



**Exploring the Varied Demands for Hard and Soft Skills of
Business Analysts Across Industries: A Cross-Sector
Comparative Case Study**

Research Principles and Philosophy

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Executive Summary

The business analyst (BA) is key in today's companies. They link business needs with IT to make strategic choices. This study looks at how the demand for both hard and soft skills has changed for Business analysts in finance, healthcare, and manufacturing. It shows how expectations vary by industry, pointing out the special challenges and skills needed for careers in each. With digital transformation happening worldwide, now there's a fresh need for skilled business analysts (BAs). This has led to more analytics being used in daily business tasks. BAs in finance, healthcare, and manufacturing need different skills.

Finance industry: The 2008 financial crisis highlighted the importance of risk analysis and compliance skills. In finance, BAs need to be familiar with financial modeling, know the rules, and use tools like SQL. A 2020 survey by the IIBA showed that 67% of banks and similar firms look for BAs who can use predictive analytics to manage risk.

Healthcare industry: The shift to electronic health records (EHRs) and tough privacy laws like HIPAA have boosted the need for experts in data privacy, compliance, and analyzing patient data. Also, soft skills like empathy and good communication are crucial when dealing with sensitive health information and talking to stakeholders.

Manufacturing industry: In manufacturing, with more automation and better supply chain management, BAs focus on making processes smoother, managing inventory, and linking systems together. They must work well with teams, make smart business choices, and tackle problems to handle the complexities of global supply chains.

Agile methods have changed the role of the BA in all industries. Big companies are now emphasizing adaptability, collaboration with technical teams, and familiarity with tools like Python, Tableau, and cloud computing platforms. The global shift to remote working has also increased the need for cultural sensitivity, virtual team management, and effective communication across time zones. This study fills an important academic gap by systematically comparing skills demand for bachelor's degrees in three industries, revealing common skills and differences. While technical skills remain key to how business analysts approach their jobs, the ability to manage complex stakeholder relationships and familiarize themselves with industry-specific challenges has become just as important.

The finding results show the importance of BA's continuing professional development, including certification, webinars, and improve in emerging technologies such as artificial intelligence and machine learning. As baccalaureate degrees continue to play a necessary role in modern business, this study provides useful insights for employers, training providers and aspiring Baccalaureate degrees to align their skills with evolving industry needs.

Key words: Business analyst; Role theory; Business management; Job development

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1. Introduction

1.1 Research Background

The role of business analysts has changed considerably over the past decade, and they are now a key part of strategic decisions in many industries. Business analysts bridge the gap between business needs and technology solutions to ensure the efficiency and effectiveness of organizations (Popoola O A et al., 2024). Due to the impact of digital transformation on global enterprises, the demand for skilled bachelor's degrees has increased. Profound changes in business management are driving deeper integration of analytics with operational and strategic planning (Nadakuditi S, 2019).

1.1.1 Skill Demands Across Industries

In the finance sector, the 2008 financial crisis showed the need for robust risk analysis and compliance management. This created a higher demand for BAs with skills in financial modeling, knowledge of regulations, and the use of tools like SQL for handling data (Pillay, A., 2018). A 2020 survey by the International Institute of Business Analysis (IIBA) found that 67% of financial institutions sought BAs with expertise in financial analytics, particularly in predictive modeling for risk assessment³¹. The transition to electronic health records (EHRs) in the mid-2010s, with over 95% of hospitals adopting EHR systems by 2017, as reported by the Office of the National Coordinator for Health IT, significantly increased the need for BAs with skills in data privacy, compliance with HIPAA, and the ability to analyze patient data for better healthcare outcomes³². Soft skills like empathy and communication are vital here, given the sensitive nature of healthcare data (Khan M. I. M., 2024). In the manufacturing industry, companies more and more rely on big data and analytics. With the integration of IoT devices, automation, and digital transformation, analysts need to understand and sometimes even help implement new technologies.

The agile manifesto's influence since 2001 has shifted the IT department towards more adaptive and customer-focused development practices (Hohl, P., Klünder, J. et al., 2018). This has led to a demand for BAs who can work seamlessly with agile teams, understand Scrum and Kanban, and possess technical acumen in programming languages like Python for data manipulation or business logic implementation (Daraojimba, E. C. et al., 2024). The 2022 Stack Overflow Developer Survey noted that 60% of developers prefer working with BAs who are technically savvy, highlighting the blend of hard and soft skills required³³. The e-commerce boom, particularly accelerated by the global health crisis in 2020, has necessitated BAs skilled in customer behavior analysis, inventory management systems, and supply chain optimization (Xue, W., & Te Chuan, L., 2024). The use of

big data for personalized marketing strategies has been pivotal, with a 2021 McKinsey report suggesting that companies employing advanced analytics saw a 15% increase in customer satisfaction³⁰.

1.12 Overall change in business analyst job requirements

The demand for skills in data analytics has grown dramatically. A 2021 study by LinkedIn identified SQL, data visualization tools like Tableau (with a 74% year-over-year growth in demand), and Microsoft Excel as among the top technical skills for BAs³³. The need for these skills stems from the necessity to handle vast amounts of data for decision-making. In some company, with digital transformation, BAs need to understand cloud computing, AI, and machine learning basics. They must be adept at integrating these technologies into business processes(Misic, T., Gilani, S., & McArthur, J. J. , 2020).

