action occurs in two steps. First, professionals assemble a picture of the client's context and remove emotional, political, or financial ambiguities by gathering relevant and valid evidence. Second, professionals link the evidence gathered to the professional dictionary to define the problems legitimately. Suppose a profession's standards are more restrictive during diagnostic transformation. In that case, other professions with less stringent rules may threaten the jurisdiction of the restrictive profession by redefining and reconstructing the professional dictionary. In this case, peripheral diagnosis activities become more vulnerable to jurisdictional threats than core diagnostic activities. Since peripheral diagnostic activities are not explicitly defined in the professional dictionary but implicitly claimed within the professional jurisdiction, they become more vulnerable to such threats.

The second professional practice act, namely *treatment*, is another mediating act similar to *diagnosis* and has two steps. The first step, treatment classification, compiles possible treatments for common cases. The second step delivers the treatment to the clients, organized around prescriptions. Treatments are a profession's techniques and toolkits that professionals apply under certain conditions. Like diagnostic activities, if a treatment is too general, its jurisdiction becomes more vulnerable. In contrast, jurisdiction is more defensible when treatment is more specialized.

The third professional practice act is *inference*. Abbott (1988) states that while diagnosis and treatment are mediating acts, the inference is the actual professional act. The inference links diagnosis and treatment and originates from the profession's tacit knowledge and expertise. Professionals move from diagnosis to treatment through judgments, statements, or decisions that are considered valid. Professional jurisdictions are less vulnerable to external threats, in line with their abstraction capabilities in the inference phase. However, much use of inference delegitimizes the profession, and little inference is not professional, weakening professional jurisdictions.

Auditors perform different controls, and they test the internal control environment of their clients based on empirical evidence. This approach helps auditors classify the client's significant accounts and higher-risk areas to frame the audit problem. These practices relate to the professional activities of diagnosis. Auditors rely on financial data obtained from clients to perform diagnostic activities. However, increasing digitalization casts doubt on auditors' traditional methods and how they verify the completeness and accuracy of information provided by clients (Brown-Liburd, Issa, & Lombardi, 2015; KPMG, 2016).

After auditors assess a client's internal control effectiveness, they proceed with substantive evidence-gathering activities as a treatment act. These actions commonly include verifying accounts by sending confirmation letters to third parties, collecting original documents, vouchers, and data, and making physical observations such as stock counts. Auditors do not perform substantive testing to verify all client accounts; instead, they apply randomized sampling methodologies. Typically, accounting auditors use their industry and client knowledge to apply professional judgment in assessing risks and planning evidence gathering (PwC, 2013). However, with increasing volumes of transactions generating large amounts of financial data, regulators have started questioning the sampling techniques performed in audits (Susskind & Susskind, 2015).

Accounting auditors increasingly collaborate with IT auditors in diagnosis and treatment activities due to the digitalization of audit work (Kokina & Davenport, 2017). In this way, for example, they can utilize advanced data analytics tools (Appelbaum, Kogan, & Vasarhelyi, 2017) and increase the representativeness and power of their sampling. While accounting auditors and IT auditors have started collaborating extensively, the professional practices and focuses of the two professions are different. Accounting auditors examine trial balances and financial statements to ensure that financial statements are accurate and fair. IT auditors analyze and assess an entity's information systems to ensure that data processing runs accurately and meets regulatory requirements, such as data security. They also differ in their specialized knowledge (Abbott, 1988); one's area of expertise is accounting, while the other is information systems. Despite their differences and accounting auditors' dominant positions within professional service firms, the two professions initiated boundary negotiations (Power, 1991; Taminiau & Heusinkveld, 2020).

In this context, the jurisdictions of professions in multi-professional service firms have become more complex due to increasing digitalization and relevant regulatory changes (Kronblad, 2020). Prior research has advanced our understanding of how broader technological developments intersect professional boundaries and create jurisdictional conflicts between professions. Although the insights on specific industries, such as the healthcare industry (Barley, 1986; Fitzgerald, Ferlie, Wood, & Hawkins, 2002; Barrett, Oborn, Orlikowski, & Yates, 2012; Beane, 2019), multi-professional settings, such as the Big Four, have received limited attention. As the existing and emerging professions reside together in these firms, the inter-professional dynamics and boundary-making/boundary-crossing patterns might differ and deserve more attention.

3. RESEARCH METHODS

The study focuses on a large PSC in Turkey named "ALPHA" (pseudonym). As ALPHA has been a member firm of one of the largest four worldwide PSC networks, called the Big Four, it is a prime example to study colonization. This section describes the context, research design, data collection process, and analysis stages.

Following a qualitative research approach (Denzin & Lincoln, 2011), this study aimed to delve deeper into a single case (Gioia, Corley, & Hamilton, 2012) rather than analyzing multiple case studies (Eisenhardt & Graebner, 2007). The study followed the constant comparison method to derive meaning from the empirical data (Corbin & Strauss, 2008; Denzin & Lincoln, 2011). The study was acquainted with the complexity of the research setting before the fieldwork began. Later, the study focused on the relevant issues, guided by prior work to frame the problem accordingly (Stake, 1995). The study integrated three empirical data types interviews, observations, and archival data. It triangulated empirical data, literature, and emerging categories.

3.1 Context

Hotho (2014) has clustered the national business system of Turkey as state-organized. This type of business system predominantly has direct owner control with high ownership coordination and poor alliance coordination in businesses and industries (Whitley, 1999). Institutional features associated with a state-organized business system have strong state coordination and a developmental role. Low power and incorporation of intermediaries, increased market regulation strength of the state characterize them. They have a dominant credit-based financial system, mainly led by the government.

Following long years of economic liberalization, the literature discusses whether Turkey is changing its business systems from a state-organized business system to a highly state-coordinated system (Gökşen & Üsdiken, 2001; Öniş, 1999; Şahin, 2005). After the 2001 crisis, the banking system's restructuring and comprehensive regulatory policies helped establish a more liberalized financial system. Privatizations, mergers and acquisitions, and foreign direct investments had significantly increased during that era. However, the financial system remained considerably credit-based, with some developments in the capital markets. These changes had invited foreign banks to acquire troubled banks in the Turkish banking system. This policy paved the way for several foreign and multinational banks entering the Turkish market. This trend has further fueled multi-professional and inter-professional services due to complex client issues (Greenwood, Morris, Fairclough, & Boussebaa, 2010). During this period, intermediaries' associations gained more power and activity. However, the national business system is still government-organized (Ozen-Aytemur & Dirlik, 2015).

The country's economic liberalization has also slowed down around 2013, with independent regulators becoming dependent on the state policies and the government due to regulatory changes. With the country's change of political system from a parliamentary system to a presidency in 2018, the government's influence on the economic system has gained more power and started implementing faster changes in the economic system, causing some international investors to leave due to a decrease in financial predictability and the strong hand of government on fast-changing regulations. This study's scope ends in 2018 since the new government model is a turning point, and the literature examining the implications after 2018 is limited. While the NBS of the country has not changed, firms' ownership is more diverse in Turkey than 40 years ago, with foreign and domestic shareholder participation. Although this has not shifted the business system to a less government-controlled type, it has increased the demand for different professional services during these periods until today.

ALPHA started as a single professional service firm offering only independent audit services to major financial institutions. The firm has been part of the global network since the early 1980s. In the years that followed, another group of founders established BETA as a tax firm and joined the same global network. The two firms remained in the same international network independent of each other until the mid-2000s and later merged into a single firm. ALPHA took the first step to transform from a single professional service firm to a multi-professional one by establishing full-time consulting units in the mid-2000s. The following years saw the emergence of new professional services, such as IT advisory or legal services. ALPHA and other Big Four firms in Turkey have invested in information technology and digital services, especially over the past decade. The professional services provided within this scope are generally called digital services, such as data protection, cybersecurity, data analytics, and robotic process automation (RPA). The public sector has also pioneered many initiatives, such as investments in digital transformation, e-government services, and digital transformation roadmaps.

The use of information systems in the processes and operations of many organizations brings unique risks to financial statements. Accounting auditors perform financial statement audit work using the financial data provided by clients and produced from information systems. Therefore, whether information systems correctly deliver the data in question affects the accuracy and integrity of financial audit work. After financial scandals such as Enron and WorldCom, the Sarbanes-Oxley (SOX) Act came into force in the US in 2002. The Public Company Accounting Oversight Board (PCAOB), established by the SOX Act, is a Securities and Exchange Commission (SEC)-supervising agency. It is responsible for performing processes related to audits, quality control, and auditor independence to restore public trust in the field of independent audits. According to the standard set published by the PCAOB, financial statement audits should be carried out together with internal controls. In this context, the effectiveness of the internal control environment in terms of design and operation should be assessed, including information systems control.

Regulatory bodies in other countries have also introduced similar standards. For instance, the regulatory bodies regulating audit standards in Germany and Switzerland are the Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW) and the Federal Audit Oversight Authority (FAOA), respectively. Both regulatory bodies introduced standards in the mid-2000s, requiring organizations to perform their financial statement audits integrated with information systems audits.

The banking industry was a pioneer in Turkey. Regulators began to implement critical policies to address the challenges arising from the increased digitalization of financial institutions (Altug, Filiztekin, & Pamuk, 2008). The Savings Deposit Insurance Fund of Turkey (SDIF) took over 25 banks between 1993 and 2003 due to corruption (Hayali, Sarili, & Dinc, 2012). To restore public trust, the government established the Banking Regulation and Supervision Agency (BRSA) in 1999 to regulate and supervise the banking industry. The government also adopted an extensive IMF-supported restructuring program for the banking system after the banking and economic crisis in 2000-2001 (Altug, Filiztekin, & Pamuk, 2008). These regulatory changes were in line and sometimes stricter with international standards (Akyüz & Boratav, 2003).

The use of digital technologies has especially begun in the 2000s. The Banking Regulation and Supervision Agency (BRSA) of Turkey issued a new banking law in 2005 due to increasing digitalization and crises in the banking system—mainly the banking crises in 2001 and 2002. More importantly, the Imar Bank scandal in 2003 (Akyüz & Boratav, 2003). In this scandal, a large consumer bank could implement a double-booking system with ghost accounts to illegally avoid taxation for many years, as per the inspection commission's reports in 2004 (Hayali, Sarili, & Dinc, 2012).

Imar Bank's accounting and IT systems inspection showed that senior management used special software to manipulate financial data and had a double-accounting system (Fort & Hayward, 2004). As a result, bank management falsified financials to independent auditors and the BRSA. It did not record USD 5 billion in deposits in the official books (Yucel & Adiloglu, 2017). The BRSA made it compulsory for banks to have accounting and information systems audits provided by the same independent audit firm to restore public trust. The objective was to improve audit quality for financial institutions while avoiding sampling and coordination problems due to having multiple teams for different types of audits. The regulation has pushed both professional groups to work together and combine their audit work, creating novel boundary relations in the Big Four firms.

The increasing digitalization and adoption of large-scale information management systems that produce financial data have triggered regulatory changes in non-banking industries. For example, the Turkish Court of Accounts (TCA) published the Information Systems Audit Guide in 2013. It regulates public institutions' financial audit processes and IT auditors' tasks (Turkish Court of Accounts, 2013). The Capital Markets Board (CMB, Turkish: SPK) also issued two regulations on information systems (Communique on Information Systems Management Principles) and independent audit principles (Communique on Information Systems Independent Audit Principles) in 2007. Related amendments followed these regulations in the following years. These regulatory changes led to the establishment of IT auditors and rapid growth within the Big Four firms.

Although digitalization has brought accounting auditors and IT auditors together, the two professions are fundamentally different (Malhotra & Morris, 2009). Accounting auditors have an academic background in business administration, economics, finance, accounting, or banking. At the same time, they are experts in accounting knowledge. However, IT auditors have a background in computer engineering, industrial engineering, and management information systems. They are experts in information technology. Accounting auditors also refer to the International Financial Reporting Standards (IFRS) and the International Standards of Auditing (ISA).

In contrast, IT auditors benefit from frameworks of different professional associations, such as the Information Systems Audit and Control Association (ISACA) and Control Objectives for Information and Related Technologies (COBIT). Moreover, accounting auditors are certified as Certified Public Accountants (CPAs) and accredited by the local public oversight, accounting, and audit standards authority (local PCAOB). In contrast, IT auditors are certified as Certified Information Systems Auditors (CISA) and accredited by the Banking Regulation and Supervision Agency (BRSA). Despite the fundamental differences between the two professions, IT auditors have been vital to the audit process, becoming "odd friends" with accounting auditors. Digitalization brought accounting and IT auditors together. It changed established jurisdictional arrangements, creating conflicts.

3.2 Research Design

This study examined ALPHA's organizational history to understand how it became a PSC over 40 years through a qualitative study (Dyer & Wilkins, 1991; Denzin & Lincoln, 2011). The study has developed a comprehensive case to capture contextual richness and complexity (Yin, 2014). As an interdisciplinary area of inquiry, business history refers to exploring the historical evolution of business enterprises in their political, social, and economic context by analyzing archives (Jones & Zeitlin, 2008). While integrating history and management theory is not easy, Üsdiken and Kieser (2004) suggest three views: supplementarist, reorientationist, and integrationist approaches. The supplementarist perspective primarily aims for theory development or refinement with an instrumentalist understanding of history. The reorientationist view remains committed to historiographical debates and narrative construction, distancing itself from the natural science paradigm's universalist concerns. The integrationist approach balances two stances and enriches theoretical development with enhanced narratives without losing the scientific basis (Üsdiken & Kieser, 2004). The study takes an integrationist approach to reconcile both history and theory development by avoiding theoretical over-generalizations. It considered specific contexts and remained sensitive to social, economic, and political variation, accommodating social phenomena under scrutiny (Lippmann & Aldrich, 2014). Following Leblebici and Shah (2004), this study's narrative explanation locates a necessarily sequential chronology into a plot, yielding an enriched theoretical grasp of the history (Leblebici & Shah, 2004).

The study has followed a four repetitive stages approach (Gehman, et al., 2018) to analyze the data (See Figure 3.1).

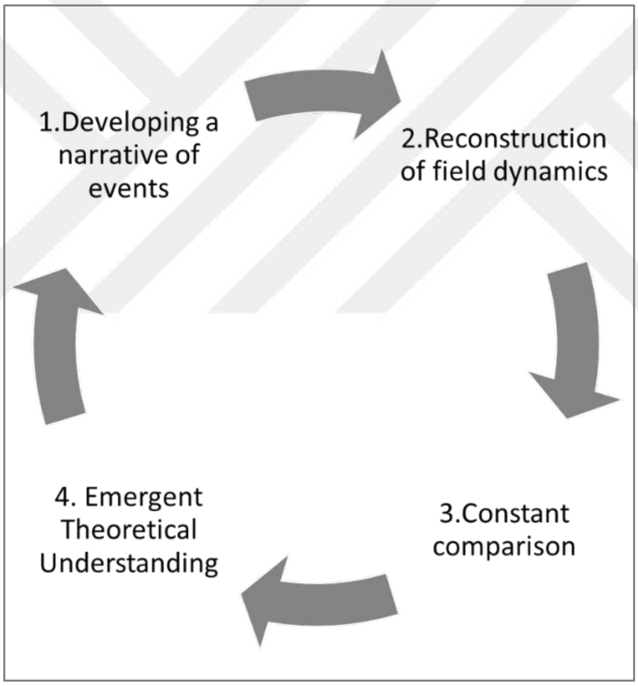


Figure 3.1 : Data analysis approach.

3.2.1 Developing a narrative of events

The study has developed a narrative of significant historical events during the fieldwork. While constructing the narrative pieces, the study has focused on the developments in a broader context and changes at the firm level. The study has noted the significant events that participated in the firm-level changes within the period's economic and political outlook. The study has reviewed the substantial differences in policies and regulations, shifts in the financial system, and developments in ALPHA's international network and its competitors. This step continued until the end of data collection and empirical saturation. During the data collection and analysis, the study has continued identifying potential informants for each significant event and has conducted further semi-structured interviews.

3.2.2 Reconstruction of field dynamics

While collecting data, the study has also textually reconstructed respective dynamics by associating the firm-level changes with corresponding economic, political, and regulatory developments. The study has first listed all critical events related to firm-level changes in each period. Then, the study has analyzed the content of economic, political, and regulatory developments. While developing the periods, the study has considered the key events that significantly changed the firm-level characteristics. Lastly, the study has developed a periodization that helped better understand the last 40 years' temporal structure during these cycles.

3.2.3 Constant comparison

The study has implemented a continuous comparative method and has visited the empirical data, literature, and observations, as an inductive and open-ended study (Locke, 2001; Corbin & Strauss, 2008; Denzin & Lincoln, 2011). In the early rounds, the study has categorized and coded the raw data to implement an informant-centric coding that enlists categories associated with the firm level and country-level changes. In later rounds, the study has iterated between data and existing literature to link the first-order coded data to second-order themes. It aimed to develop theory-centric themes to build the data structure (Gioia, Corley, & Hamilton, 2012).

3.2.4 The emergence of theoretical understanding

The study has developed an understanding of the case study and a theoretical model. The study has iterated between temporal dynamics, informant accounts, literature, and emergent themes during this process. First, the study has consolidated the theory-centric themes into aggregate dimensions, then completed a final review of archival data to formulate dynamic relationships among the emergent themes. Finally, the study has discussed the understanding and the resulting theoretical model with the informants and different academic platforms for further refinement.

3.3 Data Collection

The study collected data from a professional service firm in Turkey named “ALPHA” (pseudonym). Since ALPHA is a member firm of one of the Big Four PSFs, it is a prime example of studying inter-professional and intra-organizational dynamics. The study collected data through participant observation, archives, and interviews with past and present organizational members, including the previous/retired employees, and developed a comprehensive case study (Eisenhardt & Graebner, 2007). Besides, the study applied triangulation by combining and cross-checking data from multiple sources (Yin, 2014). Also, the study moved between data and theory in steps to derive meaning inductively from empirical data (Corbin & Strauss, 2008; Denzin & Lincoln, 2011) (see Table 3.1).

Table 3.1 : Overview of empirical data.

Sources	Types	Period	Content
Primary sources	Semi-structured interviews	Between Jun 2018 and Mar 2019	30 semi-structured interviews. Focus on how ALPHA became a PSC. Each lasted from 60 to 90 minutes.
	Semi-structured interviews	Between May 2019 and Apr 2020	25 semi-structured interviews, 15 interviews with accounting auditors, and 10 interviews with IT auditors. Half of the interviews were conducted online. Each lasted from 60 to 90 minutes.
	Participant observations	Between Feb 2017 and Jan 2020	Spent five years in ALPHA between 2012 and 2017. Then participated ethnographically for three years between 2017 and 2020, participating in meetings and social interactions during work breaks.
Secondary sources	Archival data	Between Feb 2017 and Apr 2020	Historical data from management information systems, print materials (newsletters, marketing materials, internal training documents), and Big Four firms' websites and regulatory bodies with open access to the Internet.