The role now requires even stronger communication skills, given the need to liaise between tech teams and business stakeholders, often in an environment with remote or global teams(Popoola, O. A., 2024). The global nature of business and the rise of remote work have necessitated skills in managing virtual teams, understanding different time zones, and cultural sensitivities (Popovici, V., & Popovici, A. L., 2020). The pace of change in technology and business practices means that BAs must be committed to ongoing education(Chernysheva, Y. G., & Shepelenko, G. I., 2018). Certifications, webinars, and courses are part of the job now to keep up with tools and methodologies. Modern projects often involve a wide array of stakeholders from different departments, regions, or even countries, each with their own goals, priorities, and cultural backgrounds. BAs must navigate these complexities to align everyone towards common project goals(Weng Y., & Wu J., 2024).

In summary, business analyst job requirements in these three industries now demand a mix of strong technical skills, versatile soft skills, and specialized industry knowledge(Popoola O A et al., 2024). This shift highlights the BA's crucial role in managing the challenges of today's business environment, where they act as both analysts and strategists, as well as facilitators and communicators.

1.2 The value of this research

1.21 Academic gap in this field

While numerous studies have concentrated on the skills requisite for business analysts within individual industries, a significant research gap persists in the systematic comparison of these skill sets across multiple sectors. This absence of cross-sector analysis results in a notable void in our understanding of how skill demands may vary or converge in diverse business environments. Furthermore, the evolution of the business analyst role, driven by advancements in digital technologies, the adoption of agile methodologies, and the growing complexity of stakeholder management, has not been comprehensively investigated regarding its impact on skill requirements across different industries.

1.22 Current problem statement

The rapidly evolving business landscape has introduced increasingly detailed and complex demands on business analysts across various industries. This evolution has led to confusion among practitioners about the necessary skill sets, exacerbating a significant mismatch between the skills imparted by educational and training institutions and the actual needs of companies. Addressing these issues is crucial for aligning the capabilities of business analysts with the strategic needs of organizations, thereby enhancing project outcomes, reducing misalignments in expectations, and fostering a more agile, responsive BA workforce.

1.23 The purpose of the research

The study seeks to offer practical recommendations for BAs, educational institutions, and employers on how to better prepare BAs to manage the evolving demands of their role. It will focus on equipping BAs with the skills needed to adeptly navigate the evolving landscape of their profession, particularly in areas like stakeholder management and the integration of technical solutions with strategic business goals. By identifying the key skills needed, this research aims to improve how well BAs can adapt and perform in different industries. Helping institutions and companies direct their efforts and funds towards the most impactful areas of BA training and development. Advising on where to focus educational and professional development programs to align with industry needs, thus reducing the skill mismatch. Offering employers a clearer picture of the competencies to prioritize in recruitment, thereby streamlining the hiring process, improving job fit, and ultimately, enhancing organizational performance.

It will also add to academic discussions by introducing a new framework to understand the skills of business analysts in specific industries. This framework will show the details of skill requirements and help explain how these skills apply in different industries.

Through this research, the goal is to show the current state of BA skills in different industries and to suggest ways to improve training, education, and practice. This will help business analysts get ready to handle the needs of modern business. It will result in more successful projects, better alignment with business goals, and an improve the overall professional effectiveness.

2. Research Aim, Question and Objectives

2.1 Research Aim

This research aims to use role theory to identify the specific hard and soft skills needed by business analysts in three industries. Compare these requirements to see where they differ or align, and use this knowledge to guide business analysts, educational institutions, and companies towards better preparation for the evolving demands of the BA role. By providing a clearer understanding of

industry-specific skill needs, the research seeks to inform curriculum design, training programs, and hiring practices, ultimately making business analysts more effective in meeting the strategic and operational needs of their industries.

2.2 Objectives

- To identify and list the hard and soft skills required by business analysts across finance, healthcare and manufacturing industries, and to compare these requirements to discern similarities and differences.
- To assess current educational and training programs against the actual skill needs in the industry and highlight gaps to improve curriculum and training.
- To give realistic suggestions for enhancing BA training programs to better fit industry-specific demands, focusing on stakeholder relationships and strategic alignment.
- To develop a framework for understanding BA competencies in a detailed, industry-specific context, offering insights for academic research, professional development, and strategic organizational decisions for hiring and skill development.

2.3 Questions

- What are the key skills business analysts need in different industries?
- How do the skills required by business analysts vary from one sector to another?
- Are the skills taught in schools matching what companies in different sectors need?
- What changes should be made to how we train business analysts to fit industry demands?

3 Theoretical Framework

The theoretical framework is an essential part of doctoral research. It provides a basic for reviewing and debating the literature, establishing a close connection with the literature review (Rockinson Szapkiw et al., 2014). A useful theoretical framework sets up the research for future academic contributions and successful writing (Mc Combes, 2020). The framework focus on two fundamental research questions: (1) What is the research problem? and (2) Is the chosen method appropriate for solving it? These questions need a thorough look at existing studies (Lederman, 2015). In traditional academic research, you start with a question, then build a collection of literature to support your topic and show what's already known (Collins & Carrie, 2018).

The theoretical framework does more than just answer the research questions, it shapes the whole study. It points researchers to the right methods and analyses, making sure the study's results are strong and make sense.

Role Theory gives this research a good way to see how the skills needed for business analysts (BAs) are changing. It looks at how society or companies expect certain behaviors from people in roles (Paul, D., 2018). According to this theory, BA roles are shaped by what stakeholders want (Vashist, R. et al., 2010). Nowadays, besides traditional skills like process modeling and data analysis, BAs need soft skills like teamwork, communication, and strategic thinking (Mashhood, A. et al., 2021). These shifts match wider changes in how companies work, like using agile methods, going digital, and focusing more on stakeholders (Hossain, Q. et al., 2024). Role Theory helps us understand how these new expectations push BAs to grow new skills to stay good at their jobs (Biddle, B. J., 1986).

A big part of role theory is the idea of role tension and conflict. This happens when people find it hard to meet high or competing expectations in their jobs. Business analysts (BAs), who work between tech teams and business stakeholders, often deal with this when trying to juggle technical skills with business needs (Robert, A. et al., 2024). IT might want deep tech know-how, while business teams might care more about strategy and teamwork. This can cause tension, making the BA job both challenging and ever-changing (Park, J. et al., 2016). Role theory helps us look at how BAs handle these conflicts. They might focus on certain skills, learn new ones, or try to understand what the company really needs (Paul D, 2018).

Role theory also talks about how people adapt to their roles and see themselves in their jobs, which is key for growing professionally (Biddle, B.J., 1986). Role adaptation means changing your behavior or skills to fit new needs, like learning new tech or better communication (Chandler J. A. et al., 2022). This change often needs help from the company, like training or mentors. Role identity is about how people see themselves in their job and their career goals (Richards, D., Marrone, M., & Vatanasakdakul, S., 2011). For BAs, when their role identity matches the new skills they need, it can make them more motivated and happier at work. If it doesn't match, they might feel less engaged or satisfied (Vashist, R. et al., 2010). These concepts from role theory help us understand how BAs adapt to new skills and redefine their roles in a constantly changing work environment.

4 Literature Review

4.1 The Purpose and Concept of Literature Review

4.2 Selection of Key Conception

According to Wisker (2015), literature review is the foundation of academic inquiry, emphasizing its cyclical process and objectivity in order to comprehensively explore various theories, viewpoints, positions, and seminal contributions. Similarly, Efron and colleagues (2018) argue that effective literature reviews should strive to present existing knowledge from an innovative and original perspective. It should reveal the relationships between ideas and frameworks, as well as their application in the real world, to encourage new perspectives and a deeper understanding of the topic

being studied.

In addition, the literature review contributes to the development of a conceptual framework that serves as a cornerstone of the overall research effort (Maxwell, 2005). Through the integration of prior knowledge, it lays a foundation for determining the theoretical and methodological orientation of research.

Hard skills are defined as the technical and measurable abilities needed to accurately perform a specific task. For business analysts, these capabilities include data analytics, including the use of tools such as SQL, Python, or Excel to interpret, process, and extract actionable insights from complex datasets (Kosarenko Y, 2019). Another key hard skill is process modeling, where analysts use frameworks such as BPMN (Business Process Models and Notations) to visualize, document, and improve organizational workflows (Aleryani A, 2020). In addition, technical writing and documentation are key hard skills that enable analysts to create clear, structured and precise business requirements, system specifications and user manuals that ensure effective communication among stakeholders (Lubwama R, 2020).

Soft skills, often referred to as interpersonal and emotional competencies, play a vital role in enabling business analysts to work effectively with a wide range of stakeholders (Buiak L, 2020). Strong communication skills are critical because analysts need to express complex concepts, requirements, and findings in a way that both technical and non-technical audiences can understand. Equally important are the skills of problem solving and critical thinking, which enable analysts to systematically address challenges and devise creative solutions that support organizational goals (Kosarenko Y, 2019). In addition, emotional intelligence is a key soft skill that can help analysts cultivate positive relationships, resolve conflict, and navigate workplace dynamics with understanding and tact (Lubwama R, 2020).

Cross-sector comparative analysis involves exploring how different industries differ in the skill requirements of business analysts, while finding commonalities. In the financial industry, for example, there is a strong focus on hard skills such as regulatory compliance and financial risk assessment, as well as soft skills such as attention to detail and confidentiality (Chandler J. A. et al., 2022). On the other hand, in the technology sector, expertise in agile methods and software development is prioritized as hard skills, while teamwork and flexibility are emphasized as necessary soft skills (Kumar, G., & Bhatia, P. K., 2012). This analytical approach reveals the unique and overlapping competencies that business analysts must possess in order to thrive in diverse professional environments (Kovich C., 2020).

A business analyst (BA) is an expert who connects business objectives to actual solutions by identifying challenges, explaining stakeholder needs, and outlining the characteristics and capabilities of potential solutions (Vonsavanh A et al., 2008). Their responsibilities include strategic analysis to synchronize business goals, process modeling to enhance workflows, and stakeholder analysis to balance various interests. ba plays a vital role in defining organizational needs, guiding the collection and organization of detailed specifications, and ensuring that solutions are practical and aligned with business priorities. In addition, they act as facilitators, facilitating effective

communication between the technical team and business stakeholders to maintain consistency at all stages of the project (Zmitrowicz, K, 2024).

4.3 The Content of Literature Review

The Value of Business Analysts to the Company

Many studies have highlighted the importance of business analysts in driving organizational growth. These professionals play a key role in aligning strategic objectives with operational activities, greatly improving project outcomes and overall business efficiency (Palepu, k.g., et al., 2016). By acting as a link between the technical team and the business stakeholders, they ensure that initiatives are aligned with organizational priorities and produce tangible results. For example, in the financial sector, BAs enhance decision making through data modeling and predictive analytics (Olorunyomi, T.D., et al., 2024), while in healthcare, BAs streamline patient care through system optimization. Retail chains struggle to compete with online retailers due to outdated inventory management practices (Gauri et al., 2021; Hamdan et al., 2024). After a thorough analysis by business analysts, the company achieved a 25% increase in sales and a 20% reduction in inventory costs.