3.3.1 Participant Observations

Observations play an essential role in capturing changes in professional practices and jurisdictional conflicts over time (Skrutkowski, 2014). The study has spent five years in ALPHA between 2012 and 2027. Then participated ethnographically for three years between 2017 and 2020, observing different professions at different levels. Spending eight years at ALPHA would have caused data collection and analysis bias during ethnographic fieldwork. The study has continuously questioned the influences of the researchers' beliefs and ideas on epistemic reflexivity. This participation has helped him observe inherent dynamics directly as they are today (Alvesson, 2009) and access archival materials to understand how they were in the past.

The researcher has attended management team meetings and small group discussions in the Audit, Tax, and Advisory departments in this observation period. Also, the study has attended workshops several times during strategic business planning programs. In addition, the participant observation includes social interaction with the organizational members during work breaks and after hours. During the workshops, discussions, and management team meetings, the study could not tape-record these activities to avoid disturbing the flow and respect their confidentiality. However, the study has taken extensive notes to capture as much detail as possible, with the participants' full consent. Lastly, the study has cross-checked the workshop notes with other participants.

3.3.2 Archival materials

The researcher had access to firm documents and archives that familiarized him with organizational history, including organizational changes, professional jurisdictions, and administrative boundaries. This approach helped him understand how current professional groups have developed since the early years of ALPHA and the IT audit department's establishment and development.

The researcher has analyzed the archival materials, including notes on regulation updates, meeting minutes, workshop reports, and internal reports generated from management information systems. The study examined the actual hours of accounting and IT auditors for the last 20 years as an example of historical data. In this way, the study had the opportunity to understand the changes in the IT auditor's involvement in the audit work over the years and on a sectoral basis.

He has also examined client newsletters, marketing materials, and two printed publications about major professional subjects written by ALPHA's senior audit and tax professionals. One of the print publications the study reviewed was “The Future of Auditing,” co-authored by accounting and IT auditors. In this publication, the study had the opportunity to understand the role of IT technologies in auditing in the professions’ own words. Also, the study has reviewed reports of regulatory bodies and professional institutions, company websites, client newsletters, and other Big Four PSFs’ websites and materials freely accessible online.

The researcher has related firm-level findings against macro-level changes in the environment using archival data. The study has benefited from the integrative framework developed by Empson et al. (2015) that examines the interplay between PSFs and professionals, clients, competitors, and professional regulators to organize the archival data. Towards the end of the study, the study revisited the company archives to refine the results and discussed the emergent model with participants from the ALPHA.

3.3.3 Interviews

Firstly, the researcher has identified major contextual and organizational events while analyzing ALPHA's archival data. For example, some of these significant events are (1) the foundation of audit and tax firms, (2) the merging of audit and tax firms, (3) the establishment of advisory services, and (4) the proliferation of tax, advisory, and legal services. The study has noted these significant events in the case described in detail. For each event, the study has identified a list of multiple critical informants who directly participated in or observed each event from various perspectives. Also, the study has added new informants as the study digs each event with informant referrals. The study has located some informants from the archival records. These informants, retired or currently employed in the ALPHA, have been treated as knowledgeable sources in the data collection.

The researcher has developed separate interview protocols for each key informant group based on the critical event. He performed semi-structured interviews with each person to gain more insights into these events. After identifying the critical informant groups and creating the interview protocols, the study conducted 30 semi-structured interviews; each lasted between 60 and 90 minutes. Some key informants have described more than one critical event. They have taken crucial roles in the company for an extended period (see Table 3.2 for an overview of informants).

Table 3.2 : Overview of informants (A).

Number	Profession	Level	Period
A1	Audit	Partner	Jun 2018
A2	Audit	Partner	Jun 2018
A3	Audit	Partner	Jul 2018
A4	Audit	Partner	Jul 2018
A5	Audit	Partner	Aug 2018
A6	Tax	Partner	Aug 2018
A7	Tax	Partner	Aug 2018
A8	Tax	Partner	Sep 2018
A9	Audit	Director	Sep 2018
A10	Audit	Director	Sep 2018
A11	Audit	Director	Sep 2018
A12	Tax	Director	Oct 2018
A13	Tax	Director	Oct 2018
A14	Audit	Partner	Oct 2018
A15	Audit	Partner	Oct 2018
A16	Tax	Partner	Nov 2018
A17	Advisory	Partner	Nov 2018
A18	Audit	Partner	Nov 2018
A19	Tax	Partner	Dec 2018
A20	Advisory	Director	Dec 2018
A21	Advisory	Partner	Jan 2019
A22	Tax	Director	Jan 2019
A23	Advisory	Partner	Jan 2019
A24	Advisory	Director	Feb 2019
A25	Audit	Director	Feb 2019
A26	Tax	Senior Manager	Feb 2019
A27	Advisory	Senior Manager	Mar 2019
A28	Advisory	Senior Manager	Mar 2019
A29	Audit	Senior Manager	Mar 2019
A30	Tax	Senior Manager	Mar 2019

In the semi-structured interview protocols, the study began by asking informants to list relevant stakeholders in the field (e.g., clients, regulatory bodies, and ALPHA's international network) and the services provided by ALPHA competing PSFs in that period. Also, the study has requested informants to assess the professional services that competitors and ALPHA's global network provided. According to their consideration, the study has asked them about the changes in organizational boundaries and factors that keep distinctive professional groups together in ALPHA. The study has discussed these questions with the informants and their context at the time.

Table 3.3 : Overview of informants (B).

Number	Profession	Level	Period
B1	Accounting Auditor	Partner	May 2019
B2	Accounting Auditor	Partner	May 2019
B3	Accounting Auditor	Senior Manager	Jun 2019
B4	Accounting Auditor	Director	Jun 2019
B5	Accounting Auditor	Director	Jul 2019
B6	Accounting Auditor	Partner	Jul 2019
B7	IT Auditor	Manager	Aug 2019
B8	IT Auditor	Director	Aug 2019
B9	Accounting Auditor	Director	Sep 2019
B10	IT Auditor	Partner	Sep 2019
B11	IT Auditor	Senior Manager	Oct 2019
B12	IT Auditor	Senior Manager	Oct 2019
B13	IT Auditor	Partner	Nov 2019
B14	Accounting Auditor	Partner	Nov 2019
B15	IT Auditor	Manager	Dec 2019
B16	IT Auditor	Manager	Dec 2019
B17	IT Auditor	Manager	Feb 2020
B18	Accounting Auditor	Partner	Mar 2020
B19	Accounting Auditor	Partner	Mar 2020
B20	Accounting Auditor	Director	Mar 2020
B21	Accounting Auditor	Partner	Apr 2020
B22	IT Auditor	Manager	Apr 2020
B23	Accounting Auditor	Manager	Apr 2020
B24	Accounting Auditor	Manager	Apr 2020
B25	Accounting Auditor	Manager	Apr 2020

Secondly, spending eight years at ALPHA helped identify theoretically relevant informants about the IT audit department's establishment through snowballing and purposive sampling. These informants were directly involved in or observed the establishment and development of the IT audit department. The study selected critical informants from different levels, treated them as knowledgeable agents, and designed the interview protocols accordingly. The study conducted 25 semi-structured interviews with 15 accounting auditors and 10 interviews with IT auditors (see Table 3.3) from May 2019 to April 2020. The study conducted half of the interviews online. Each semi-structured interview lasted from 60 to 90 minutes.

He asked the informants first about the IT audit department's establishment and expansion at ALPHA. Later, the study asked how regulatory changes have affected accounting and IT auditors. The study specifically asked what triggered the IT audit department's establishment and expansion and how the client portfolio and chargeable hours have changed over time. The study also asked how digitalization affected accounting and IT auditors' professional practices. This question helped the researcher understand how digitalization has connected IT auditors with accounting auditors. In particular, the study asked which critical activities and task groups of financial statement auditing are most affected by digitalization. It also questioned how the two professions negotiated jurisdictions over these activities and tasks. The study wondered if any phase of financial statement audit work remained unaffected or whether it shifted from one profession to another over time.

3.4 Data Analysis

In the first stage, the study broadly considered accounting and IT audit practices to better understand the relevant context by reading the local and international websites of the Big Four firms, regulatory bodies, and professional associations. This process helped develop a chronological order of relevant events and understand the IT audit's establishment and expansion. While developing this chronology, the study focused on how developments in digital technologies affect the critical activities and tasks of financial statement audit work. This broader understanding also helped identify informants and frame the interview questions.

The second and third stages of the analysis involve open-coding coding (Gioia, Corley, & Hamilton, 2012) and comparison (Golden-Biddle & Locke, 1997) of the empirical data. In the second stage, the study examined how the jurisdictions over financial statement auditing have changed between the two professions due to digitalization. "A change in professions can best be analyzed by specifying forces that affect the content and control of work and investigating how disturbances in that content and control propagate through the system of professions and jurisdictions" (Abbott, 1988, p. 112).

Therefore, it is essential to examine the change in professional tasks to understand the impact of digitalization on the profession's jurisdictions. The study first listed all the changes captured in professional tasks due to digitalization and simplified the initial list, keeping only the fundamental changes. The study then grouped these changes into audit tasks with the help of informants. The study grouped the changes in tasks under broader categories of planning, internal understanding controls, risk assessment, audit strategy, performing controls testing, substantive evidence gathering, overall reviewing of financial statements, and finalization stages (IAASB, 2018). The study understood which critical audit tasks shifted from accounting auditors to IT auditors and were not affected.

The third stage of the analysis consists of two steps. Firstly, the study used boundary work typology to categorize responses as reinstating, bending, and pioneering role boundaries (Bos-de Vos, Lieftink, & Lauche, 2019). In response to jurisdictional changes, the study listed all the boundary work the two professions the study captured in the interviews. The study first categorized boundary work. The two professions aim to maintain their traditional roles by reinstating role boundaries. The responses, such as emphasizing the role of one's profession and undervaluing the other profession, make the two professions more conservative and challenge collaboration. The study then categorized the boundary work as bending role boundaries. The study observed incremental changes in accounting and IT auditors' jurisdictions and professional practice. The gradual changes, such as involving the other profession more in audit work or organizing inter-disciplinary training, allow the two professions to adopt new conditions and adjust their jurisdictions. The study lastly categorized the boundary work, in which the two professions intentionally and radically reconfigure their jurisdictions and roles. These reconfigurations (like introducing new firm-wide policies or establishing centralized teams to coordinate activities between the two professions) helped redefine jurisdictions and establish collaboration.

Secondly, the study categorized the boundary work responses and the critical audit tasks into theory-centric concepts. For this purpose, the study used Abbott's (1988) three professional practice acts of diagnosis, treatment, and inference. The study grouped boundary work into the diagnosis phase in response to jurisdictional changes in planning or understanding the clients' internal controls. The study also grouped responses to jurisdictional changes related to risk assessment or deciding on audit strategy in the inference phase. Finally, the study grouped the boundary work in response to changes in critical activities, such as substantive evidence gathering in the treatment phase. This perspective helped relate boundary work to changes in crucial audit tasks due to digitalization with theory-centric broader themes (Gioia, Corley, & Hamilton, 2012). This approach also improved the generalizability of the findings and allowed us to relate the findings to the available literature.

4. FINDINGS

The study presents the findings in two chapters. The first chapter presents how the ALPHA transformed from a single-profession service firm to a multi-profession service conglomerate over 40 years. The second chapter presents how accounting and IT auditors remain within the same firm and how they respond to jurisdictional conflicts due to digitalization.

4.1 Becoming a Professional Service Conglomerate

This section presents the empirical findings through ALPHA's historical narrative, describing how it has developed over time and has become a PSC. Analyzing ALPHA's history, the study has observed three distinctly different periods: before the 1980s, 1980-2001, and 2001-2018. While the first two periods have set the stage for a multi-profession firm, the PSC transformation mainly occurs in the last period. The study describes the periods, factors, and process of transforming ALPHA into a PSC firm in this section.

4.1.1 Period I: Before the 1980s

Turkey was not even a partly industrialized country when the Republic had founded in 1923. The country's economic growth had begun with a liberal approach. However, like other later-industrialized countries, it has opted for a state-organized business system. Especially after the Second World War, Turkey began establishing early industrial infrastructure with public ownership under state-owned companies. Even though Turkey had attempted an outward-oriented and export-led growth industrialization strategy in the 1950s, that was not sustainable due to the foreign currency deficit.

In the 1960s, Turkey had prioritized industrialization projects that supported import substitution and went through a structural transformation to produce intermediate goods and related manufacturing. The late 1970s were a political and economic crisis, with several political coalitions consecutively trying to stabilize the country and improve the planned economy's performance (Karluk, 2014).

4.1.1.1 Professional services: Accounting and the others before the 1980s

This period was before the financial liberalization of the Turkish economy. The financial system was primarily credit-based, and the market was low capital. In contrast, volumes of privatization, merger and acquisition activities, and foreign direct investments were low. The business system is state-organized from a national business system perspective, where the private business depends on state policies. The owner-managed firms mostly dominated the market with the ability to exert control over economic activities. They could maintain firm control without sharing the resources with other stakeholders. Also, the owner-managers have expertise in their business and are actively involved in its operation (Whitley, 1999). Informants stated that this period did not create a desirable market for independent auditors and consultants in general.

Audit as a profession started its development in the 1960s, with the initial demands from banks and other financial institutions. Local banks started their operation in those years in Turkey. Foreign investors in these banks had asked for independent audit reports for their financial statements, as their foreign correspondents and other fund sources require independent auditing. Until the 1980s, international accounting firms performed independent audits on demand, as local regulations were not mandating for independent audits (See Figure 4.1).

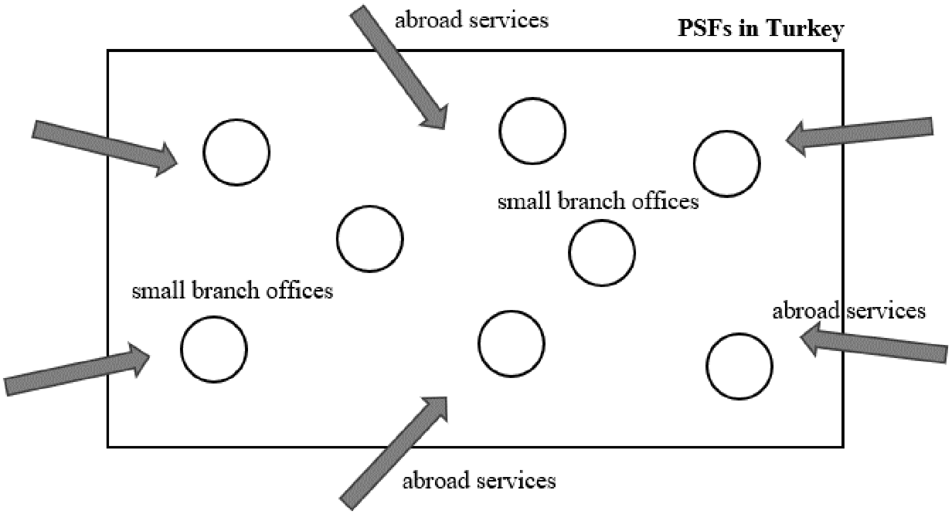


Figure 4.1 : PSFs in Turkey before 1980.

4.1.1.2 ALPHA before the 1980s

The Big Eight accounting firms, including the ALPHA, performed the auditing of local banks from abroad when they required an independent audit, such as answering foreign investors' demands. Later, like other accounting firms, ALPHA established a local branch office and offered audit services with local teams in Turkey.

One of the informants, who is the co-founder of the ALPHA, told that:

> I started to work in one of the Big Eight firms in the US. I continued working as a Certified Public Accountant (CPA) in their office in Turkey until the 1980s. My colleague, the ALPHA co-founder, also followed a similar path, started to work in one of the Big Eight firms' UK office as a CPA, and then moved to their office in Turkey. In those days, no regulations were asking for independent audit services. (Participant A2, Audit, Partner)

During this period, while learning the profession of independent auditing, the founders of ALPHA also formed their networks in the business environment in Turkey.

4.1.2 Period II: From 1980 to 2001

1980 is a significant turning point in the country's history, with a military coup d'état and the transformational changes that have taken place afterward. Before the military intervened with the democratic regime on September 12, 1980, the economic liberalization efforts had already started. With the government's directions and the IMF's guidance, the State Planning Organization (SPO) announced a significant liberalization program, popularly named "the January 24 Decisions". The program aims to eliminate state intervention in the economy by shrinking the public sector with privatizations and establishing "a free-market" economy. The Turkish lira's free convertibility to foreign currencies had been declared among the primary policies, leaving the Turkish lira's value to fluctuate in the currency market. Another policy change was replacing the import-substitution strategy with an export-oriented industrialization strategy. The military regime terminated existing political parties; however, it allowed people to establish new political parties starting with the 1983 elections.

The new political parties mainly had established on the legacy of the military-terminated parties. The author of the 24th January Decisions at SPO, namely Mr.

Turgut Özal, had entered politics as a new leader. His Motherland Party (Anavatan Partisi - ANAP) claimed a combination of four social tendencies previously represented by four parties terminated by the military coup. ANAP had won the 1983 elections, and Turgut Özal, who had prepared the 24th January Decisions at SPO, became the new government's prime minister (Karluk, 2010).

These changes had ensured the deployment of Turkey's liberalization. At the same time, it had also been a significant trend in Western countries, such as the UK, under Mrs. Margaret Thatcher's government. Mr. Özal later became the president in 1989 and stayed in that position until the study died in 1993. However, ANAP had been the ruling party in the 1980s and had participated in the ruling coalitions in the 1990s. Large volumes of foreign currency have entered the economy during these governments, mostly with foreign direct investments. However, high inflation and high-interest rates characterized the period, which also caused the accumulation of hot money in the economy (Karluk & Küçüksakarya, 2016).

In the period between 1990 and 1995, the Turkish economy had another crisis due to instability of domestic affairs, increased government spending, military expenses due to Kurdish separatist terror, the Gulf Crisis, and rising petroleum prices. Two global credit rating agencies had decreased Turkey's credit ratings in 1994. A large amount of "hot money" had flowed out from the economy, with rising foreign currency exchange and a significant drop in the currency value. A new stabilization program was announced on April 5, 1994, to stop the money outflow and attract money from international markets. The objective was again to ensure financing of the government's foreign debt and public deficit. In just two days, the Turkish lira had 73% devalued against foreign currencies, making the Turkish lira cheap enough the regain attractiveness in the international exchange markets. It had been among the worst economic crises in Turkish history. The Gross Domestic Product (GDP) had declined by 6 percent in a few weeks.