Their role is not just to solve problems; They also play a key role in aligning business objectives with technology initiatives, ensuring that projects deliver tangible value to the organization (Popoola, O. A. et al., 2024). Research by Kovich, C (2020) shows that companies with strong business analytics practices report a 25% increase in project success. Across industries, their ability to translate complex needs into actionable insights underscores their economic and strategic importance. J. Park and S. Jeong (2016) emphasize the importance of business analytics as a fundamental component of IT systems projects. They believe that analytics provides actionable insights that promote project alignment with strategic objectives, ensuring operational efficiency and stakeholder satisfaction.

The Evolving Role of the Business Analyst

Organizations have sought to align with the agile delivery framework, a transition that brings significant challenges. At the core of this transformation is the changing role of business analysts, who must adjust to new tasks and methodologies. As essential members of project teams, BAs are leading this transition, reshaping their goals and outputs to align with the agile framework and its fast-paced requirements (Popoola, O. A. et al., 2024). Information and Communication Technology (ICT) projects are inherently intricate, involving three key elements: technology, processes, and people. Modern Business Analysts (BAs) are crucial in managing this complexity, as their responsibilities extend across all three areas, highlighting the diverse expertise needed to drive project success (Meredith, P. et al., 2019).

The role of the business analyst has undergone a significant shift from traditional responsibilities such as documenting requirements to encompass strategic planning, risk mitigation, and change management. In a technology-centric environment, BA plays a vital role in agile teams, supporting a fast-paced development process while ensuring alignment with stakeholder needs (Palepu, k.g., et

al., 2016). Their responsibilities also vary from industry to industry; For example, in the manufacturing sector, BAs emphasizes improving operational efficiency, while in the public sector, BAs focuses on compliance with regulations and fostering collaboration among stakeholders. As organizations adopt agile and cross-functional approaches, business analysts are increasingly acting as intermediaries, facilitating effective coordination between various teams and departments (Paul D, 2018).

The Career Dilemma of the Business Analyst

Despite the growing importance of business analysts, they encounter a number of professional challenges, including unclear role definitions, inadequate skills, and limited growth opportunities. Many organizations fail to provide standardized descriptions of BA roles, leading to changes in expectations and responsibilities. The growing demand for technical skills such as coding and data analysis increases the complexity of their career trajectory, as not all undergraduate graduates possess these competencies (Shafqat, M. et al., 2021). Career progression also poses a significant barrier, with limited options to move into more senior roles such as product management or strategic leadership. In addition, the stress of managing cross-functional demands often leads to burnout, especially in high-risk sectors such as healthcare (Hussain, Q et al., 2024). Addressing these challenges is critical to fully leveraging the potential of business analysts in today's workforce.

5 Conceptual Framework

5.1 The Definition of Conceptual Framework

Maxwell (2013) explains that a conceptual framework fulfills two main roles: it connects the study to established theories and research, positioning it within the wider academic landscape, and it underscores the study's distinct contribution to the field. It should be built on an extensive literature review, allowing researchers to craft their own theoretical viewpoints rather than simply recapping previous work. In a similar vein, Ravitch and Riggan (2016) describe a conceptual framework as a logical system of interrelated concepts that illustrates the study's relevance, importance, and methodological strength. They stress that it emerges from a careful examination of participants' viewpoints and challenges, showing how these elements influence the research direction.

5.2 Conceptual Framework

The conceptual framework of this study is rooted in role theory and provides a perspective to explore the different hard and soft skill needs of business analysts in different industries. Role theory emphasizes how organizational expectations, behaviors, and situational factors affect an individual's

role. This approach is particularly useful for analyzing how the responsibilities and skills of a business analyst have evolved to align with the strategic and operational needs of various departments.

This framework is based on role theory, which is the basis for understanding how the responsibilities and skill needs of business analysts are influenced by organizational expectations and contextual factors (Kosarenko Y, 2019). Hard skills, such as technical proficiency, data analysis, and process modeling, are analyzed as basic functional competencies, while soft skills, including communication, problem solving, and stakeholder engagement, are seen as key to successful role performance. The study examines how these skills align with formal job requirements and informal expectations shaped by organizational culture and industry norms. Role theory (Solomon et al., 1985) suggests that unclear roles reduce effectiveness and create confusion for practitioners and stakeholders. Building on role theory, the framework examines role conflict, where competing skill demands can arise, and role ambiguity, where ambiguous expectations can hinder performance. Using a cross-sector comparative perspective, the framework assesses how industry-specific factors such as organizational structure, reliance on technology, and level of stakeholder interaction shape the skill set required by business analysts (Yong Weng, & Jie Wu, 2024). This structured analysis highlights the interplay between the hard and soft skills required to handle the dynamic responsibilities of business analysts across different industries.

By collecting and analyzing data from questionnaires and interviews, this study aims to provide actionable insights for business analysts, academic institutions, and employers (Karimova G., 2024). These insights will emphasize ways to provide business analysts with the capabilities needed to adapt to the changing demands of their roles. By addressing these evolving needs, the conceptual framework seeks to bridge the gap between industry expectations and professional preparation, enabling business analysts to thrive in a variety of fields.

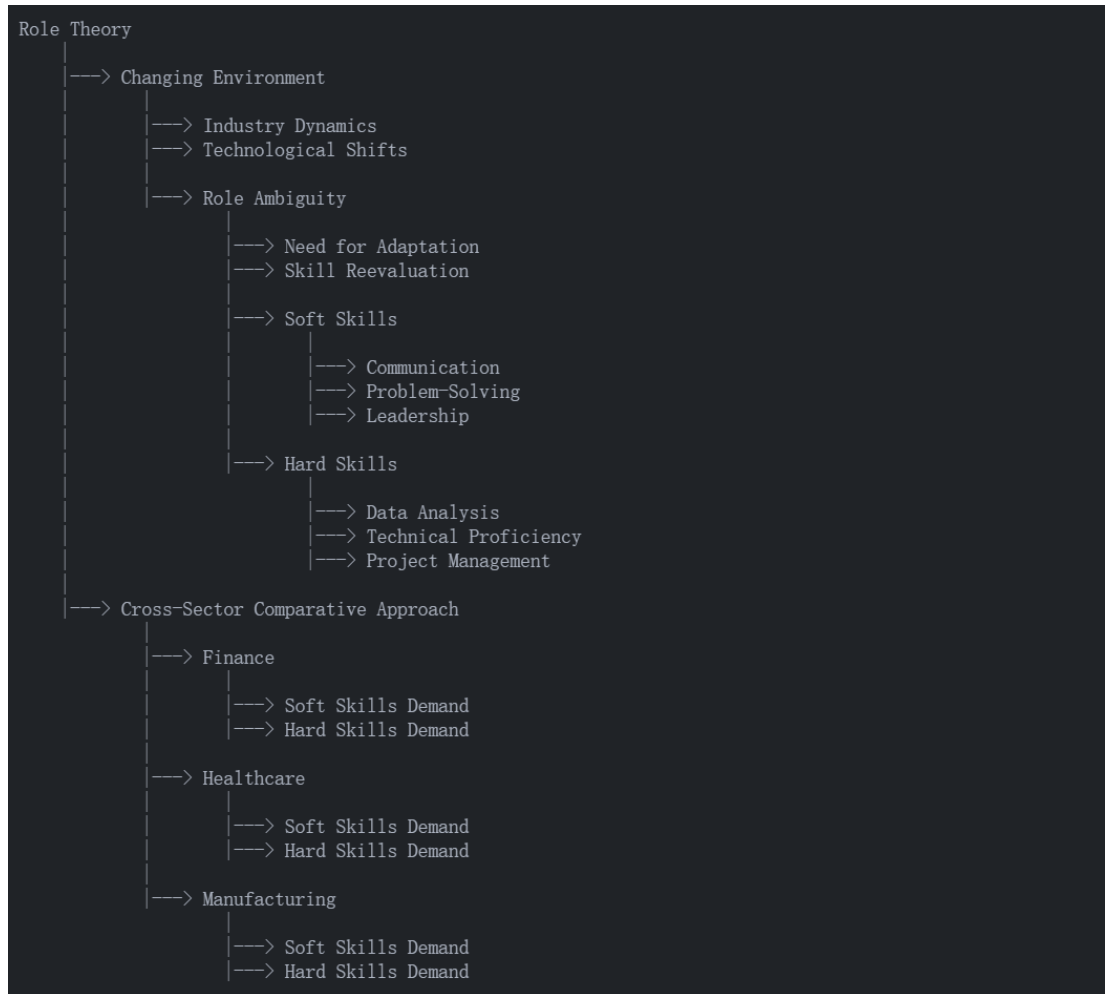


Figure1: The concept map of this research

6 Research Methodology

6.1 Introduction

As Saunders et al. (2009) emphasize, research methodology is a critical determinant of an academic study's success. It requires comprehensive consideration of the research design and implementation, ensuring an integrated and consistent approach that aligns with the study's objectives. Selecting an appropriate methodology is crucial for determining a coherent corporate strategy and avoiding detrimental consequences. Failure to adopt a suitable research methodology not only risks the inability to collect relevant data and achieve research goals but may also jeopardize the overall credibility and integrity of the study.

Harding (1987) defined methodology as "a theory and analysis of how research should proceed," highlighting its foundational role in guiding the research process. Schwandt (2001) says that methodology is about the specific ways and rules we use to study something, including how we analyze the information. Methodology, therefore, provides a systematic rationale for the methods employed, ensuring that the research process is grounded in logical and robust principles.

This chapter outlines the methodology designed to construct and collect information-rich qualitative data, ensuring its relevance and value in effectively addressing the research question. As emphasized by Mills and Birks (2014), a well-crafted methodological approach is essential for producing meaningful insights that align with the study's objectives. By integrating robust data collection and analysis techniques, this chapter seeks to provide a clear and systematic framework to guide the research process and achieve reliable and insightful outcomes (Snyderb H, 2019).

6.2. Paradigm of the research

A paradigm is a set of assumptions, theories, and principles that underpin some idea, such as identity, or system, such as religion. As an idea, benchmark or structure, it influences how we perceive, analyze and understand the world. In research, paradigms include the core beliefs, assumptions, and cognitive processes that guide how research is conducted. As a lens or framework, it helps researchers interpret and organize their understanding of the world, providing a systematic approach to investigation and insight (Turin T., 2024).