However, economic liberalization continued, and Turkey became a founding member of the World Trade Organization in 1995 and entered the Customs Union with the European Union in 1996. Later in 1999, GDP fell again by another 5 percent 1999 due to a devastating earthquake in the highly industrial Marmara region, impacting Kocaeli, Sakarya, and İstanbul (Altug, Filiztekin, & Pamuk, 2008). These changes had influenced the Turkish economy to become more integrated and dependent on the global financial system.

4.1.2.1 Professional services: Accounting and the others 1980-2001

The Capital Markets Board approved the first independent auditing regulation in 1987. It was the rule describing the independence of external audits in capital markets.

Another significant development in the 1980s is the mega-mergers of large accounting firms and consolidation from the Big Eight to the Big Five. The audit and tax firms have merged under the same organization, although they operate separately in other countries. However, unlike the consolidation into the Big Five, this unification developed more related to local country legislation.

In 1989, Turkish authorities introduced critical regulatory developments, including the criteria for becoming a registered accountant and the actual conduct of accounting. The auditing profession has two parts independent accountants and certified public accountants. Accordingly, the independent accountants dealt with bookkeeping, audit, and consultancy work. In contrast, certified public accountants could perform auditing and consultancy services. However, they were also allowed to provide the attestation as a service. The goal of the attestation service was to make sure the state's tax receivables were properly recognized and protected (See Figure 4.2).

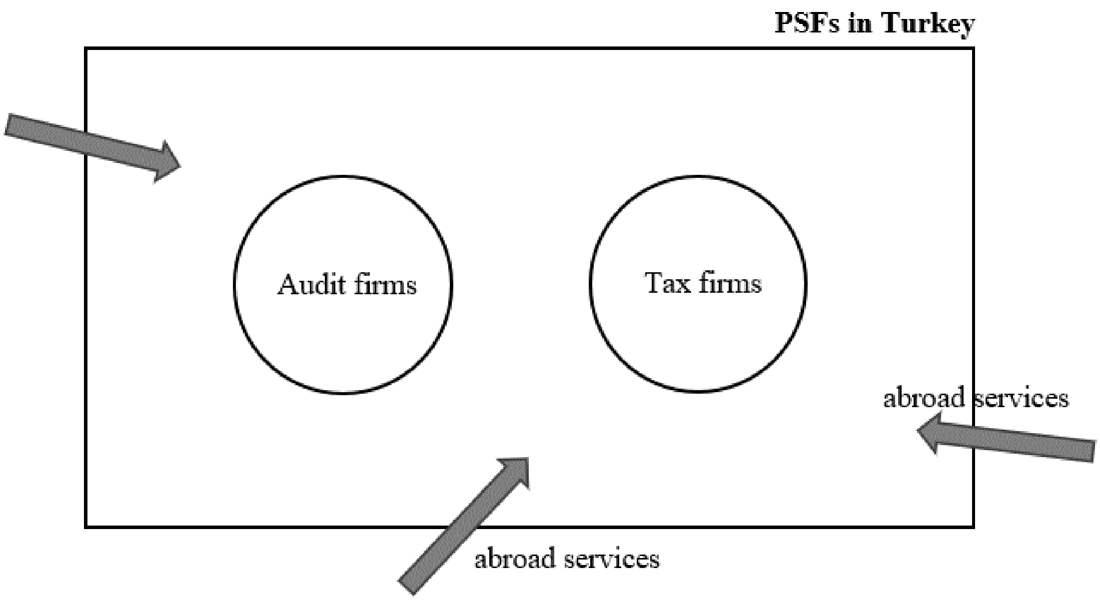


Figure 4.2 : PSFs in Turkey from 1980 to 2001.

4.1.2.2 ALPHA between 1980-2001

As one of the co-founders' of ALPHA describes:

> My colleague had just started ALPHA, but it was not fully operational yet. After having a short conversation over a coffee, I have decided to join forces with him. We got the representation of ALPHA International and have joined the regional network. Our financial problems continued until the mid-1980s, when we had won a large banking client's independent audit service. We have reached the second milestone by acquiring other significant banks for our client portfolio. Due to mergers of large accounting firms abroad, representative offices of ALPHA in Turkey transformed into five large auditing firms, which helped us. (Participant A4, Audit, Partner)

As the co-founder has described, ALPHA started as a single professional service firm offering independent audit services to major financial institutions. It has been a part of the global network since the 1980s.

One of the former managing partners highlighted the similarities between the two professional groups:

> The (sworn-in) public accountants are necessarily taxation and accounting experts; they refer to the accounting body of knowledge and Turkish tax procedure law. However, I believe that public accountants and independent accountants are not two very distant groups; more or less, they are all accountants. Firstly, accounting expertise is essential; specialization starts in the following years. Also, providing joint services to the same clients is more efficient and higher value-added than providing these services separately. (Participant A2, Audit, Partner)

Following years, another group of co-founders had established BETA as a tax firm and joined the same global network with ALPHA at the beginning of the 1990s. Although these two accounting and tax firms were part of the same international network independent of each other, the network company unified them later, in the mid-2000s. However, most of the ALPHA's competitors in Turkey (local representatives of the Big Five accounting firms) unified the audit and tax firms operating separately from each other in the 1990s, more than a decade earlier than ALPHA. During an interview, as one of the informants reflected:

> Independent accountants and public accountants are two different professional groups in Turkey. Independent accountants are auditors referring to standard auditing methodologies and International Financial Reporting Standards (IFRS). On the other hand, public accountants offer tax-related services based on tax procedure law. These two professional groups could merge earlier, soon after the regulation in 1989. Our competitors have done this before. (Participant A1, Audit, Partner)

The financial liberalization attempts started in 1980. However, privatizations, mergers and acquisitions, and foreign direct investments remained limited until 2001. The financial system continued to be highly credit-based, with a relatively less significant capital market. Under the state's institutional structuring organized business system, ALPHA and BETA remained single professional service firms. They provided independent financial statement audits and tax services separately, as the collaboration and joint work between the two firms was low. Financial consulting services were the only additional service of independent accountants during the 1990s. However, mostly abroad, teams from the international network delivered these services.

4.1.3 Period III: After 2001

The Turkish economy has gone into the 2000s with some critical structural issues. The 1994 stabilization program largely recovered and stabilized the economy; nevertheless, fundamental adjustments were not implemented in a timely manner, resulting in another severe economic crisis in 2001 (Erçek & Günçavdı, 2010; Karluk & Küçüksakarya, 2016). Due to growing worries in 2000, large-scale banks terminated their interbank loans to many susceptible banks, resulting in the outflow of cash by foreign investors. After comparatively weaker banks liquidated their investments, the value of government securities plummeted. The public debt was in jeopardy once more. As a result, capital outflows surged rapidly, triggering a systemic financial crisis.

The markets were soothed by an IMF financing package. In 2001, however, a monetary crisis coincided with political unrest. During the banking and financial crisis of 2000-2001, Turkey's GDP fell by 10% (Altug, Filiztekin, & Pamuk, 2008). Following the last crisis, the financial system underwent major IMF-sponsored reorganization. State banks will be restructured, private banks will be strengthened, and a more liberalized financial system structure will be built as a result of the enacted legislation and policies. These legislation and changes were frequently in line with worldwide best practices, if not stricter than international norms (Akyüz & Boratav, 2003).

A significant institutional change has changed the nature of growth-enhancing reforms implemented after the 2000-2001 crisis in the opposite direction, starting from the late-2000s. Also, this was the same period as the global financial crisis in 2008. The structural reforms imposed by the IMF or World Bank and rule-based policy frameworks have gradually changed (Acemoglu & Üçer, 2015).

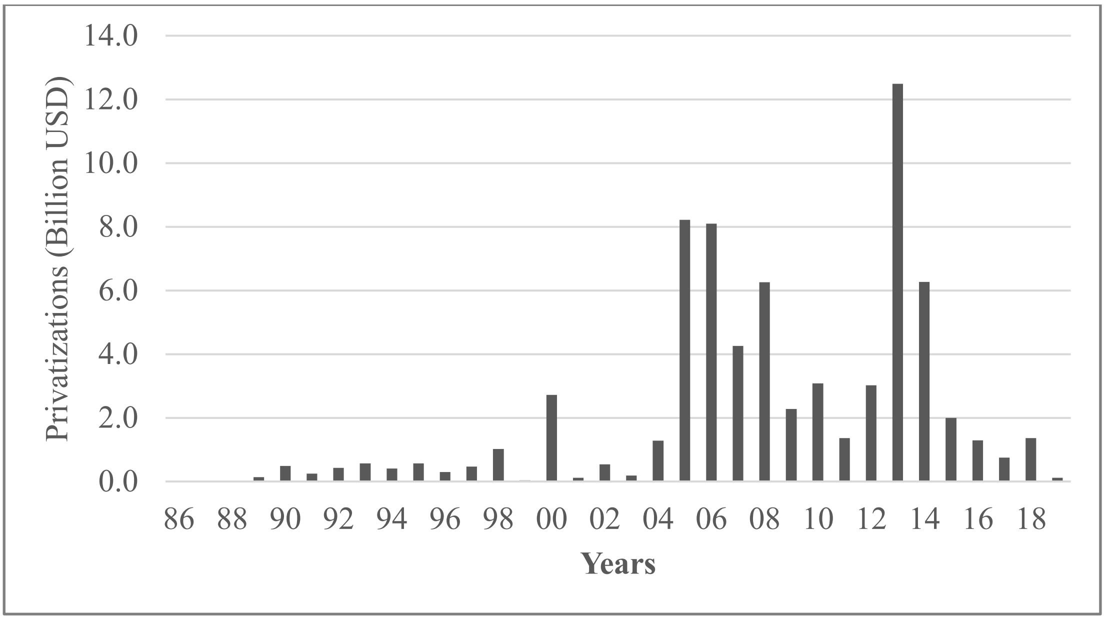


Figure 4.3 : Privatizations in Turkey.

Although an institutional shift has occurred since 2007, significant regulatory developments have continued. In 2011, the government established the Public Oversight, Accounting, and Auditing Standards Authority (Kamu Gozetim Kurumu-KGK). The New Turkish Commercial Code came into force the following year. The authority has made significant adjustments to the auditing of equity corporations as a result of the new legislation. KGK's objective, on the other hand, was to keep up with worldwide advancements in independent audits, comply with European Union legislation, and manage the new commercial code's requirements.

Post-crisis economic reforms ushered in a period of recovery, particularly between 2002 and 2008, resulting in stable growth rates and substantial Foreign Direct

Investment (FDI) inflows. Between 2004 and 2015, the number of privatizations climbed dramatically (See Figure 4.3) (Privatization Administration of Turkey, 2020).

Also, the study has collected data on announced mergers and acquisitions (M&A) in Turkey for the years between 2002 and 2019 from two reports on M&A published by E&Y and KPMG Turkey (See Figure 4.4). The study observed an increase in mergers and acquisitions in this era, providing a rich context for establishing advisory services (Boussard, 2018). Per capita GDP levels have increased by about 20 percent in the following five years after the crisis in 2000-2001 (Altug, Filiztekin, & Pamuk, 2008). The Turkish economy had a good institutional backdrop thanks to macroeconomic stability, stronger ties with the European Union, and associated modifications (Macovei, 2009).

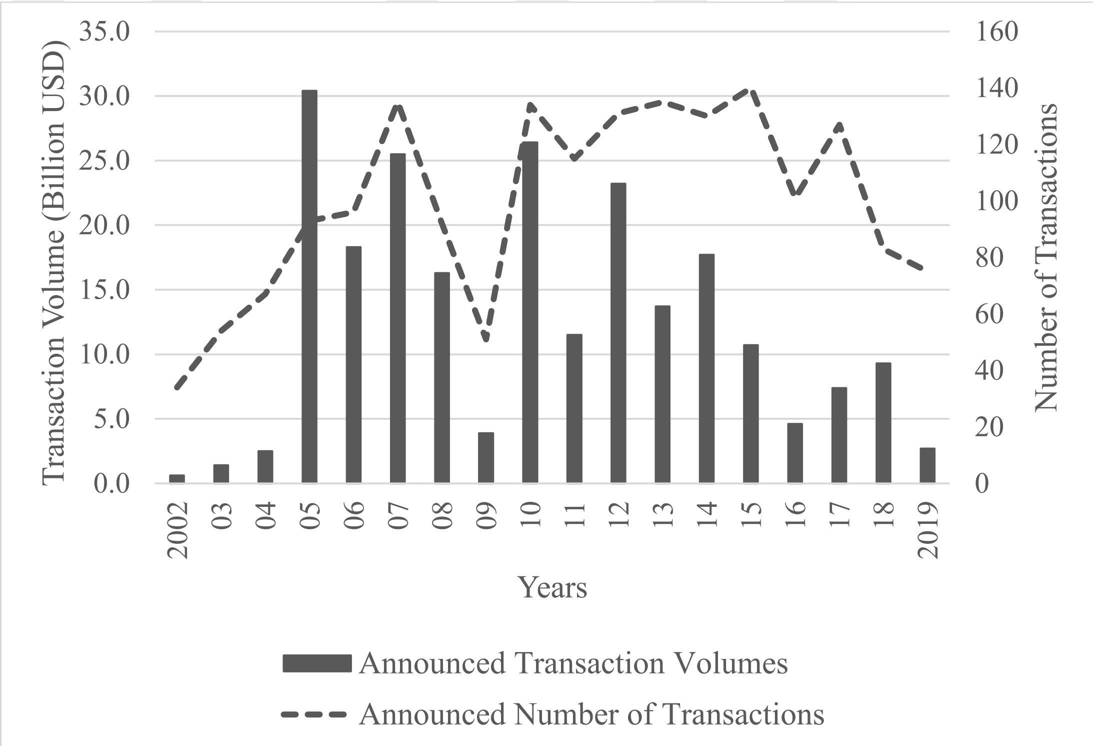


Figure 4.4 : Mergers and acquisitions in Turkey.

In the meantime, another major event would significantly impact the audit and finance sector. In many ways, the Enron affair in the United States in 2001 called into question the independent audit method. The independent accounting firm, which provided auditing services to Enron, ended its activities. The Big Five consolidated into Big Four firms. The events of Enron, WorldCom, and Parmalat shocked the markets a year ago. Following these accounting crises, the Sarbanes-Oxley Act was enacted in the

United States in 2002. The statute intends to preserve independent auditors' integrity as well as the quality of financial reporting and auditing. It also tries to restore investor and stakeholder confidence in the market. The establishment of the PCAOB by the SEC was one of the events.

Post-crisis economic reforms and global developments in the financial auditing sector have paved the way for numerous regulatory changes in Turkey's policies during the 2000s. The Banking Law, which was published in 2005, regulated independent auditing in the banking industry. The Banking Regulation and Supervision Agency (BRSA, Turkish: BDDK) would be in charge of regulating the authorization and operating principles of independent auditors, according to the law. Independent auditing businesses will also execute banking procedures and information system audits under these requirements, in addition to independent auditing of financial statements in banks.

During this period, additional restrictions were also enacted. The Energy Market Regulatory Authority (EMRA, Turkish: EPDK) started regulating energy markets in 2003. The Undersecretary of Treasury determined a series of policies and regulations related to the independent audit of pension, insurance, and reinsurance companies and published them in 2001, 2007, and 2008.

4.1.3.1 Professional Services: Accounting and the others after 2001

The independent audit firms expanded their operations significantly due to the increasing need for independent auditing in the world and Turkey. Independent auditing became necessary, especially for large and medium-sized firms, to access resources cost-effectively. The Big Four firms' total audit income accounts for 80% of the entire audit market.

The Big Four firms played more active roles in consulting in the 2010s than in the 2000s, shifting away from auditing. They have taken a significant portion of the market share away from other consulting firms using client data and networks. The audit's revenue as a percentage of overall revenue has dropped to 25%-30%.

4.1.3.2 ALPHA after 2001

During the semi-structured interviews, one of the informants reflected on that period:

> The reforms implemented after the 2001 crisis brought an unprecedented demand in the sector, especially after the mid-2000s. In the same period, the Enron incident took place. Arthur Andersen also ended their activities in Turkey, and four large accounting firms remained. In which many regulatory policies came into force, this period provided a favorable environment for the growth of the audit and consultancy sector, especially in the financial services industry rather than non-service businesses. (Participant A5, Audit, Partner)

ALPHA took the first step to truly transform from a single-profession service firm to a multi-profession service firm by establishing the first full-time consulting units (advisory department) in the mid-2000s. Until that time, ALPHA was providing consulting services in a limited manner. The study observed that new professional groups joined the firm, such as accounting advisory, corporate finance, transaction services, internal audit, and information risk management professionals. One of the informants commented on that period:

> We were a more boutique company than our competitors at that time. We had a small number of large-scale clients. Our competitors had more comprehensive auditing, tax, and consulting services. As ALPHA, we did not want to stay back in the competition, and we wanted to be able to offer our clients an extensive range of services. (Participant A17, Advisory, Partner)

One of the informants, who is an audit partner, also reflected that:

> With the new commercial code, the number of firms that must receive mandatory audit services has increased significantly, especially non-service businesses. However, the Big Four firms were already auditing large accounts. It was difficult for smaller accounts to afford the Big Four's costs. Even so, medium accounts provided an opportunity for growth. As a result, the total number of audit professionals almost doubled in the 2010s. However, the fee per hour was deteriorating, considering the inflation rates. As our competitors did, we had to have higher growth rates in more profitable lines such as consulting services. (Participant A18, Audit, Partner)

In this era, ALPHA proliferated its professional service offerings. The Banking Regulation and Supervision Agency's laws on auditing banking operations and information systems set the path for information risk management services to be established. The discovery of vulnerabilities and threats to an entity's information technology infrastructure was one of these services. It's similar to an independent audit, except it's focused on information technology rather than accounting standards. Internal auditing is another well-established service, which entails an independent assessment of the efficacy of a company's risk management, control, and governance procedures. The company has initiated the accounting advisory and corporate finance services in the same period. It has dealt with the accounting issues of an entity’s financial reporting and compliance obligations, capital structures, and economic and investment decisions for the shareholder value. Finally, a new service established in 2007 was the bookkeeping services within outsourcing services. The company records the financial transactions of client entities according to accounting principles.

One of the senior informants reflected that:

> The 2000s was a substantial transformational period for us. In a short period, we have evolved from a boutique company offering limited services with a small number of partners to a large service company offering a wide range of services with multiple partners. During this transformation, the impact of the increase in foreign direct investments and extensive regulatory restructuring was substantial. (Participant A8, Tax, Partner)

When the study examined ALPHA's archival data, the information also supported the transformation in the 2000s argument. The total number of employees increased from less than 100 to around 500 between 2004 and 2010. In the early 2000s, all partners were independent accountants providing independent auditing services. However, in 2010 the exact number was less than half of all ALPHA partners. The study also observed that expatriates at the partner level from the international network started to join the ALPHA’s advisory units for the first time.