6.21 Positivism Paradigm of the Research

The study adopts a positivist paradigm, which is based on the assumption that a single, objective reality determines the skill requirements of business analysts across industries. In line with this view, the study considers the demand for hard and soft skills as quantifiable and observable factors that are not influenced by personal views (Aguzzoli R et al., 2024).

The positivist approach prioritizes structured quantitative techniques for data collection and analysis (Maksimovic J., 2023). This study uses surveys to obtain empirical data on the hard and soft skills necessary for business analysts to identify patterns and trends applicable to various industries. It also assesses assumptions about similarities and differences in skill requirements across sectors, focusing on causal dynamics and illuminating how industry-specific factors shape the capabilities of business analysts.

By following a positivist framework, this research aims to provide objective, evidence-driven insights to enhance a structured understanding of the changing responsibilities of business analysts. The results are intended to provide actionable recommendations for educational institutions, employers and business analysts.

6.22 Interpretivism Paradigm of the Research

The interpretivist paradigm assumes that reality is subjective and is shaped by individuals through

their experiences and social interactions (Turin T., 2024). In contrast to positivism, which prioritizes objective and quantifiable phenomena, interpretivism takes a subjective stance, emphasizing the uniqueness and situational specificity of human experience. Interpretivism was a response to positivism that challenged the idea that human behavior and social phenomena could be studied in the same way as physical phenomena. Humans generate complex meaning through their actions and interactions, and research is needed to explore the underlying variables and environmental influences that define their experiences.

This paradigm emphasizes the importance of recognizing factors such as cultural norms, social conditions, and historical contexts that contribute to shaping different social realities. Thus, interpretivism is particularly relevant to social science research because it requires methods that reflect the complexity of human behavior and social dynamics, different from those used in the natural sciences (Alharahsheh. H., & Pius a. 2020). In this study, the interpretivist paradigm focuses on understanding the socially constructed and context-dependent nature of cross-industry business analyst skill requirements. This approach asserts that skill needs are not static or universally quantifiable, but are influenced by an individual's experiences, interactions, and perceptions within the context of their particular organization and industry.

To investigate these subjective and stratified views, the study employed semi-structured interviews with two major groups: business analysts and human resource professionals (Knott, E et al., 2020). Business analysts provide first-hand insight into the challenges and expectations they face in their roles. The interviews provide insight into how they perceive the importance of hard and soft skills in their day-to-day responsibilities, the nature of their interactions with stakeholders, and how their responsibilities can be tailored to meet industry-specific needs (Yong Weng, & Jie Wu, 2024). By capturing their life experiences, the study explores how business analysts interpret the tension between their roles, manage technical and interpersonal skills requirements, and align their abilities with organizational goals.

Instead, HR professionals provide an additional perspective that illuminates how skills needs are defined, assessed, and prioritized during the hiring and training process. These interviews investigate how HR professionals view the balance between hard and soft skills of business analysts, identify skills gaps, and consider the impact of organizational culture on their expectations (Turin T., 2024). By analyzing the role of human resources in shaping the skills profile of business analysts, the study reveals deeper insights into the skills needs of employers and employees.

Through interviews with business analysts and human resources professionals, the study explores the complex, socially constructed dynamics that shape the skill requirements of business analysts. The interpretivist paradigm allows research to uncover the interplay between individual perspectives, industry standards, and cultural influences that define the role of the business analyst. These detailed qualitative insights provide a nuanced and context-based understanding of the changing needs of both hard and soft skills. This interpretationist approach ensures that research results not only describe but also reflect the complex reality of the business analyst professional environment.

6.23 Pragmatism Paradigm of the Research

Adopting a pragmatic approach and methodology can promote meaningful, impactful and ethical research. Pragmatism, particularly as developed by early American thinkers such as Charles Sanders Pearce, John Dewey, Jane Addams, William James, and George Herbert Mead, provides a valuable framework for methodological conceptualization in social research (Gillespie a., 2024). At the heart of pragmatism is an emphasis on the role of experience in giving meaning to events. This approach provides an action-oriented perspective that enables researchers to solve practical problems facing the community by selecting the most appropriate approach to answer their research questions (Allemang B et al., 2022).

This study stress practical solutions and results by explore the evolving skill needs of business analysts across industries. The research takes a pragmatic approach that treats knowledge as a tool for action, prioritizing applied research to solve real-world problems rather than adhering to rigid philosophical theories (Ormerod R J., 2021). This model is particularly suitable for this study because it integrates qualitative and quantitative methods to provide actionable insights BAs, Hrs, and educational institutions. Pragmatism showed that the challenges facing business analysts are complex and multifaceted, requiring a flexible, problem-focused approach that is deeply rooted in real-world contexts (Snyderb H, 2019). This study uses a combination of questionnaire survey and semi-structured interview to collect comprehensive data and bridge the knowledge gap between theoretical understanding and practical application (Prasad M., 2021).

With a practical viewpoint, this research wants to create useful knowledge that helps train and develop business analysts. It connects what we think with what we do by looking at clear trends and the unique details of what skills are needed. This way, the study gives helpful, real-world advice to those in the BA profession, aiding both companies and schools (Gillespie A., 2024).