After taking the first step to truly transform from a single-profession service firm to a multi-professional service firm in 2007, new professional services continued to establish in the following years (See Figure 4.5).

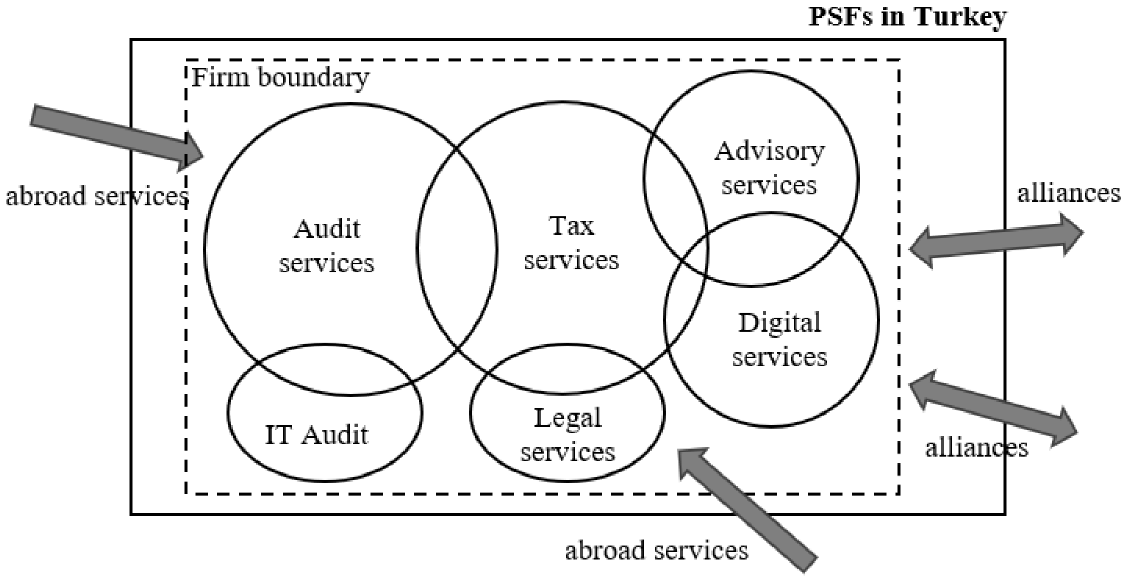


Figure 4.5 : PSFs in Turkey after 2001.

The study observed that the percentage of the number of non-audit employees and revenue kept increasing. However, the study did not observe any significant boundary changes until 2010, such as establishing new service lines or mergers. A considerable boundary change happened when ALPHA diversified its taxation, IT advisory, and strategy consulting services in 2010, increasing the professional diversity throughout the organization. Tax consultation and transfer pricing are two recently formed tax-related businesses. The former is mostly based on tax law. The latter, on the other hand, focuses on taxation and accounting skills. IT advisory is another recently developed service that encompasses, but is not limited to, designing IT strategy, regulatory compliance, software selection, and implementation services. Finally, during that time period, strategy consulting services dealing with growth plans, enterprise-wide reforms, and target operating models were formed.

Taxation-related services had further expanded with the growth of sworn-in tax (sworn-in certified public accountants) services in 2012. Also, customs and foreign trade services had established in 2015, providing due diligence, regulatory compliance, and customs operations consultancy. Launching legal services in 2012, offering professional legal services as consultancy was another significant boundary change.

Finally, the study observed that the Big Four firms in Turkey have started to invest in information technology and digital services, especially in the last five years. The services provided within this scope are generally called digital services, including professional services, such as data protection, cybersecurity, data analytics, and RPA.

In this period, the public sector pioneered a wide range of initiatives, such as investments in digital transformation (e.g., e-invoice and e-ledger), e-government services, and digital transformation roadmaps (Digital Turkey) for other industries. As an alternative to the traditional delivery methods where services are offered to clients through fieldwork by professional teams, there is an increase in subscription-based digital services. Also, the study observed that the Big Four firms are increasingly building more alliances with other technology solutions providers to digitalize their services.

4.1.4 Alpha's transformation into a PSC

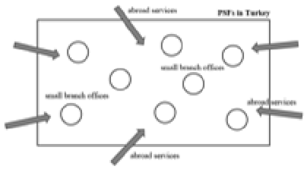
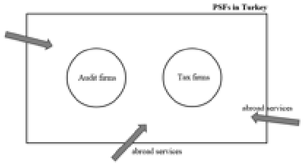
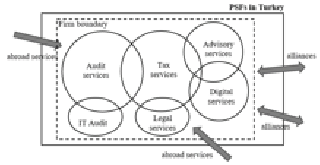
The study has summarized ALPHA's transformation into a PSC over the last 40 years in Table 4.1. ALPHA transformed from a single-partner and single-disciplinary form into a multi-partner and multi-disciplinary form. The inter-disciplinary work between professional groups increased considerably. The study coded the findings on firm-level changes under three dimensions; multi-partnership, multidisciplinary, and inter-disciplinary.

First, the study defined the multi-partnerships (Greenwood, Hinings, & Brown, 1990) as a professional services firm with more than a few equity partners. This definition is also an indicator of growth in size. This growth might be in a single profession or multiple professions. Being a multi-partnership does not indicate any information on the firm's professional multiplicity.

Second, the study defined multidisciplinary (Greenwood & Suddaby, 2006) as a professional service firm with more than a few distinct professional groups. This definition is an indicator of professional multiplicity. However, these separate professional groups might be providing different services independently to clients or relying on shared expertise.

Third, the study defined the inter-disciplinary as the distinct professional groups integrating knowledge and methods from different knowledge bases. Finally, the study aggregated (Gioia, Corley, & Hamilton, 2012) these three dimensions into a broader category of PSF characteristics (See Figure 4.6).

Table 4.1 : Transformation into a professional service conglomerate.

Aspect	**Before 1980**	**1980 - 2001**	**2001 - 2015**
Country level changes			
Owner control type	Direct	Direct, Low market	Direct, Limited market
State coordination	High	Considerable	Considerable
Strength of intermediaries associations	Low	Limited	Some
Financial system	High credit based Low capital market	High credit based Limited capital market	Considerable credit based Some capital market
Privatizations	*Low*	*Limited*	*Some to high*
Mergers & acquisitions	*Low*	*Limited*	*Some to high*
Foreign direct investments	*Low*	*Limited*	*Some to high*
Field level changes			
Developments in international network	Big 8 accounting firms	Mega-mergers of accounting firms Consolidation from Big 8 to Big 5	Dissolution of Arthur Andersen Consolidation from Big 5 to Big 4
Boundary illustration			
Firm level changes			
Developments in ALPHA	Foreign auditing firms had small scale branch offices, provided services abroad	Audit and Tax firms were founded as single profession firms	Mergers of Audit and Tax firms Proliferation of Advisory services Establishment of Legal and IT services
Multi-partnership	Low	Limited	High
Multi-disciplinary	Low	Limited	High
Inter-disciplinary	Low	Low	Considerable

The study conceptualized professional service conglomerates (Suddaby & Greenwood, 2001), combining multi-partnerships and multidisciplinary/inter-disciplinary PSF characteristics. Conglomerate firms have different and not necessarily related businesses. However, the study used PSC to refer to multidisciplinary professional services networks. The study observed a transformation from a single-profession service firm to a professional service conglomerate in the empirical case study over 40 years. The study argues that the shifts in the business system characteristics and institutional features (Whitley, 1999) also played an essential role in this transformation (Hotho, 2014), especially after 2001 in Turkey.

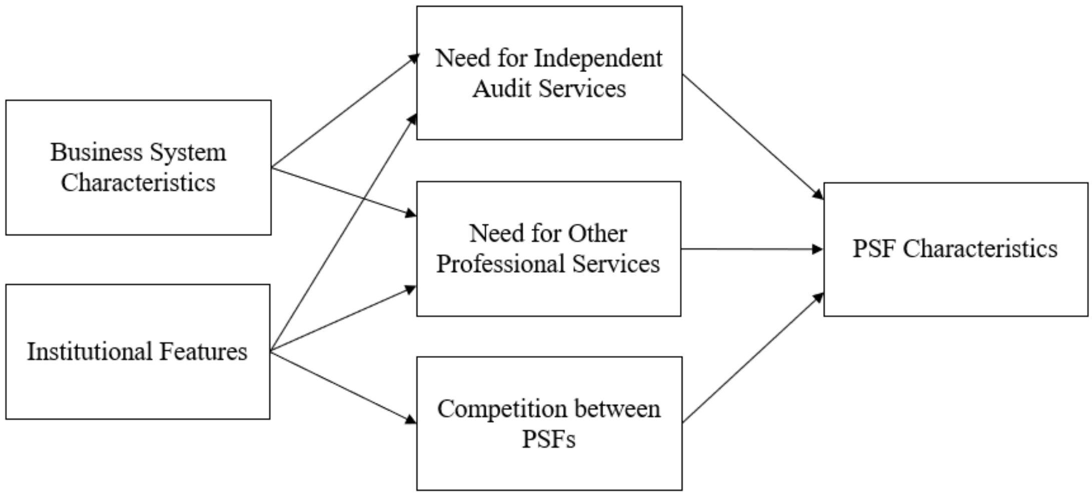


Figure 4.6 : Becoming a professional service conglomerate.

The dominant type in Turkey is the state-organized business system, primarily until 2001. The critical characteristics of state-organized business systems are having a direct owner control type, high ownership coordination, and low alliance coordination (Whitley, 1999). The study observed that direct owner control remained the dominant type through the primary and secondary data analysis. However, the study also observed a limited shift towards market ownership starting from 2001. That limited shift to the market ownership means that while the owner-managers maintained firm control, they started to share the firm control with other shareholders at different spectrum levels.

Moreover, the owner-managers have high involvement in the firm’s management with high business knowledge. On the other hand, they have low involvement in management and insufficient business knowledge in market ownership. Firstly, the study argues that the shift towards a lower involvement in management and lower business knowledge triggered the organization's need for external professional services. Besides, actors focus their interests on financial return on assets in market ownerships. However, having a low level of business knowledge and direct management involvement makes it challenging to assess the returns without objective and detailed information about the firm. Secondly, the study argues that the shift towards a lower direct management involvement and lower business knowledge triggered the organization's need for independent audit services.

The critical institutional features associated with the state-organized business system type is having a combination of high strength of the state's coordinating and developmental role, low strength and incorporation of intermediaries, high strength of state's market regulation, and dominant credit-based financial system. The study observed that the strength of the state's coordination and the credit-based financial system remained considerable. A shift to some degree in the capital market occurred, especially after 2001.

This observation supported the primary data from interviews and the secondary data on privatizations, mergers, acquisitions, and foreign direct investments. The study argues that the relative change in the capital market triggered the organization's need for independent audit services and other professional services. In addition, the state's high strength of market regulation initiated an extensive regulatory restructuring, especially in the banking industry after 2001, to achieve a more liberal and worldwide integrated economy. This initiation paved the way for multinational companies to enter the Turkish market and increased the competition between large professional services firms to offer multi-disciplinary and inter-disciplinary approaches for addressing increasingly complex client issues (Greenwood, Morris, Fairclough, & Boussebaa, 2010).

4.2 Digitalization Bringing Jurisdictional Conflicts

The empirical data analysis revealed that developments in digital technologies have significantly impacted the financial statement audit process, especially since the 2000s. The Turkish Banking Law, enacted in 2005, directly affected professional service firms locally. Following the IT audit function's establishment in 2005, the increasing digitalization of audit work and ongoing regulatory changes have led to the IT auditors' expansion. The introduction of advanced computer-aided auditing tools into financial statement audit work has helped IT auditors expand their jurisdictions. However, accounting and IT auditors applied different boundary work strategies, resulting in contestation and collaboration. ALPHA established an IT audit function in 2005. IT audit work accounted for 2% of the total financial statement audit work. This ratio increased to 8% in 2010 and 16% in 2019. The study calculated the ratios by dividing the total chargeable hours of IT audit by the total chargeable hours of audit work for each year from 2005 to 2019 (see Figure 4.7).

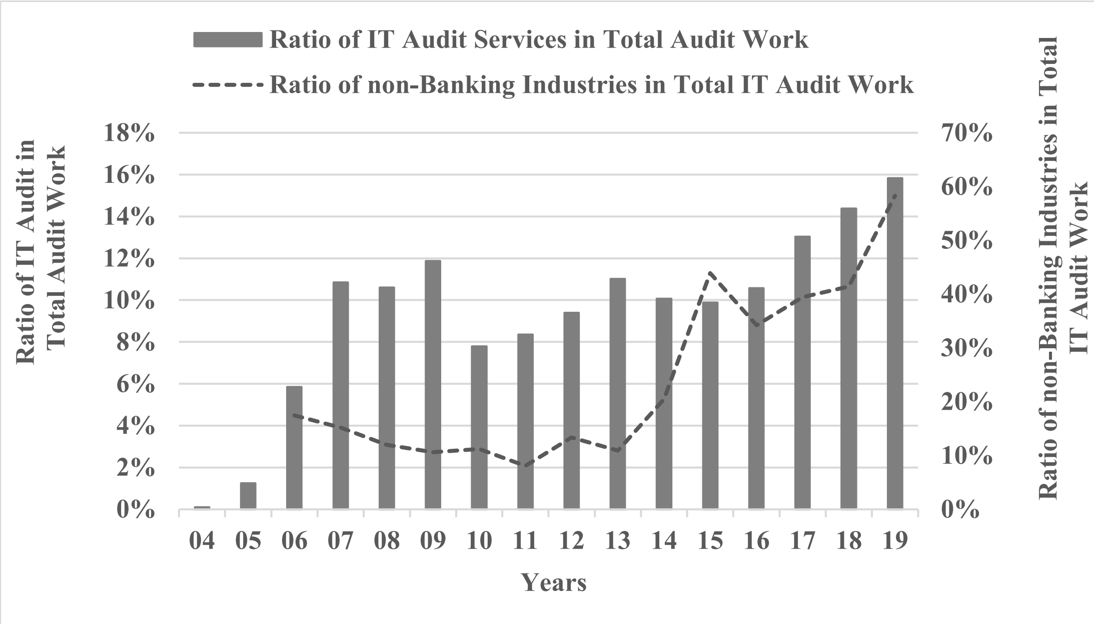


Figure 4.7 : Expansion of IT audit over the years.

On the other hand, the banking industry's share of total IT audit work was 83% in 2006, and the share of other sectors was only 17%. IT audit work was dominated by the banking industry until 2011, and the share of other sectors dropped to 8%. The share of other industries increased to 20% from 2011 to 2014, 34% in 2016, and 58% in 2019. The study calculated the ratios by dividing the total chargeable hours of IT audit work in other industries by the total chargeable hours of IT audit work in all industries, including the banking industry, for each year from 2006 to 2019. The increase in other sectors' shares shows that IT audit work has become more multi-sectoral over the years, rather than dominated by the banking industry until 2011.

The financial statement audit work comprises several phases: planning, understanding of internal controls, risk assessment, audit strategy, performing control testing, substantive evidence gathering, overall review of financial statements, and finalization

(IAASB, 2018). The study presents the findings on the changes in critical activities and shifts in tasks between accounting auditors and IT auditors in Table 4.2.

The most significant changes were in the diagnosis and treatment phases. However, the tasks shifting from accounting to IT auditors is not a replacement but a complementary process. Furthermore, both professional groups must sign the audit opinion provided at the finalization phase, a unique regulation compulsory for audits performed by banks in Turkey.

The study presents the findings in three sections: the acts of professional practice, diagnosis, inference, and treatment. First, the study examines the implications of increasing digitalization on critical activities and jurisdictions changes. Then the study explains the boundary work strategies—reinstating, bending, and pioneering role boundaries—leading to contestation and collaboration between the two groups (see Table 4.3).

4.2.1 Diagnosis phase

The study categorized financial statement audit activities such as planning, understanding the internal controls, and performing audit control testing under the diagnosis section. Accounting auditors analyze their clients' situations and frame the problem during these activities. According to the profession's knowledge bases, such as IFRS, they assess whether the entities prepare financial statements as 'true and fair.' Accounting auditors focus on financial data obtained from clients when conducting this assessment.

However, the Turkish Banking Law's enactment has forced accounting auditors to focus on the information provided by clients. This focus is especially critical in industries with the widespread use of information systems in preparing financial statements, such as banking.

Audit quality has become more dependent on information systems knowledge and, therefore, on accounting auditors' collaboration with IT auditors to evaluate clients' IT environments. As a result, accounting auditors must increasingly involve IT auditors in planning the financial statement audit process:

Table 4.2 : Digitalization's impacts on jurisdictions.

Changes in critical activities	**Set of Audit Tasks**	**Key Phases**	**Accounting Auditors**	**IT Auditors**
• Accounting auditors increasingly become more dependent on IT auditors while planning audit activities • Focus on the completeness and accuracy of information provided by clients rather than the information-being-audited • Accounting auditors must assess risks arising from clients' IT environments • Accounting auditors must consider IT auditors' involvement during fee negotiations and client acceptance processes	• Planning • Understanding the internal controls • Performing controls testing	Diagnosis		
• Accounting auditors decide how much to rely on clients' internal controls based on professional judgment	• Risk assessment • Deciding on audit strategy	Inference		
• Mapping extensive client data with computer-aided tools requires IT competency and skills • Use of automated audit tools and advanced data analytics capabilities requiring IT knowledge to achieve 100% sampling • Accounting auditors and IT auditors sign independent audit opinions separately	• Substantive evidence gathering • Audit opinion • Finalization	Treatment		

> Information systems have become increasingly influential on clients' financial data. They ensured that the trial balance was complete, accurate, and not manipulated. There must be no systemic errors. This property has become directly related to audit quality, especially in industries with increased transaction volumes. Therefore, financial statement and information systems auditing fields are increasingly closely related. (Participant B1, accounting auditor, partner)

Fee negotiations between the two professions are not directly related to professional work. However, the study categorized fee-related changes and relevant contestation and collaboration responses in the diagnosis section because these changes affect planning activities. IT auditors' involvement in financial statement audit work is challenging for accounting auditors. They must negotiate higher fees with their clients or share their revenues with IT auditors.

> As accounting and IT auditors, we understand the value of involving IT auditors to audit clients' information systems. However, it took a challenging transition period for clients to agree to pay additional fees for these additional audit activities. (Participant B6, accounting auditor, partner)

4.2.1.1 Contestation

Accounting auditors have historically been the primary client contacts for financial statement audit work and want to remain contract owners. Accounting auditors prefer to arrange budget allocations in line with their preferences. Not every client agrees to pay the same additional fees for information systems audit work. During the engagement-planning phase, accounting auditors applied a reinstating strategy by allocating limited budgets to IT auditors.

On the other hand, IT auditors must make adequate efforts to complete information system audit activities using their knowledge bases. Therefore, IT auditors complain that these budget constraints make the allocated resources insufficient to add value to the financial statement audit process. When IT auditors demand more planned hours and a higher hourly fee than the contract, it creates tension.

Table 4.3 : Responses to jurisdictional changes through boundary work.

Key phases	**Accounting Auditors**	**IT Auditors**
Diagnosis	*Reinstating role boundaries* • Allocating insufficient budget to IT auditors to add value to the financial statement audit process • Undervalue the procedures performed by IT auditors • Interfere with the general timing of information systems audit activities, having conflicts with IT auditors. • Pressure the IT auditors to allocate the best resources at any time and ask them always to prioritize audit work first. *Bending role boundaries* • Involving IT auditors more in financial statement audit work tailored to the client's demands • Accounting auditors fill in templates to schedule IT auditor's timely involvement in the financial statement audit process • Increasing emphasis on the information provided by the client • Involving IT auditors in fee negotiations with clients during the tender processes • Accounting auditors and IT auditors organize inter-disciplinary training (teaching information systems to accounting auditors) *Pioneering role boundaries* • Introducing new quality and risk management metrics that require IT auditors' involvement at a minimum level in the financial statement audit process	*Reinstating role boundaries* • Focusing on information systems audit reporting rather than on how to add better value to the financial statement audit process due to time pressures and last-minute requests from accounting auditors • Acknowledging that accounting auditors should be the primary contact for client agreements as historically, CFOs sign the audit contracts on the client-side and accounting auditors have better relationships with CFOs *Bending role boundaries* • Gradually asking for more budget to invest in information systems audit activities • Accounting auditors and IT auditors organize inter-disciplinary training (teaching general accounting knowledge to IT auditors) *Pioneering role boundaries* • Establishing a new central resource planning process and planning team to coordinate scheduling activities with accounting auditors

Table 4.3 (continued): Responses to jurisdictional changes through boundary work.

Key phases	Accounting Auditors	IT Auditors
Inference	*Reinstating role boundaries* • Conflicts on IT auditor's controls testing reports, especially when the assessment is ineffective. In that case, the accounting auditor must perform additional tests to mitigate control risks identified by the IT auditors • Accounting auditors use the historical and institutional advantage to make the final assessment of the information systems' criticality	*Reinstating role boundaries* • IT auditors accept reinstating by accounting auditors for conflicts regarding inference related activities • IT auditors agree that the professional judgment on the risk assessment and overall audit strategy should remain within the accounting auditors' jurisdiction
Treatment	*Pioneering role boundaries* • Accounting auditors claim that they can introduce a new data analyst role under the accounting department by training or transferring resources with the expertise required for the use of advanced computer-aided tools • Quality and risk management team presents a new opinion that IT audit resources should use advanced computer-aided tools *Reinstating role boundaries* • Accounting auditors accept that IT audit resources should be involved in the use of advanced computer-aided tools and techniques	*Reinstating role boundaries* • IT auditors claim that they already have the competence to use advanced computer-aided tools, and career management will be complex if these resources are under the accounting department's control

> Suppose accounting auditors are going to be the contract owner. In that case, they should be responsible for negotiating with clients for additional charges. Otherwise, it is challenging for us to add value. Clients will not accept paying additional fees if we cannot add value. It is a vicious circle. (Participant B8, IT auditor, director).

The accounting auditors at ALPHA also criticize how IT auditors add value to the financial statement audit process and question their new role. They claim that IT auditors focus on information systems audit reporting rather than providing insights to accounting auditors on financial statement audit work. The IT auditors' responses to these criticisms indicate that accounting auditors lack information technology knowledge. Therefore, they undervalue the audit procedures of information systems:

> I believe there is a knowledge gap between what we do and what accounting auditors perceive to do. This gap is a real challenge that prevents collaboration and change. (Participant B7, IT auditor, manager)

In addition, for accounting auditors, IT auditors' primary function is to support accounting auditors in the financial statement audit work process. Accounting auditors interfere with the overall timing of information system audit activities, resulting in conflicts with IT auditors. Accounting auditors also pressure the IT auditors to allocate the best resources at any given time and prioritize audit work first. However, IT auditors complain that time pressure and last-minute requests from accounting auditors are unacceptable. Instead, IT auditors demand that accounting auditors change their established ways of working and improving their coordination:

> As IT auditors, we are aligned with accounting auditors on the information systems audit's purpose. We support financial statement audit work by providing accounting auditors with insights into clients' IT environments. We expect our fellow accounting auditors to recognize that we are running a business. Better planning and mutual understanding will help both parties. (Participant B12, IT auditor, senior manager)

4.2.1.2 Collaboration

While analyzing and coding the empirical data, the study did not observe any objection from IT auditors that the client agreements' primary contact should change. The study adopted the semi-structured interview protocol to reveal opposing views during snowball sampling. Nevertheless, the study did not find any contestations from IT auditors. Instead, IT auditors acknowledge that accounting auditors should remain the primary contact for client agreements. Historically, the primary argument is that Chief Financial Officers (CFOs) have signed audit contracts on the client-side, and accounting auditors have better relationships with CFOs. The study has also observed that IT auditors gradually demand more budgeted hours for information systems audits and higher hourly rates.

> New regulations changed the audit work relatively quickly according to digitalization needs. This change was sudden for our clients. The transition takes some time; IT audits' perceived value will improve and, consequently, budget allocations. (Participant B10, IT auditor, partner)

Over time, accounting auditors and IT auditors agree to organize cross-disciplinary training. These training sessions aim to transfer general accounting knowledge to IT auditors and information systems knowledge to accounting auditors. Differences in knowledge bases and the competence gap between the two professions are critical barriers to collaboration. Both sides believe that offering cross-disciplinary expertise beyond traditional roles will contribute to collaboration and financial statement audit work quality:

> I find these cross-disciplinary pieces of training beneficial and consider them a significant step. Thinking about technological developments and the future of audit makes me question how we should define audit expertise and the auditor's role in the future. We need to consider combining accounting and IT auditors' tools and techniques to transform the financial statement audit process into more interdisciplinary work. (Participant B4, accounting auditor, director)

The planning process is one of the causes of the conflict between the two groups. Cross-disciplinary training has increased awareness of the two professions. In addition, the increasing collaboration requirement has motivated accounting and IT auditors to improve their planning processes. Both parties agreed that accounting auditors should fill out planning templates to schedule the IT auditor's involvement in advance. Then, IT auditors should assign appropriate resources and ensure their timely involvement.

In parallel with developments in digital technologies, such as data analytics tools, the need for collaboration has become more visible to accounting auditors. The Banking Law enacted by the BRSA in 2005, followed by the regulatory changes issued by the Court of Accounts and the Capital Markets Board in 2013, caused accounting auditors to emphasize the information provided by the client rather than focusing solely on the audited information. In other words, accounting auditors' acceptance of bent role boundaries accelerates incremental changes in different forms.

> The transformation required to prepare for the future of audits and meet regulators' expectations has become more evident over the past decade. We have begun to invite the IT auditors to client visits to deliver the value of information systems audits to clients directly. IT auditors became part of the fee negotiations with clients during bidding. (Participant B18, accounting auditor, partner)

In addition, both accounting auditors and IT auditors noted that clients are more interested in information systems audit outputs as part of the financial statement audit process. IT auditors increasingly find more opportunities to directly present their expertise and methods to clients as part of a larger multi-disciplinary team.

> In one of the client tender processes, the client chose ALPHA because we offered a comparatively stronger IT audit team than our competitors. We also impressed the client using the proposed information system audit methodology. I believe that achieving this awareness level is an important milestone. (Participant B11, IT auditor, senior manager)

As accounting and IT auditors understood the importance of collaboration on shared interests, they went beyond incremental reframing activities. They even pioneered new formal policies, such as quality and risk management metrics. These policies require IT auditors' involvement at an adequate level in the financial statement audit process, defined by quality and risk management teams. Accounting auditors adopt these policies depending on the client's status, risk rating, and IT environment and make them operational as part of the engagement team's performance monitoring process.

In addition, increasing mandatory IT auditor involvement has led accounting auditors and IT auditors to implement new central resource planning policies. They also created a dedicated team to coordinate planning activities between the two groups, following the agreed guidelines.

> Accounting auditors have lost some of their jurisdiction and judgment due to recent changes, such as introducing new quality and performance metrics or central resource planning policies. I believe this is a necessary transformation. With such a sensitive agenda, especially for regulators, we cannot rely on individual judgments that could impair audit quality and endanger a firm's reputation. (Participant B2, accounting auditor, partner)

4.2.2 Inference phase

The study categorized changes in critical activities such as risk assessment or audit strategy development under the inference section. Accounting auditors perform risk assessments and design an audit strategy based on the profession's relatively tacit knowledge and expertise involving professional judgment. Therefore, they move from diagnosis activities, such as understanding internal controls, to treatment activities, such as substantive evidence gathering and conclusion.

Following the increasing involvement of IT auditors in financial statement audit work, they began providing essential insights to accounting auditors on clients' internal controls. Based on these insights, accounting auditors perform risk assessment activities to identify the risks that may result in financial misstatements. This assessment depends on auditors' industry knowledge and professional judgment.

After assessing the risks associated with the clients' environment, accounting auditors decide how much to rely on internal controls. They also decide to what extent they should perform certain audit activities, such as substantive evidence testing. While this was a phase previously performed by accounting auditors on their own, it has become a standard step in which accounting auditors perform together with IT auditors.

4.2.2.1 Contestation

The study observed minimal contestation cases related to the inference phases. Informants have responded that if the outcome of the IT auditor's assessment is sufficient, the conflict between accounting auditors and IT auditors is minimal. However, in some cases, the result of an IT auditor's assessment is ineffective. This situation means that the audited entity does not have sufficient internal control. In such cases, accounting auditors must perform additional tests to mitigate the inadequate risk controls identified by IT auditors, leading to conflicts between the two professions.

Accounting auditors underestimated the value of IT auditors' assessments of internal controls and retained established methods. This assessment is accurate when the IT audit function is new.

> The IT audit department started in 2005, and the next few years were challenging for us. We received last-minute requests, were under pressure to deliver the assessment report urgently, or dealt with the limited time and budget allocated to carry out IT audit activities. Sometimes, you feel that our colleagues only request assessment reports to tick a box on their checklists and follow their established methods. That was demotivating. However, things have changed positively over the past decade. (Participant B13, IT auditor, partner)

4.2.2.2 Collaboration

Accounting auditors use historical and institutional advantages to protect their jurisdictions before internalizing the value of IT audits and understanding what they are doing. Accounting auditors can maintain established methods despite the final assessment of information systems' criticality. This situation was valid when clients in non-banking industries rarely adopted large-scale information management systems that generate financial data. The regulatory environment is less stringent in non-banking industries than in others. During this period, IT auditors accept reinstations by accounting auditors regarding inference-related conflicts. There was a joint agreement that any inference or judgment that might affect audit opinion should remain within accounting auditors' jurisdiction. The exceptions to this are clients in the banking industry, where IT auditors also sign audit opinions. This exception is unique to the Turkish context:

> We have no conflicts with clients in the banking industry. Both teams follow their established procedures and sign the audit opinion separately. On the other hand, we might have had different assessments, as the two professions work on different knowledge bases and follow different frameworks. Suppose IT auditors' signatures are not required in an audit opinion. In that case, accounting auditors should use professional judgment for internal controls. However, this is less likely today because of interconnected standards and frameworks. (Participant B8, IT auditor, director, and Participant B20, accounting auditor, director)

4.2.3 Treatment phase

Treatment is a phase consisting of audit activities to finalize financial statement audit work. This phase includes the overview of the financial statements, providing audit opinion, and concluding activities. Since treatments are a profession's tools and techniques applied under certain conditions, the study categorized substantive evidence-gathering activities under the treatment section. In this context, the study observed that advances in digital technologies are the main reason for both the contestation and collaboration between accounting auditors and IT auditors during the treatment phase.

Materiality is a critical concept for audit work, indicating that an amount is significant in the transactions and discrepancies that could affect the auditor's report (opinion) on financial statements. As part of the risk assessment and audit strategy phases, professional judgment on materiality and heuristics guides sampling techniques during substantive evidence-gathering. However, the amount of client data is becoming more prominent, questioning the traditional sampling techniques.

In response, Big Four firms have invested in computer-assisted audit techniques and automated procedures to deal with more extensive financial data analysis. This approach also standardizes the audit process and documentation of audit work papers. Accordingly, with the introduction of new data analytics tools and related digital technologies, the vision for the future of auditing is to achieve full coverage of transactions to be audited and less limited to professional judgment regarding materiality and heuristics.

The increasing use of advanced digital tools requires IT knowledge, which helps IT auditors extend their jurisdiction over tasks, such as substantive testing. These testing procedures involve account-based sampling and analysis to identify anomalies and verify account balances. IT competencies, such as data extraction or data mapping, are required to use the advanced capabilities of these tools (i.e., regression testing). Features such as three-way matching automation or data analysis enable a more efficient and comprehensive application of substantive procedures. However, they often require a more extended initial setup, which requires IT system expertise.

Another task requiring IT competence is mapping clients' financial data using computer-aided audit tools. This process determines the significant accounts that require detailed examination. In this context, changes in digital technologies play an essential role in the intersection of accounting auditors and IT auditors' jurisdictions.

> We use established procedures to select sampling within an account balance or transaction. Our clients have increasingly more data. This situation may leave auditors with a trade-off between increasing the sampling size [extending audit work] or decreasing the coverage [accepting more risks]. An alternative response to this trade-off is the introduction of advanced data analytics tools. However, the challenge is that we need to gain IT expertise or increase collaboration with IT auditors. (Participant B21, Accounting Auditor, partner)

Regulatory changes dealing with the increasing digitalization of audit work affect the treatment phase and intersect accounting and IT auditors' jurisdictions. For example, the Banking Law requires accounting and IT auditors to sign independent audit opinions separately. This regulation is specific to Turkey's context and is mainly valid for the banking industry.

> IT auditors are involved as experts in the financial statement audit process in many other countries. However, the situation in Turkey is different for bank audits. IT auditors and accounting auditors sign independent audit opinions separately. Initially, this policy covered only bank audits. However, we have started to see that it extends to the audit of other non-banking financial services institutions. (Participant B22, IT auditor, manager, and Participant 23, accounting auditor, manager)

4.2.3.1 Contestation

The study observed accounting auditors' pioneering role in boundary work in response to the jurisdictional changes driven by digital technologies. Accounting auditors initially argue that introducing a new data analyst role to the accounting department can redefine their competency sets and go beyond the traditional role. Thus, accounting auditors can perform tasks related to advanced computer-aided tools by training internal resources or transferring external resources:

> If the future of audit requires greater use of advanced digital tools, we must start doing it ourselves. Why should we be dependent on another profession even if we are in the same firm? (Participant B5, accounting auditor, director)

On the other hand, IT auditors claim they can use advanced computer-aided tools. Besides, suppose accounting auditors put a new role with a different background than accounting, such as data analysts, into their department. In such cases, they experience career management difficulties for these resources.

> I do not think hiring IT professionals and placing them in the accounting audit department benefits the firm. As IT auditors, we already have the necessary skills and have worked with accounting auditors for over a decade. How will the firm manage data analysts' careers? Imagine yourself in a work environment surrounded by experts whose language and culture are not understood. Also, the career opportunities that the accounting audit department can offer these individuals will be limited. (Participant B16, IT auditor, manager).

4.2.3.2 Collaboration

After several discussions about hiring data analysts for the accounting audit department, the company decided that IT auditors should support accounting auditors with advanced computer-aided tools. This situation is because the global trend is towards specialization rather than being a generalist. In addition, activities such as data extraction or mapping require collaboration with clients' IT teams. In addition, the quality team mentions that IT auditors are more apt to perform such activities. They suggest that the firm's goal should be to improve collaboration between accounting auditors and IT auditors rather than transferring IT professionals to the accounting audit department.

> As an accounting auditor, I agree that we should focus more on collaboration with IT auditors rather than doing these activities independently. I am not saying that we do not need to develop IT-related skills. We should keep doing this (e.g., cross-training). Our clients want to work with subject matter experts, and IT auditors already have experience in digital technologies such as advanced data analytics. (Participant B14, accounting auditor, partner)

5. DISCUSSION

The discussion chapter starts with a detailed discussion of digitalization's implications on professional work. This section includes a theoretical model and propositions to link findings with literature and to suggest directions for future research.

The chapter also summarizes the main points of the findings of how a PSF becomes a professional service conglomerate. It describes how digitalization creates jurisdictional conflicts between professions. Then, the discussion chapter summarizes the main points regarding the implications of digitalization on professional work. Finally, the chapter discusses the relationships with prior research and concludes by discussing the contributions.

5.1 Implications of Digitalization on Professional Work

The study asks how intelligent technologies change professions and their work considering economic and technological perspectives. Barley (2020) has asked a similar question, "how do technologies change organizations?" and proposed a framework to answer.

Barley suggested examining technological change's implications on work practices in his framework since this change potentially affects the role of relationships. The changes in role relationships will eventually affect the social networks that are an organization's structure. As the starting point, the study highlights the importance of work practices and scripts: "The analyst's job is to determine whether the presence of a technology has somehow reconfigured the scripts, the stage, the props, the moves that actors make, or the encounter's footing in ways that sustain an altered or different line of action" (Barley, 2020).

The study has shifted the focus from economic or technological views to professional work practices to understand how intelligent technologies change professions, taking stock from this framework. This shift in focus has led the study to the literature on professions. Abbott (1988) has emphasized the importance of specifying forces that affect the content and control of work practices. The study also underlined how disturbances in content and control spread across a system of professions and jurisdictions is the best way to examine a shift in a profession (Abbott, 1988).

In order to understand the implications of technological change on professional work, we need to have a conceptual integration of technology and the literature on professions. We should develop our propositions based on professional practice and avoid considering the effects of technological change on professional work.

What are the characteristics of professions, and what do they do? Professional service firms are often associated with high knowledge, low capital intensity, and professionalized workforces. Professions occupy, regulate and control a particular knowledge base and its application, mitigating threats to their professional jurisdictions. In this context, professions can obtain social closure by closing off entry to the profession to all but those suitably qualified (Abbott, 1988; Nordenflycht, 2010).