6.24 Ontology

Ontology, often referred to as the "study of being," is a branch of philosophy that focuses on the nature of being and reality. It examines what exists and aims to systematically classify entities, their properties, events, and the relationships of various aspects of existence⁷⁵. Ontology seeks to create a coherent, universal framework for understanding reality, providing a theoretical basis for a comprehensive and unambiguous classification and interpretation of existence (Smith B., 2012).

Although ontology plays a vital role in philosophical inquiry and theoretical science, it is not directly applicable to this study⁸¹. This study focuses on the actual and changing needs of business analysts across industries for hard and soft skills - a topic characterized by its dynamic and context-driven nature, influenced by human experience, organizational context, and industry-specific influences (Von Rosing M., & Laurier W., 2020). The roles, responsibilities, and skill expectations of a business analyst are not static or universally defined; They are constantly being shaped by industry evolution, technological advances, and changing organizational goals. The ontology's goal of categorizing and categorizing entities explicitly is inconsistent with the flexible and adaptive nature of the research object.

6.25 Epistemology

Epistemology is a part of philosophy that looks at what knowledge is, how we get it, and what makes

it real and reliable (Vashist, R., McKay, J., & Marshall, P., 2010). It asks, "What is knowledge?" and "How do we learn?" while also checking how much we can know and how we prove things are true. Beyond just looking at what knowledge is, epistemology also considers who gets to make knowledge, how we decide if someone or something is trustworthy, and what affects whether knowledge is valid (Holma K., & Hyytinen H., 2015).

In this study, epistemology helps us figure out how to collect and check knowledge about the changing skills needed for business analysts (Ni'mah S. J. et al., 2024). We use both numbers (quantitative) and stories (qualitative) to get a full picture. This matches the rules of epistemology, making sure our ways of gathering data - like surveys and talks - are solid and trustworthy. By mixing hard data from surveys with personal views from interviews, the study tackles questions about what's true and what can be trusted. It shows not just clear trends, but also the real-life complexities faced by professionals (Carter J. A., & Littlejohn C., 2021).

The study's approach to knowledge also focuses on including everyone's viewpoint - from workers to bosses and schools - to make knowledge creation more open (Sabnis S. V., & Newman D. S., 2023). Epistemology helps us see how power and who gets to say what's true affects what we know about business analysis (Holma K., & Hyytinen H., 2015). The research recognizes the authority of industry practitioners, HR professionals, and educators as credible sources of knowledge. Data is validated through rigorous methodology, ensuring that both quantitative and qualitative insights are grounded in evidence. By aligning findings with both practical realities and theoretical frameworks, the research ensures its conclusions are perceived as both credible and actionable.

6.26 Axiology

Axiology, the philosophical study of values, examines what is good, desirable, and worthwhile. It serves as the foundation for understanding the principles guiding human judgments, actions, and beliefs. In values-based teaching, axiology provides a framework for bridging the dichotomy between objective and subjective interpretations of values. Rooted in the axiom of value, it focuses on identifying the "good-making" and "bad-making" properties of actions, decisions, and thoughts, offering a way to evaluate them based on their contribution to human flourishing or societal benefit (Edelheim J et al., 2022). Its role in this research is limited. The study primarily focuses on understanding the **social phenomena** surrounding the evolving skill demands for business analysts across industries. It emphasizes the practical, observable aspects of these changes and their implications for employees, employers, and educational institutions, rather than deeply engaging with the philosophical evaluation of values.

6.3 Critical theory

A defining feature of critical theory is its emphasis on self-reflection, particularly its exploration of how knowledge is shaped by and rooted in specific contexts (Devetak R., 2013). This intellectual tradition dates back over seventy-five years to its formal establishment at the Institute for Social Research in Frankfurt, Germany, in 1923. Over time, critical theory has consistently provided a

strong critique of major intellectual movements of the twentieth century, such as existentialism, positivism, and, more recently, postmodernism. Its lasting influence and importance highlight the depth and value of its ideas, serving as a significant reminder to the academic community (How A., 2017).

Critical theory helps us look closely at how the fast-changing duties of business analysts (BAs) change what skills they need, pushing workers, bosses, and schools to act quickly (Klikauer T., 2015). As industries change with new tech, global markets, and new demands, what BAs are expected to do gets more varied, complex, and fluid. This study uses critical theory to show what happens when BA roles shift so quickly. Now, BAs need more than just tech skills; they must also plan strategically, work well with others, and keep up with new tech. These fast changes cause skill gaps, unclear roles, and more stress for BAs to juggle tech know-how with people skills and analysis (Mumby D. K., 2014).

Employers, workers, and schools face big hurdles in keeping up with the fast-changing skills needed for business analysts (Lewis L., 2019). Employers struggle to describe these new needs, leading to mixed messages in hiring, training, and how they judge performance (Alsharari N. M., & Daniels B., 2024). Workers find it hard to meet these new expectations without enough training or support. Meanwhile, schools often don't update their courses fast enough, causing a disconnect between what's taught and what's needed in jobs (Marquez L. et al., 2024).

To tackle these challenges, business analysts should keep learning, get certified, and mix their technical and people skills to stay up-to-date. Companies need to set up clear paths for skill improvement, offer specific training, be more adaptable, and update hiring practices to match today's BA needs. Schools should team up with businesses to make courses that are hands-on, cover different areas, and match current industry trends (Abbas J., Kumari K., & Al-Rahmi W. M., 2024). Also, we need fair and inclusive ways to make sure everyone, especially those from underrepresented groups, can get training and succeed in a fast-changing work world.