Abbott (1988) divided professional work into three phases of professional practice: diagnosis, inference, and treatment. In the first phase, professionals diagnose a problem by determining its nature and relating it to their profession's knowledge bases. In order to do that, professionals acquire relevant and valid facts to develop a rational and objective understanding of their client's problem. It is also essential for professionals to use these facts acquired in conjunction with the professional dictionary to characterize problems legitimately.

In the second phase, professionals mediate diagnosis and treatment activities based on the profession's tacit knowledge. This " inference phase" is a true act of a profession because professions connect diagnosis and treatment activities based on evidence, reasoning, and abstract knowledge to conclude. In the third and final phase, professionals develop a list of potential treatments and deliver these treatments in prescriptions or other therapies.

Diagnosis and treatment are two phases where professionals interact with their clients. These interactions can consist of routine or non-routine tasks requiring manual or cognitive abilities. Assume that a profession performs core activities throughout diagnostic acts based on a more restrictive dictionary. In that case, the profession is less vulnerable to the implications of technological change.

However, a profession may perform periphery activities based on a less restrictive dictionary. Then the profession is more vulnerable to technological change because the technological change may redefine and rebuild the professional vocabulary, resulting in a weakening jurisdiction for the profession. On the other hand, using technology can enable professionals to consume larger sets of data and link this big data to a more extensive dictionary more effectively and efficiently.

Similarly, professionals interact with their clients on treatment activities while applying procedures and toolkits. Suppose these procedures and toolkits are routine tasks requiring less abstract knowledge or improvising. In that case, the jurisdiction will be more vulnerable to technological change and less defendable. Technological change can enable professionals to apply their procedures and toolkits more productively. Suppose professions develop new skills around technological changes. In that case, this can also enable them to deliver therapies remotely, making them more accessible to society.

On the other hand, the inference is the critical phase in examining the implications of technological change on professions. Professions make judgments, declarations, or conclusions to progress from diagnosis to treatment. In return for qualified knowledge, professions have authority over a particular field. As a result, people grant validity to professionals' judgments, statements, or decisions. However, these inference acts depend on a profession's tacit knowledge. The profession's abstraction skills make them less subject to challenges driven by technological change. On the other hand, excessive use of abstract knowledge weakens a profession's jurisdiction. Using available technology can delegitimize the profession.

The study discusses in the next section what the three phases of professional practice might mean when professions deal with enabling and displacing intelligent technologies, drawing on the literature on professions literature. The study juxtaposed these concepts on a 3x2 table (see Figure 1) and linked previously unconnected concepts in a novel way. In this way, the study explains the typology of professional practice and technology relationship, enhancing our understanding of the phenomenon of technological change's implications on professions and offering propositions for future research.

5.1.1 Enabling Technologies

Lawyers are often associated with high costs making them less accessible to society. Similarly, accessing high-quality professional services from advisors, hospitals, schools, and consultants is not affordable for most people. On the other hand, the technological change enables professionals to increase productivity by restructuring diagnosis and treatment practices. For example, legal professionals use algorithms to process large volumes of legal documents, which was previously a time-consuming task. This way, legal professionals invest this time directly in client interactions and dealing with complex problems (Susskind D. , 2020).

Table 5.1 : Professional practice and intelligent technology relationships.

		Intelligent Technology	
		Enabling	**Replacing**
Professional Practice	**Diagnosis**	Increasing professionals' *productivity* Making professionals more *accessible*	*Fewer* but more *qualified* professionals *Jurisdictional conflicts* with other professions
	Inference	Increasing the professions' *legitimacy*	*The disappearance* of the profession
	Treatment	Increasing professionals' *productivity* Making professionals more *accessible*	*Fewer* but more *qualified* professionals *Jurisdictional conflicts* with other professions

Another example is independent financial auditors who use sophisticated computer-aided tools to analyze large volumes of financial data. Digital tools and controls enable auditors to validate the completeness of extensive client data. This initial data analytics also enables auditors to identify significant and high-risk accounts to define their audit strategy. Later, auditors focus their efforts on substantive analytical procedures and validate the accuracy of significant accounts, making independent audits more productive (Kokina & Davenport, 2017).

Video conferencing and business communications platforms enable professionals to perform diagnostic activities and deliver treatments remotely. Patients can have video consultations with doctors, psychologists can deliver online therapies, and even advances in telesurgery enable surgeons to operate remotely (Susskind & Susskind, 2015). In addition, the pandemic period that started with Covid-19 showed that many professionals have practical and productive experiences when they work remotely using communication technologies (Schwab & Malleret, 2020).

The study developed the following propositions regarding enabling technologies' implications on professional diagnosis and treatment practices in this context.

Proposition 1: The enabling technologies help professions increase the productivity of diagnosis and treatment practices.

Proposition 2: The enabling technologies make professions more accessible by society for diagnosis and treatment practices.

Independent financial statement auditors must analyze increasingly large transaction volumes and financial data while auditing client enterprises (Brown-Liburd, Issa, & Lombardi, 2015). Regulators often consider traditional sampling methods insufficient, asking for thorough approaches (KPMG, 2016). Regulators' direct criticism of the procedures employed in independent auditing, a heavily regulated industry, impairs the auditors' jurisdiction.

Over time, auditors have improved their traditional approaches based on sampling selection by using advanced data analytics tools and similar digital solutions. Adopting data analytics tools helped auditors improve their inferences about deciding on materiality, significant accounts, and audit strategy. In this context, technology-enabled auditors strengthen professional jurisdictions and the profession's legitimacy.

Similarly, IBM's Watson product can complement the inference practices by helping oncologists diagnose cancer and advise treatment plans. The healthcare industry uses many diagnostic technologies. While these technologies make diagnostic activities more productive, they also support inference activities. The use of the latest technology improves the credibility of healthcare professionals (Susskind & Susskind, 2015).

The use of enabling technologies further improves the legitimacy of professions by supporting inference procedures, where professionals often employ tacit expert knowledge. In this regard, the study developed the following proposition regarding enabling technologies' implications on inference practices.

Proposition 3: The enabling technologies help professions increase their legitimacy for inference practices, making them less vulnerable to jurisdictional threats.

5.1.2 Replacing Technologies

Humans will have more access to intelligent technologies that continually check our vital indicators (Chace, 2016). We have already observed an increasing adoption of wearable health devices that better monitors our health status (Dias & Cunha, 2018). In addition to these, e-government applications store and centralize individuals' health data and enable sharing between healthcare institutions.

As these technologies constantly monitor more vital statistics, many doctors and nurses lose their employment as more diagnostic practices become automated (Chace, 2016). However, using these large amounts of data and establishing links with professional dictionaries for diagnosis by applying expert knowledge necessitate acquiring new skills, such as data analytics (Ross, 2017).

Furthermore, increasing intelligent technologies can alter the role relationships between professions. Growing transaction volumes, digital transaction recording, and related digital auditing tools have made accounting audits increase their technology dependency. As a result, IT auditors' claims increasingly challenge the professional jurisdiction of accounting auditors. Digital tools also enable making audits with fewer auditors. In order to achieve that, auditors need to develop their competencies in the IT field. However, this situation points to another problem. Technology has taken over routine and non-judgmental tasks. However, these tasks also play essential roles in junior auditors' training (Koktener & Tuncalp, 2021).

The example of accounting auditors and IT auditors encapsulates a more general phenomenon. The excessive division of labor may prevent professionals from improving their judgments and developing their expertise due to various problems. Professionals may lose their ability to grasp a holistic view of relevant work practices when they hand over many components to other professions or AI functions (Acemoglu, 2021).

The potential for e-learning to reshape higher education's organizing is receiving more attention. Advances in information and communication technologies reshape the delivery of information. On the other hand, the profession's institution, discipline, and feelings define academic identities. Academics prioritize their profession more than their affiliations. However, e-learning may have implications for academic identities. Academic culture's historic collegiality is on the wane. Academics claim that a sense of isolation is their direct experience.

Moreover, e-learning is a tool to deliver education in a more efficient and accessible way. Some argue that the widespread acceptance of e-learning tools as the unavoidable path ahead for universities is a questionable technological determinism. Academics may still organize to retain considerable influence over their teaching jobs (Hanson, 2009). Current investments in education center on applying artificial intelligence for automated grading and creating online learning tools to replace various teaching activities.

On the other hand, AI may be used to change teaching materials in real-time to the requirements and attitudes of different students and solve difficulties with traditional classroom teaching (Acemoglu, 2021). Thus, the study developed the following propositions regarding replacing technologies' implications on professional diagnosis and treatment practices.

Proposition 4: The replacing technologies transform diagnosis and treatment practices requiring fewer but more qualified professionals.

Proposition 5: The replacing technologies trigger jurisdictional conflicts with other professions' diagnosis and treatment practices.

While the replacing technologies displace a subset of professionals from diagnosis and treatment practices, these technologies can make professions obsolete if they take over inference practices. The inference practices are actual acts of professions (Abbott, 1988); connecting diagnosis and treatment activities based on evidence, reasoning, and abstract knowledge. Therefore, they are less vulnerable to technological claims. However, once affected, the consequences for professions can be disruptive.

Taxi drivers are professional drivers using taxicabs to transport clients to their desired destinations. They generate income based on the length of the taxicab ride. Taxi drivers can purchase their taxi and become responsible for all aspects of the taxi, lease the taxicab to other drivers and manage their driving schedule. In order to do that, taxi drivers need to apply for a certificate of good conduct, have a taxi license, and have specific certifications.

Drivers should always keep a safe distance from other vehicles. They should pay attention to blind spots, obey speed limits, use lanes correctly, and drive following the country's rules and regulations. These rules require taxi drivers or other commercial drivers to continuously gather information about the surroundings and perform manual and cognitive activities while operating vehicles. On the other hand, self-driving cars or autonomous vehicles can make sense of their surroundings and operate without human input. With various AI technologies and vehicular automation, self-driving cars make obsolete chauffeurs and commercial driving jobs (Chace, 2016).

Do we still need retail pharmacists? The profession evolved from focusing on compounding pharmaceuticals to dispensing pre-made medications. As a result, pharmacists have evolved into a profession in charge of managing acquired inventory for selling to patients (Aungst, 2018). The worry of technology replacing such tasks is understandable. Many pharmacists are today devoted to reviewing prescriptions and administering pharmaceuticals. The advances in AI and automation can be a significant threat to the profession if the pharmaceutical industry remains bound to traditional and linear thinking that assumes the future will continue the past (Baines, Nørgaard, Babar, & Rossing, 2020).

At the heart of these debates and expectations is pharmacists' loss of control of their inference practices to automation, which is to understand the prescriptions given by doctors and dispensing the right medicines to patients. Therefore, replacing technologies replaces large sub-professionals without creating new jobs or offering reskilling opportunities. In this regard, the study developed the following proposition regarding replacing technologies' implications on inference practices.

Proposition 6: Replacing technologies employed for a profession's inference practices leads to the disappearance of the profession.

In this section, the study conceptualizes the phenomenon of technology's implications on professions and generates novel insights for future studies on professional work by formulating a list of propositions. The propositions structure the current fragmented discussions about the future of professions by organizing critical aspects of the phenomenon and analyzing them through the theoretical lenses of professions literature.

In the following sections, the study argued the relevance of the theoretical approach to the current literature, which brings together the technology and professions literature. The study explained how the propositions could contribute to future studies. Also, the study discussed the managerial implications of the theoretical approach and propositions.

5.2 Summary of Main Points

This study has explained a single-profession accounting firm's transformation into a multi-partnership, multi-disciplinary, and inter-disciplinary professional service conglomerate in 40 years (Suddaby & Greenwood, 2001) from a historical perspective (Bucheli & Wadhwani, 2014). The study developed how and why distinctive professional groups (Malhotra & Morris, 2009) with internal conflicts (Abbott, 1988; Abernethy & Stoelwinder, 1995) remain under a single professional service firm. The empirical data were from the participant observations, archival data, and 30 semi-structured interviews. The study analyzed these and becoming a PSC in an emerging country with substantial state involvement (Whitley, 2005). Changes in regulations and developments in digitalization played an essential role in bringing different professions together.

Besides, the study examined digitalization’s implications for existing and emerging professions (Susskind & Susskind, 2015). The study focused on the effects of digitalization on accounting and IT auditors’ jurisdictional arrangements. The study explored the changes in activities and tasks of audit work due to digitalization, drawing on data collected from 25 semi-structured interviews, participant observations, and secondary data analysis. The study also demonstrated how the jurisdictions have changed in each professional practice act (Abbott, 1988). It illustrated how accounting and IT auditors have responded to these changes through boundary work (Bos-de Vos, Lieftink, & Lauche, 2019).

Increasing digitalization impacts the financial statement audit work, previously performed only by accounting auditors but today together with IT auditors. The IT auditors’ involvement in financial statement audit work increases over time, first in banking and financial institutions and later in other industries. Accounting auditors increasingly become more dependent on IT auditors while planning audit activities, understanding the clients’ internal controls, and performing a test of controls.

Accounting auditors first underestimated IT auditors' value and allocated short hours for IT auditors to perform their procedures. However, accounting auditors later involved IT auditors more, and the two professions organized inter-disciplinary training.

They also introduced firm-wide policies and created a centralized team to coordinate IT auditors’ involvement in the audit process at a minimum level. In addition, substantive evidence gathering activities increasingly require computer-aided tools with advanced data analytics capabilities, demanding IT competency and skills within the audit team. Accounting auditors first claimed that they could introduce a new data analyst role to address this competency gap. However, they later accepted that IT auditors should perform activities requiring advanced computer-aided tools. On the other hand, accounting auditors continue to conduct risk assessments independently and decide how much to rely on clients’ internal controls based on professional judgment. IT auditors accepted that the accounting auditors should do such assessments requiring professional judgment.

Lastly, the study used technology literature as the domain theory and professions literature as the method theory to advance current debates and develop propositions for future studies. The current literature on technological change and its implications on occupations and work helped to understand the current perspectives in this area. Then the study used professions literature as the method theory to study the implications of technological change on professions and their practices. The study has developed propositions about how enabling and replacing intelligent technologies affect professions' diagnosis, inference, and treatment activities. The study sought to advance current debates on technologies’ implications on work by drawing perspectives from the literature on professions (Jaakkola, 2020).

5.3 Relationship with Previous Research

The literature on professions and their organizations has three major theoretical streams explaining accounting firms' transformation into professional service conglomerates. First, the role of political, economic, and regulatory developments (McKenna, 1995; Wright C. , 2000; Cooper & Robson, 2006; David, 2012); second, the market model of analysis (Ferner, Edwards, & Sisson, 1995; Greenwood &

Suddaby, 2006); and third, the purposeful actions of professional groups and their organizations (Suddaby & Greenwood, 2001; Gardner, Anand, & Morris, 2008).

This study traces these current explanations in a state-organized business system and an emerging country. The findings showed that Turkey's implications of broader political, economic, and regulatory changes significantly affected a professional service conglomerate's formation. The findings also argue that changes in the institutional features and business system characteristics (Whitley, 1999) play a pivotal role in forming PSCs. In comparison, changing market dynamics mediate the institutional environment and this formation.

External pressures such as increasing digitalization and relevant regulatory changes bring different professions together (Ancona & Caldwell, 1992). They also create jurisdictional tensions in multidisciplinary settings (Davidson & Chismar, 2007). These pressures intersect professional jurisdictions (Barrett, Oborn, Orlikowski, & Yates, 2012) and generate conflicts (Barley, 1986; Abbott, 1988). Professions respond to these jurisdictional conflicts through boundary work (Allen, 2000; Gray, Hogg, & Kennedy, 2011; Bos-de Vos, Lieftink, & Lauche, 2019).

However, there is still little knowledge on the implications of digitalization and relevant regulatory changes on professional groups organized in professional service firms. Different professions, such as audit, tax, or consultancy, dispute and renegotiate their jurisdictions in professional service conglomerates under digitalization and regulations (Susskind & Susskind, 2015). Professionals pursue boundary work in established (Heusinkveld, Gabbioneta, Werr, & Sturdy, 2018) or dynamic contexts (Bos-de Vos, Lieftink, & Lauche, 2019). It deserves more attention to study how existing and emerging professions deal with jurisdictional conflicts when digitalization favors an emerging profession (Pache & Santos, 2010; Taminiau & Heusinkveld, 2020). Despite the accounting auditors' privileged positions within the Big Four firms, the increasing influence of digitalization imposing new challenges to accounting auditors' jurisdictions is of particular significance.

This study explores how existing and emerging professions in the same PSCs cope with digitalization. In this case, increasing digitalization and relevant regulatory changes impact critical activities and tasks of audit work. They have reshaped established jurisdictional arrangements and altered inter-professional and intra-organizational dynamics. Regulations dealing with increasing digitalization have defined the boundaries (Lamont & Molnar, 2002). The study focuses on changes and shifts in professional practices to examine the implications of digitalization for accounting auditors (Abbott, 1988). The study also explores how the two professions respond to jurisdictional conflicts through boundary work (Bos-de Vos, Lieftink, & Lauche, 2019).

The increasing use of intelligent technologies such as artificial intelligence (Kallinikos, 2006; Björkdahl, 2020) emphasizes the need for studies dealing with digitalization’s implications on professions and their organizations (Susskind & Susskind, 2015; Kronblad, 2020). A broader debate is whether intelligent technologies will enable professions to be more productive and valuable to society. Alternatively, these technologies will replace professional practices, displacing a subset of professionals (Acemoglu, 2017).

This debate is also valid for existing professions, such as accounting audit. Digital technologies may enable them to be more effective and increase the value of audits when they collaborate with emerging professions, such as IT auditors. Accounting auditors improve the productivity of the audit process, increase the value of audit and demand for their services with IT auditor collaboration and advanced digital tools (Brown-Liburd, Issa, & Lombardi, 2015; Appelbaum, Kogan, & Vasarhelyi, 2017; Armour & Sako, 2020). On the other hand, increasing use of computer-aided tools can reconfigure jurisdictions over critical audit activities, displacing a subset of accounting auditors from the Big Four firms (Brynjolfsson & McAfee, 2014; Susskind & Susskind, 2015; Kronblad, 2020).

To explore this debate and better understand the change in the audit profession, the study analyzed digitalization’s implications that affect the content and jurisdictions of audit work between the accounting auditors and IT auditors (Abbott, 1988). The study has observed jurisdictional changes in critical activities and tasks, mainly during the diagnosis and treatment. However, the observation of the jurisdictional changes in the inference phase was minimal.

Increasing audit digitalization has intersected the jurisdictions of the two professions during the diagnosis and treatment phases. However, accounting auditors’ abstracting ability has made their profession less vulnerable to others’ jurisdictional claims during the inference phase (Abbott, 1988). Besides, accounting auditors have maintained strong arguments that they have a holistic view and responsibility for the financial statement audit process. They argued that IT auditors should have an atomistic role and be involved only in certain activities (Allen, 2000).

The study has also observed that IT auditors’ involvement in the diagnosis and treatment phases has helped accounting auditors improve audit quality. This observation has also helped accounting auditors better manage the expectations of regulators and clients. In this context, IT auditors’ involvement and increasing use of advanced computer-aided tools in financial statement audit work does not replace accounting auditors' professional practices but complements better understanding and professional judgment.

The study’s findings also show that professions can apply different boundary work strategies to cope with jurisdictional threats from emerging professions over the three acts of professional practice (Abbott, 1988). Existing professions use reinstating, bending, and pioneering role boundaries while dealing with jurisdictional threats during the diagnosis phase. Besides, existing professions first undervalue the professional work of emerging professions and pressure the emerging profession to limit their involvement. However, existing professions can later involve the emerging professions incrementally when the value of inter-disciplinary work becomes visible. This involvement and inter-disciplinary work can become established by firm-wide actions such as introducing organizational policies, creating new teams, or centralizing shared processes and activities.

Unlike the diagnosis phase, the two professions implicitly agreed to maintain existing jurisdictional arrangements for the inference phase. However, the two professions have applied different response strategies to extend their jurisdictions over the treatment phase. Previous studies have suggested that professions adopt reinstating role boundaries during the contestation stage. Then, they gradually adopted bending strategies in the transition period and often adopted bending and pioneering strategies in the collaboration stage (Bos-de Vos, Lieftink, & Lauche, 2019; Taminiau & Heusinkveld, 2020).

The findings illustrate that existing professions can apply a combination of response strategies in jurisdictional disputes against emerging professions over the diagnosis, inference, and treatment phases. Suppose digitalization improves the productivity and the quality of professional practices. These changes could help the two professions reduce contestation and increase collaboration over time (Bucher, Chreim, Langley, & Reay, 2016; Taminiau & Heusinkveld, 2020).

On the other hand, if digitalization threatens an inference act, existing professions maintain jurisdictional demarcations. This response reinstates role boundaries (Bos-de Vos, Lieftink, & Lauche, 2019). Inference originates from the professions' tacit knowledge and expertise (Abbott, 1988). Controlling inference acts makes professions less vulnerable to emerging professions or digitalization threats. However, if professions cannot control inference acts, they risk becoming obsolete.

Later, the study establishes links between the case study findings and the broader debate on whether digitalization will enable professions to be more productive or replace them. For this aim, the study outlined the composition of professional activity by describing the three acts of professional practice: diagnosis, inference, and treatment (Abbott, 1988). Later, the study examined the implications of enabling and replacing technologies for these professional practice acts. After that, the study juxtaposed these concepts on a 3x2 table and explained the connections with examples referring to existing studies and perspectives.

The study argued that enabling technologies help professions increase the productivity of diagnosis and treatment practices, making them more accessible by society in general. In addition, the study argued that enabling technologies could increase professions' legitimacy and make them less vulnerable to jurisdictional threats. However, the study proposed replacing technologies could result in fewer but more qualified professionals by transforming the diagnosis and treatment practices while triggering jurisdictional conflicts with other professions. Lastly, the study debated that replacing technologies can lead to the disappearance of a profession if they take over inference practices.

While dealing with the implications of technological change on occupations, economists often develop their perspectives around two key concepts, productivity and displacement effects (Acemoglu, 2021). The economic view argues that technological change causes technological unemployment in the long term. Displacing a subset of labor with automation in the short term will create new jobs and reskill labor in the long term (Acemoglu & Autor, 2011; Acemoglu & Restrepo, 2019). The existing studies' level of analysis is generally at the society level (Acemoglu & Restrepo, 2018; Acemoglu, Manera, & Restrepo, 2020). This perspective contributes to the literature to understand why the Control Revolution or the Fourth Industrial Revolution may have different implications on net employment than previous industrial revolutions. However, its focus is generally at the society level and not at the professions level.

Furthermore, the central discourse of the technologist perspective is that artificial intelligence and automation replace what kinds of tasks (Reese, 2018). According to this view, manual or cognitive tasks are more vulnerable to labor displacement. Non-routine tasks are in danger of replacement by artificial intelligence and automation (Brynjolfsson & McAfee, 2014; Chace, 2016). The study believes the main contribution of this perspective is to provide an understanding of enabling and displacing technologies' implications on different types of tasks. However, current studies following the technological perspective are often insufficient to delve deeper into technological change's effects on professions as they deal with professions and their work.

When a profession loses jurisdiction and becomes obsolete, it does not mean that the outcome for society, in general, will necessarily be technological unemployment. Technological change can make a profession obsolete and cause short-term unemployment. However, the unemployed laborers can move to other fields without long-term unemployment. The focus of the study here is at the level of professional practices to examine the implications of technological change on professions, not society in general.

Similarly, automation of tasks may cause short-term or long-term unemployment but does not necessarily make a profession obsolete. Automation of specific tasks related to diagnosis and treatment can even make professions more productive and make them more accessible. In addition, the technologist perspective's focus at the task level contributes to understanding technological change's implications on occupations and jobs. However, professions' characteristics and practices are unique and require the lens of professions literature.

The number of studies that examine the technological change's impacts on professions in depth from the professions literature perspective is increasing. However, these studies focus on single case studies and deal with the technology's implications on one or two professional groups often (Barley, 1986; Nelson & Irwin, 2014; Appelbaum, Kogan, & Vasarhelyi, 2017; Gresser & Lowenthal, 2019; Koktener & Tuncalp, 2021).

5.4 Contributions

The study's contributions to the literature are threefold.

Firstly, the study pointed to the critical role of the national business systems in forming PSCs. The study contributes to the theoretical explanations by emphasizing the role of dominant owner control type, state-driven regulations, and shifts in the financial system over market-driven models or professional groups' purposeful actions. Taking an institutional lens (Greenwood & Suddaby, 2006; Leicht & Fennell, 2008), the current literature discussed that the institutional environment conditions the form and boundary dynamics of PSFs. However, it does not explain the mechanisms in detail. This study presented these mechanisms by explaining how changes in institutional features and business characteristics increase the need for independent audit services and other professional services and the competition between PSFs. Consequently, the three PSF characteristics change (multi-partnership, multidisciplinary, and inter-disciplinary) and form the PSCs.

The study also observed that changing market dynamics is another factor in PSF characteristics changes. This observation follows some of the earlier literature (Ferner, Edwards, & Sisson, 1995; Greenwood & Suddaby, 2006; Greenwood, Morris, Fairclough, & Boussebaa, 2010). However, the analysis showed more of a mediating role between national business system characteristics and PSF characteristics. There are also alternative explanations for the proliferation and expansion of professional services in the literature, such as arguing the pioneering role of institutional entrepreneurs (David, Sine, & Haveman, 2013) or creating a new practice area and forming legitimacy (Gardner, Anand, & Morris, 2008). However, the observations for this are limited to the empirical setting.

Moreover, the study outlined what keeps distinct professional groups inside an organization's boundaries instead of establishing independent professional firms, bringing additional insights to organizational boundary literature. The study used observational, informant-centric, and archival data for about 40 years, making the examinations over extended periods instead of focusing on selected moments of change. While current studies are primarily cross-sectional, explaining the PSC formation with a historical perspective and longitudinal view (Bucheli & Wadhwani, 2014) contributes to the literature. The study attempted to explain the underlying factors for forming PSCs rather than capturing a limited understanding of a situation at a particular time (Clark & Rowlinson, 2004). The study believes that the case study is unique with its theoretical focus, sizeable historical span, and rich, comprehensive content.

Moreover, how exogenous jolts (Sine & David, 2003) led to institutional change is an interesting observation of the study. These factors had significant implications for the forming and transformation of large accounting firms. For instance, the coup d'état and era of globalization followed by financial liberalization efforts in the early 1980s did the groundwork for forming large accounting firms. Later, the major economic crises and era of financialization followed by extensive regulatory restructuring programs in the early 2000s paved the way for transforming into professional service conglomerates in Turkey.

Besides, as a non-Western country, the empirical setting is likewise a novelty, bringing a contribution. The more significant part of the current studies is just from Western backgrounds and originate from strongly market-based institutional settings (Brock, Leblebici, & Muzio, 2014). The case is unique compared to common examples in the literature. However, it is more like other developing country settings with substantial government influence.

Secondly, the study advances the understanding of digitalization's impact on existing and emerging professions. Intelligent digital technologies may increase the effectiveness of professions (Brown-Liburd, Issa, & Lombardi, 2015; Appelbaum, Kogan, & Vasarhelyi, 2017; Armour & Sako, 2020) or replace them (Brynjolfsson & McAfee, 2014; Susskind & Susskind, 2015; Acemoglu, 2017). The study emphasized the importance of analyzing the changes in the content and control of work over professional practice acts (Abbott, 1988) to understand digitalization's implications better.

The findings show that digitalization changes the critical activities and jurisdictions in the diagnosis and treatment phases, enabling professions to be more productive and increasing the value of their professional practices. However, changes in critical activities and jurisdictions related to the inference phase can displace existing professions by the threats from emerging professions and intelligent technologies.

Also, the study argues that existing professions deal with jurisdictional conflicts when the digitalization trend favors an emerging profession. Technological developments may lead to a jurisdictional intersection and generate conflicts (Davidson & Chismar, 2007; Barrett, Oborn, Orlikowski, & Yates, 2012). Professions respond to these conflicts through boundary work (Allen, 2000; Gray, Hogg, & Kennedy, 2011; Bos-de Vos, Lieftink, & Lauche, 2019). They can reduce contestation and increase collaboration over time through boundary work (Taminiau & Heusinkveld, 2020).

The findings show that existing professions can respond to jurisdictional conflicts differently for each professional practice act. They can apply different role boundary strategies to reduce contestation and increase collaboration when collaboration with emerging professions enables productivity and increases the value of professional work. The analysis argued that existing professions could collaborate with emerging professions through boundary work in the diagnosis and treatment phases. However, they can agree on maintaining existing jurisdictional arrangements for the inference phase.

Thirdly, the study outlines the economist and technologist views of technological change's implications on work. Current views have two opposing views. They suggest technology replaces most jobs resulting in long-term technological unemployment or some jobs resulting in short-term technological unemployment. However, it may bring prosperity by reskilling labor and creating new jobs in the long term. This study offers an alternative path for studying professions. Technological changes may replace a profession, displace others, create a new profession, improve productivity, make it more accessible, or make a profession obsolete. This study argues that this result depends on which act of professional practices are affected.

The study structures the fragmented contributions of prior work by analyzing the implications of technological change through the theoretical lenses of the literature on professions. The study also advances our current thinking about the phenomenon by bridging the technology and professions literature and organizing the critical dimensions on a 3x2 table. This conceptual integration reveals broader patterns, linking previously unconnected concepts and structuring current contributions in a novel way. In this way, the study introduces a theoretical approach that allows studying the implications of technology on professions in a structured manner. In addition, this juxtaposing helps develop propositions and offers directions for future research.

6. CONCLUSION

Digital technologies affect the content and control of work among professionals in many industries. The study analyzes primary data collected from a single case. It contributes to the broader debate about whether digital technologies enable professions to be more productive and valuable or whether these technologies can replace professional practices and displace a subset of professionals. The findings indicate that accounting auditors can collaborate with emerging professionals in the diagnosis and treatment phases to increase the effectiveness and value of their professional work. However, they collaborate less in the inference phase to maintain favorable conditions.

6.1 Limitations

While the study examined an extended period, the findings and the theoretical model were based on a single case study. Therefore, comparative empirical findings from other settings, such as studying other Big Four firms, other multi-profession PSFs like large consulting houses, and collecting data from different countries would improve the contributions. This condition is the major limitation of the study. It would also be worthwhile to investigate the senior-level professionals. They leave their organizations during the transformation into PSCs. Especially, examining why they have left and how they have chosen to continue their professional careers would be interesting.

6.2 Recommendations

In future studies, comparative empirical studies in other settings, like other multi-occupational environments, or multi-professional service firms in different countries, would further contribute to our understanding. It would also be worthwhile to explore further how established professions respond to threats emerging from regulatory changes. Besides, we need more research on truce structures (Karunakaran, 2018) in settings where different professions need to collaborate, despite tensions emanating from their differences.

Moreover, it would be interesting to examine digitalization's implications in the light of increasing process automation and artificial intelligence applications. The computer-enabled automation of auditing processes can improve the productivity and quality of professional work. This change could initiate new forms of collaboration with IT auditors and other emerging professions. However, this could also mean that other professions or computer-aided tools can also do a subset of some junior associates' manual, on-the-job training work. The audit profession may need to develop responses to these challenges against learning and development.

Artificial intelligence applications may trigger jurisdictional conflicts between accounting auditors and other emerging professions. These jurisdictional conflicts can also occur in professional practices at the inference phase, threatening to displace a subset of accounting auditors from the auditing process. Therefore, one research avenue could be to consider technology as a non-human actor and examine jurisdictional changes and boundary work with a multi-dimensional approach. For example, future studies can deal with the jurisdictional conflicts and boundary work between existing professions, emerging professions, and computer-aided tools as non-human actors, such as artificial intelligence bots or robotic agents.

This study organized the recommendations and directions for future studies around the propositions. For example, based on the conceptual integration, the study proposed that enabling technologies assist professions in increasing the productivity of diagnostic and treatment methods. This change makes them more accessible to the public. The study has developed the propositions based on the current empirical studies; however, future studies with different professional groups must either support or falsify these propositions. Another example argued that while enabling technologies can improve professions' legitimacy, replacing technologies makes professions obsolete when they affect inference practices. The study wonder if empirical studies in the future will support or conflict with these propositions.

6.3 Implications

Currently, the study takes a more optimistic stance, especially for traditional professions. The study expects more enabling but fewer replacing technologies because of two reasons. First, regulations defend professional jurisdictions against replacing technologies. Pharmacists will most likely continue to dispense medications because this is the law. Similarly, audit opinions will stay within the jurisdiction of audit firms and not technology firms because regulatory bodies and financial institutions will mandate so. The study expects these regulatory circumstances to not change in the short term. Second, although AI and automation can be better than humans in specific tasks, displacing humans from certain tasks may jeopardize professions' learning and holistic view. To emphasize this concern, Acemoglu (2021) gives an extreme example of what would happen if students stopped learning arithmetic altogether and delegated all functions to calculators.

I expect significant and technology-driven changes in professions and professional service firms with an impact on increasing IT costs. These changes will potentially reconfigure the characteristics of professional service firms towards being more capital intensive. The study foresees trends to be self-service for clients through asset and subscription-based services, in theoretical words, shifts in the delivery of treatments from humans to intelligent technologies. Automation will continue to increase, especially in diagnostic activities often performed by junior professionals or low-cost delivery centers. The study does not expect fully automated and digitized services in the future. Instead, the study expects that there will be more mixed models where professional skills and advice develop around intelligent tools. Perhaps more interestingly and fun, the study anticipates spreading professional services to virtual channels such as Digital Human as a Service (DHaaS). They would be AI-powered virtual professionals that would make professions accessible virtually.

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APPENDICES

APPENDIX A: Interview protocol A
APPENDIX B: Interview protocol B
APPENDIX C: List of interviews

APPENDIX A: Interview protocol A

Interview Protocol A.1 - Audit firm founded

This document is the interview protocol used for semi-structured interviews conducted at ALPHA.

The interview starts with:

- Introduction of interviewer
- A summary of the research description
- Remind that this is an exploratory study, and there is no wrong or correct answer
- Thanking participant in advance

Background questions:

1. How long have you been working in ALPHA?
2. What are the core professional services that you provide?
3. What is your previous professional work experience (if any)?
4. Have you been to an abroad assignment before in the ALPHA network? If yes, please explain.
5. Have you ever had lateral moves (department change) in ALPHA before?

Reflecting on the early period of the single audit firm:

Contextual forces:

Normative forces

6. What do clients expect from the service range that your company provides?
7. What do regulatory institutions expect from the service range that your company provides?
8. What does your global network expect from the service range that your company provides?
9. What do partners in your company expect from the service range that your company provides?

Coercive forces

10. What are your clients' requirements for the service range that your company provide?

11. What are the regulatory and legal requirements (i.e., BRSA, commercial code) for the service range that your company provide?

12. What are your global networks' requirements (i.e., business plans) for the service range that your company provide?

13. What are the partners' requirements for the service range that your company provide?

Mimetic forces

14. What is your assessment of your competitors for the service range they provide?

15. What is your assessment of other member firms in your global network for their service range?

16. Which companies have the most successful range of services?

Organizational forces:

17. What is your assessment of the diversification of professional services in your company?

18. What is your assessment of being a multi-profession service firm compared to a single-profession service firm?

19. How is being a multi-professional service firm influence daily work in your company?

20. How does being a multi-profession service firm in your company relate to the company performance?

21. How does being a multi-profession service firm in your company relate to managerial decision-making?

22. What tactics do people use to build collaboration between different professional groups?

23. What do professionals expect from the collaboration efforts?

24. What are the motivations of professionals who later joined your company?

25. Which professional groups in your company cooperate most with other professional groups? Why?

26. Which professional groups in your company cooperate least with other professional groups? Why?

Closing

- Thank you for your time.
- These are all the questions I have for this interview.
- Do you have any questions for me?
- I will attempt to interpret and encode your responses to make sense of the research questions.
- Suppose you are further interested in what I do within the scope of the research. In that case, I may send you a copy of the confidential digitized version of the findings once it is published.

Interview Protocol A.2 - Tax firm founded

This document is the interview protocol used for semi-structured interviews conducted at ALPHA.

The interview starts with:

- Introduction of interviewer
- A summary of the research description
- Remind that this is an exploratory study, and there is no wrong or correct answer
- Thanking participant in advance

Background questions:

1. How long have you been working in ALPHA?
2. What are the core professional services that you provide?
3. What is your previous professional work experience (if any)?
4. Have you been to an abroad assignment before in the ALPHA network? If yes, please explain.
5. Have you ever had lateral moves (department change) in ALPHA before?

Reflecting on the early period of the single tax firm:

Contextual forces:

Normative forces

6. What do clients expect from the service range that your company provides?
7. What do regulatory institutions expect from the service range that your company provides?
8. What does your global network expect from the service range that your company provides?
9. What do partners in your company expect from the service range that your company provides?

Coercive forces

10. What are your clients' requirements for the service range that your company provide?

11. What are the regulatory and legal requirements (i.e., BRSA, commercial code) for the service range that your company provide?