By using the critical theory, this research provides actionable suggestions to navigate these changes, ensuring that business analysts, organizations, and academia remain agile and prepared for the challenges of the future (Ife J., 2016).

6.4 Five Qualitative Approaches

Creswell(2016) designed five qualitative methodologies in his book : ethnographic research, case study, narrative research, grounded theory and phenomenology. This study compares Business Analysts (BAs) across multiple industries, making it a bounded case study. By interviewing BAs and HR professionals in different industries, the researcher collecting data from various perspectives to create a holistic understanding of the demand for BA's hard and soft skills. The study focuses on some BAs' lived experiences in an evolving work environment, which aligns with **narrative research**. When BAs share their personal journeys of adapting to changing demands and the skills

they needed to succeed, this data takes the form of narratives. Narrative research is about understanding how events (e.g., evolving job demands) are experienced over time, which could be integral to this research. Grounded theory aims to generate a theory based on the data collected. However, This study is not attempting to develop a new theory about the demands for hard and soft skills but rather to explore and compare these demands across industries. The research relies on existing frameworks of hard and soft skills rather than building a new conceptual model from scratch. Ethnography involves studying the culture or social norms of a specific group or community. This research is not focused on the cultural practices of companies but rather on the skills required for the BA job across industries. So ethnography is also not applicable for this study. Phenomenology aims to understand the **essence** of a single, shared lived experience across individuals. For example, what it means to experience grief, joy, or a specific medical condition. This research, however, focuses on comparing and exploring the varied demands for skills across industries, which does not center on a shared phenomenon. This research is more concerned with practical differences in skill demands across sectors rather than uncovering the **universal essence** of being a Business Analyst in an evolving environment.

7 Ethical considerations

The protection of human subjects through the application of appropriate ethical principles is crucial in any research study. In this research, ethical considerations hold particular importance due to the qualitative methods employed, including interviews with business analysts and HR professionals. While the participants may not belong to a vulnerable group, the in-depth nature of the interview process requires careful attention to potential discomfort or stress they may experience when discussing professional challenges and experiences(Arifin S. R. M., 2018).

To address this, questions will be thoughtfully designed to explore insights without causing distress. Participants can choose not to answer questions or leave the study anytime they want. This keeps

their well-being first, balancing the need for good data with ethical practices

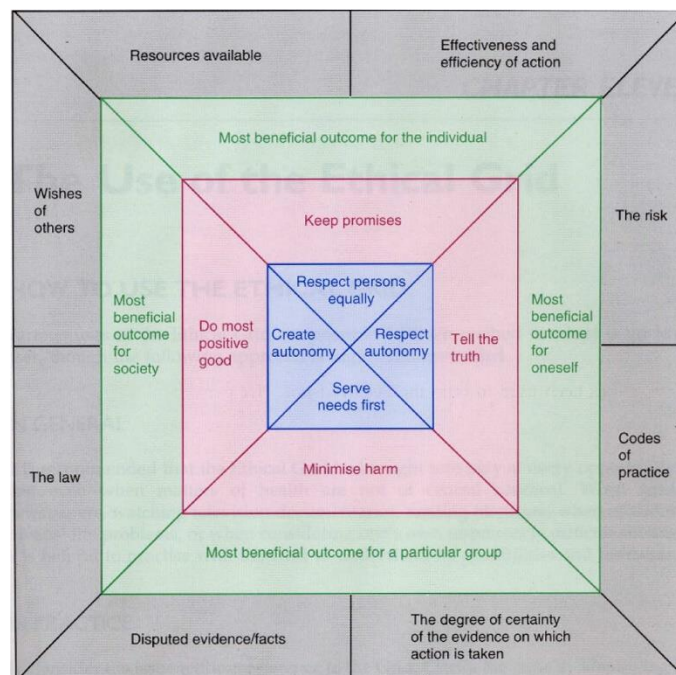


Figure 2

(Stutchbury K., & Fox A., 2009)

Keeping participant data safe is a key part of this research's ethics. We'll store all data from questionnaires and interviews in secure, password-protected files. We'll take out any personal details and make the data anonymous to protect privacy. These steps help protect participants' rights, build trust, and keep the study honest.

8. Conclusion

8.1 Conclusion with contribution

In short, this study looks at how the job of a business analyst (BA) is changing in finance, healthcare, and manufacturing. The findings show that BAs need more tech skills, better strategic thinking, and deep industry knowledge to face new challenges. Using role theory, the study shows how BA roles change to fit each industry's needs. It uses case studies, talking to both BAs and HR people to get different views on what skills are needed. This research helps BAs and companies see how the BA role is evolving and gives practical advice on how to adjust to these changes.

8.2 Limitations of This Research

Like all research, this study has some limitations that we need to know about to understand its results better and guide future studies (Connelly L. M., 2013). This research was done in the UK, looking at different industries to see what skills business analysts need. Focusing on the UK gives us a good

look at that market but means the results might not apply everywhere else (Ochieng P.A., 2009). Different countries have different business environments, job markets, and education systems, which can change what skills are needed.

Also, because we used people's own reports, there might be biases, like not remembering things correctly or exaggerating (Akanle O. et al., 2020). The fast pace at which business analytics skills evolve due to new technology and industry changes means our findings might not stay relevant for long. Plus, using surveys and interviews might not fully show how complex the mix of technical and people skills can be.

Even with these issues, the study tries to offer useful insights and a base for more research. It gives a good view of the UK market and sets up a model that can be used to compare with other places.

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