12. What are your global networks' requirements (i.e., business plans) for the service range that your company provide?

13. What are the partners' requirements for the service range that your company provide?

Mimetic forces

14. What is your assessment of your competitors for the service range they provide?

15. What is your assessment of other member firms in your global network for the service range?

16. Which companies have the most successful range of services?

Organizational forces:

17. What is your assessment of the diversification of professional services in your company?

18. What is your assessment of being a multi-profession service firm compared to a single-profession service firm?

19. How is being a multi-professional service firm influence daily work in your company?

20. How does being a multi-profession service firm in your company relate to the company performance?

21. How does being a multi-profession service firm in your company relate to managerial decision-making?

22. What tactics do people use to build collaboration between different professional groups?

23. What do professionals expect from the collaboration efforts?

24. What are the motivations of professionals who later joined your company?

25. Which professional groups in your company cooperate most with other professional groups? Why?

26. Which professional groups in your company cooperate least with other professional groups? Why?

Closing

- Thank you for your time.
- These are all the questions I have for this interview.
- Do you have any questions for me?
- I will attempt to interpret and encode your responses to make sense of the research questions.
- Suppose you are further interested in what I do within the scope of the research. In that case, I may send you a copy of the confidential digitized version of the findings once it is published.

Interview Protocol A.3 - Audit and tax firms joined together

This document is the interview protocol used for semi-structured interviews conducted at ALPHA.

The interview starts with:

- Introduction of interviewer
- A summary of the research description
- Remind that this is an exploratory study, and there is no wrong or correct answer
- Thanking participant in advance

Background questions:

1. How long have you been working in ALPHA?
2. What are the core professional services that you provide?
3. What is your previous professional work experience (if any)?
4. Have you been to an abroad assignment before in the ALPHA network? If yes, please explain.
5. Have you ever had lateral moves (department change) in ALPHA before?

Reflecting on the period of single audit and tax firms were joined together:

Contextual forces:

Normative forces

6. What do clients expect from the service range that your company provides?
7. What do regulatory institutions expect from the service range that your company provides?
8. What does your global network expect from the service range that your company provides?
9. What do partners in your company expect from the service range that your company provides?

Coercive forces

10. What are your clients' requirements for the service range that your company provide?

11. What are the regulatory and legal requirements (i.e., BRSA, commercial code) for the service range that your company provide?

12. What are your global networks' requirements (i.e., business plans) for the service range that your company provide?

13. What are the partners' requirements for the service range that your company provide?

Mimetic forces

14. What is your assessment of your competitors for the service range they provide?

15. What is your assessment of other member firms in your global network for their service range?

16. Which companies have the most successful range of services?

Organizational forces:

17. What is your assessment of the diversification of professional services in your company?

18. What is your assessment of being a multi-profession service firm compared to a single-profession service firm?

19. How is being a multi-professional service firm influence daily work in your company?

20. How does being a multi-profession service firm in your company relate to the company performance?

21. How does being a multi-profession service firm in your company relate to managerial decision-making?

22. What tactics do people use to build collaboration between different professional groups?

23. What do professionals expect from the collaboration efforts?

24. What are the motivations of professionals who later joined your company?

25. Which professional groups in your company cooperate most with other professional groups? Why?

26. Which professional groups in your company cooperate least with other professional groups? Why?

Closing

- Thank you for your time.
- These are all the questions I have for this interview.
- Do you have any questions for me?
- I will attempt to interpret and encode your responses to make sense of the research questions.
- Suppose you are further interested in what I do within the scope of the research. In that case, I may send you a copy of the confidential digitized version of the findings once it is published.

Interview Protocol A.4 - The proliferation of advisory services

This document is the interview protocol used for semi-structured interviews conducted at ALPHA.

The interview starts with:

- Introduction of interviewer
- A summary of the research description
- Remind that this is an exploratory study, and there is no wrong or correct answer
- Thanking participant in advance

Background questions:

1. How long have you been working in ALPHA?
2. What are the core professional services that you provide?
3. What is your previous professional work experience (if any)?
4. Have you been to an abroad assignment before in the ALPHA network? If yes, please explain.
5. Have you ever had lateral moves (department change) in ALPHA before?

Reflecting on the period of establishing advisory unit and proliferation of services:

Contextual forces:

Normative forces

6. What do clients expect from the service range that your company provides?
7. What do regulatory institutions expect from the service range that your company provides?
8. What does your global network expect from the service range that your company provides?
9. What do partners in your company expect from the service range that your company provides?

Coercive forces

10. What are your clients' requirements for the service range that your company provide?

11. What are the regulatory and legal requirements (i.e., BRSA, commercial code) for the service range that your company provide?

12. What are your global networks' requirements (i.e., business plans) for the service range that your company provide?

13. What are the partners' requirements for the service range that your company provide?

Mimetic forces

14. What is your assessment of your competitors for the service range they provide?

15. What is your assessment of other member firms in your global network for the service range?

16. Which companies have the most successful range of services?

Organizational forces:

17. What is your assessment of the diversification of professional services in your company?

18. What is your assessment of being a multi-profession service firm compared to a single-profession service firm?

19. How is being a multi-professional service firm influence daily work in your company?

20. How does being a multi-profession service firm in your company relate to the company performance?

21. How does being a multi-profession service firm in your company relate to managerial decision-making?

22. What tactics do people use to build collaboration between different professional groups?

23. What do professionals expect from the collaboration efforts?

24. What are the motivations of professionals who later joined your company?

25. Which professional groups in your company cooperate most with other professional groups? Why?

26. Which professional groups in your company cooperate least with other professional groups? Why?

Closing

- Thank you for your time.
- These are all the questions I have for this interview.
- Do you have any questions for me?
- I will attempt to interpret and encode your responses to make sense of the research questions.
- Suppose you are further interested in what I do within the scope of the research. In that case, I may send you a copy of the confidential digitized version of the findings once it is published.

Interview Protocol A.5 - Expansion and proliferation of tax services

This document is the interview protocol used for semi-structured interviews conducted at ALPHA.

The interview starts with:

- Introduction of interviewer
- A summary of the research description
- Remind that this is an exploratory study, and there is no wrong or correct answer
- Thanking participant in advance

Background questions:

1. How long have you been working in ALPHA?
2. What are the core professional services that you provide?
3. What is your previous professional work experience (if any)?
4. Have you been to an abroad assignment before in the ALPHA network? If yes, please explain.
5. Have you ever had lateral moves (department change) in ALPHA before?

Reflecting on the period of expansion and proliferation of tax services:

Contextual forces:

Normative forces

6. What do clients expect from the service range that your company provides?
7. What do regulatory institutions expect from the service range that your company provides?
8. What does your global network expect from the service range that your company provides?
9. What do partners in your company expect from the service range that your company provides?

Coercive forces

10. What are your clients' requirements for the service range that your company provide?

11. What are the regulatory and legal requirements (i.e., BRSA, commercial code) for the service range that your company provide?

12. What are your global networks' requirements (i.e., business plans) for the service range that your company provide?

13. What are the partners' requirements for the service range that your company provide?

Mimetic forces

14. What is your assessment of your competitors for the service range they provide?

15. What is your assessment of other member firms in your global network for the service range?

16. Which companies have the most successful range of services?

Organizational forces:

17. What is your assessment of the diversification of professional services in your company?

18. What is your assessment of being a multi-profession service firm compared to a single-profession service firm?

19. How is being a multi-professional service firm influence daily work in your company?

20. How does being a multi-profession service firm in your company relate to the company performance?

21. How does being a multi-profession service firm in your company relate to managerial decision-making?

22. What tactics do people use to build collaboration between different professional groups?

23. What do professionals expect from the collaboration efforts?

24. What are the motivations of professionals who later joined your company?

25. Which professional groups in your company cooperate most with other professional groups? Why?

26. Which professional groups in your company cooperate least with other professional groups? Why?

Closing

- Thank you for your time.
- These are all the questions I have for this interview.
- Do you have any questions for me?
- I will attempt to interpret and encode your responses to make sense of the research questions.
- Suppose you are further interested in what I do within the scope of the research. In that case, I may send you a copy of the confidential digitized version of the findings once it is published.

Interview Protocol A.6 - The proliferation of legal services

This document is the interview protocol used for semi-structured interviews conducted at ALPHA.

The interview starts with:

- Introduction of interviewer
- A summary of the research description
- Remind that this is an exploratory study, and there is no wrong or correct answer
- Thanking participant in advance

Background questions:

1. How long have you been working in ALPHA?
2. What are the core professional services that you provide?
3. What is your previous professional work experience (if any)?
4. Have you been to an abroad assignment before in the ALPHA network? If yes, please explain.
5. Have you ever had lateral moves (department change) in ALPHA before?

Reflecting on the period of proliferation of legal services:

Contextual forces:

Normative forces

6. What do clients expect from the service range that your company provides?
7. What do regulatory institutions expect from the service range that your company provides?
8. What does your global network expect from the service range that your company provides?
9. What do partners in your company expect from the service range that your company provides?

Coercive forces

10. What are your clients' requirements for the service range that your company provide?

11. What are the regulatory and legal requirements (i.e., BRSA, commercial code) for the service range that your company provide?

12. What are your global networks' requirements (i.e., business plans) for the service range that your company provide?

13. What are the partners' requirements for the service range that your company provide?

Mimetic forces

14. What is your assessment of your competitors for the service range they provide?

15. What is your assessment of other member firms in your global network for their service range?

16. Which companies have the most successful range of services?

Organizational forces:

17. What is your assessment of the diversification of professional services in your company?

18. What is your assessment of being a multi-profession service firm compared to a single-profession service firm?

19. How is being a multi-professional service firm influence daily work in your company?

20. How does being a multi-profession service firm in your company relate to the company performance?

21. How does being a multi-profession service firm in your company relate to managerial decision-making?

22. What tactics do people use to build collaboration between different professional groups?

23. What do professionals expect from the collaboration efforts?

24. What are the motivations of professionals who later joined your company?

25. Which professional groups in your company cooperate most with other professional groups? Why?

26. Which professional groups in your company cooperate least with other professional groups? Why?

Closing

- Thank you for your time.
- These are all the questions I have for this interview.
- Do you have any questions for me?
- I will attempt to interpret and encode your responses to make sense of the research questions.
- Suppose you are further interested in what I do within the scope of the research. In that case, I may send you a copy of the confidential digitized version of the findings once it is published.

APPENDIX B: Interview protocol B

Interview Protocol B – Accounting auditors and IT auditors

This document is the interview protocol used for semi-structured interviews conducted at ALPHA with accounting and IT auditors.

The interview starts with:

- Introduction of interviewer
- A summary of the research description
- Remind that this is an exploratory study, and there is no wrong or correct answer
- Thanking participant in advance

Background questions:

1. How long have you been working in ALPHA?
2. What are the core professional services that you provide?
3. What is your previous professional work experience (if any)?

Establishment of IT audit:

4. Why was the decision to establish an IT audit at ALPHA?
5. How did the establishing process go?
6. What was your client portfolio like when the IT audit was first established?
7. What changes have occurred in the client portfolio in the following years?
8. What are the qualifications of IT auditors? What are the certification requirements?

Regulations and digitalization:

9. How did the regulations affect the accounting audit and IT audit?
10. How did digitalization and intelligent technologies affect the accounting audit and IT audit?
11. How does digitalization affect the collaboration between accounting auditors and IT auditors?

12. What do regulators expect from accounting firms concerning digitalization?

13. What are the regulatory and legal requirements concerning digitalization and independent audits?

14. What do clients expect from accounting firms concerning digitalization?

15. What does your global network expect from ALPHA concerning digitalization?

Implications on audit work:

16. What do IT auditors do as part of the audit process?

17. Do the audit procedures performed by the IT auditors consist of the procedures already performed by the accounting auditors? Or are they made up of additional/new procedures? Please explain.

18. Why do you need IT auditors to use data analytics and advanced tools?

19. How does being a multi-disciplinary audit team relate to audit quality?

20. How does being a multi-disciplinary audit team relate to the client's decision-making in proposals?

Tensions between accounting and IT auditors:

21. How does being a multi-disciplinary audit team influence daily work?

22. Please explain the tensions between the accounting auditors and IT auditors. On which topics you have experienced tensions mostly?

23. How do you manage these tensions?

24. What tactics do people use to build collaboration between accounting and IT auditors?

25. What do accounting auditors and IT auditors expect from the collaboration efforts?

Wrap up questions:

26. In this context, what are your expectations for the coming period?

27. Does IT audit disrupt accounting audit today?

28. Can IT audit disrupt accounting audits in the future?

Closing

- Thank you for your time.
- These are all the questions I have for this interview.
- Do you have any questions for me?
- I will attempt to interpret and encode your responses to make sense of the research questions.
- Suppose you are further interested in what I do within the scope of the research. In that case, I may send you a copy of the confidential digitized version of the findings once it is published.

APPENDIX C: List of interviews

Table C.1 : List of interviews.

Informant	Profession	Level	Sector	Employment Status	Interview Protocol	Interview Date	Interview Duration (mins)	Interview Medium
A1	Audit	Partner	Financial	Active	A.1	Jun 2018	90	Face-to-face
A2	Audit	Partner	Financial	Retired	A.1	Jun 2018	60	Online
A3	Audit	Partner	Real	Active	A.3	Jul 2018	75	Face-to-face
A4	Audit	Partner	Financial	Retired	A.1	Jul 2018	90	Online
A5	Audit	Partner	Real	Active	A.3	Aug 2018	75	Face-to-face
A6	Tax	Partner	Financial	Retired	A.2	Aug 2018	60	Online
A7	Tax	Partner	Real	Active	A.2	Aug 2018	90	Face-to-face
A8	Tax	Partner	Financial	Active	A.3	Sep 2018	60	Face-to-face
A9	Audit	Director	Financial	Active	A.3	Sep 2018	75	Face-to-face
A10	Audit	Director	Financial	Active	A.3	Sep 2018	75	Face-to-face
A11	Audit	Director	Real	Active	A.3	Sep 2018	90	Face-to-face
A12	Tax	Director	Real	Active	A.5	Oct 2018	90	Face-to-face
A13	Tax	Director	Real	Active	A.5	Oct 2018	75	Face-to-face
A14	Audit	Partner	Real	Active	A.3	Oct 2018	60	Face-to-face
A15	Audit	Partner	Financial	Active	A.3	Oct 2018	60	Face-to-face
A16	Tax	Partner	Financial	Active	A.3	Nov 2018	60	Face-to-face
A17	Advisory	Partner	Financial	Active	A.4	Nov 2018	60	Face-to-face
A18	Audit	Partner	Real	Active	A.3	Nov 2018	60	Face-to-face

Table C.1 (continued) : List of interviews.

Informant	Profession	Level	Sector	Employment Status	Interview Protocol	Interview Date	Interview Duration (mins)	Interview Medium
A19	Tax	Partner	Real	Active	A.6	Dec 2018	60	Face-to-face
A20	Advisory	Director	Real	Active	A.4	Dec 2018	90	Face-to-face
A21	Advisory	Partner	Real	Active	A.4	Jan 2019	75	Face-to-face
A22	Tax	Director	Financial	Active	A.5	Jan 2019	75	Face-to-face
A23	Advisory	Partner	Real	Active	A.4	Jan 2019	60	Face-to-face
A24	Advisory	Director	Real	Active	A.4	Feb 2019	75	Face-to-face
A25	Audit	Director	Financial	Active	A.3	Feb 2019	75	Face-to-face
A26	Tax	Senior Manager	Real	Active	A.6	Feb 2019	90	Face-to-face
A27	Advisory	Senior Manager	Financial	Active	A.4	Mar 2019	90	Face-to-face
A28	Advisory	Senior Manager	Real	Active	A.4	Mar 2019	90	Face-to-face
A29	Audit	Senior Manager	Real	Active	A.3	Mar 2019	90	Face-to-face
A30	Tax	Senior Manager	Real	Active	A.5	Mar 2019	90	Face-to-face
B1	Accounting Auditor	Partner	Financial	Active	B	May 2019	60	Face-to-face
B2	Accounting Auditor	Partner	Financial	Active	B	May 2019	60	Face-to-face
B3	Accounting Auditor	Senior Manager	Real	Active	B	Jun 2019	90	Face-to-face
B4	Accounting Auditor	Director	Financial	Active	B	Jun 2019	75	Face-to-face

Table C.1 (continued) : List of interviews.

Informant	Profession	Level	Sector	Employment Status	Interview Protocol	Interview Date	Interview Duration (mins)	Interview Medium
B5	Accounting Auditor	Director	Real	Active	B	Jul 2019	75	Face-to-face
B6	Accounting Auditor	Partner	Real	Active	B	Jul 2019	60	Face-to-face
B7	IT Auditor	Manager	Real	Active	B	Aug 2019	60	Face-to-face
B8	IT Auditor	Director	Financial	Active	B	Aug 2019	75	Face-to-face
B9	Accounting Auditor	Director	Financial	Active	B	Sep 2019	75	Face-to-face
B10	IT Auditor	Partner	Financial	Active	B	Sep 2019	60	Face-to-face
B11	IT Auditor	Senior Manager	Real	Active	B	Oct 2019	90	Face-to-face
B12	IT Auditor	Senior Manager	Financial	Active	B	Oct 2019	90	Face-to-face
B13	IT Auditor	Partner	Financial	Active	B	Nov 2019	60	Face-to-face
B14	Accounting Auditor	Partner	Real	Active	B	Nov 2019	60	Face-to-face
B15	IT Auditor	Manager	Financial	Active	B	Dec 2019	75	Face-to-face
B16	IT Auditor	Manager	Real	Active	B	Dec 2019	90	Face-to-face
B17	IT Auditor	Manager	Real	Active	B	Feb 2020	75	Online
B18	Accounting Auditor	Partner	Real	Active	B	Mar 2020	60	Online
B19	Accounting Auditor	Partner	Real	Active	B	Mar 2020	60	Online
B20	Accounting Auditor	Director	Real	Active	B	Mar 2020	75	Online

Table C.1 (continued) : List of interviews.

Informant	Profession	Level	Sector	Employment Status	Interview Protocol	Interview Date	Interview Duration (mins)	Interview Medium
B21	Accounting Auditor	Partner	Financial	Active	B	Apr 2020	60	Online
B22	IT Auditor	Manager	Financial	Active	B	Apr 2020	90	Online
B23	Accounting Auditor	Manager	Real	Active	B	Apr 2020	75	Online
B24	Accounting Auditor	Manager	Real	Active	B	Apr 2020	75	Online
B25	Accounting Auditor	Manager	Financial	Active	B	Apr 2020	90	Online

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- **Koktener, B.** and Tuncalp, D. 2018. Adding "Assurance" to "Audit": The Development of Professional Boundaries and Identities in Traditional Professions. 34th EGOS Colloquium, Tallinn, Estonia.
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