

**National University of Political Studies and Public Administration**  
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**The impact of artificial intelligence on management strategies  
and practices – Thesis summary**

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Artificial intelligence (AI) has been a long-standing fascination for humanity, but today, it seems closer to us than ever in our history. How should managers at all levels, prepare for its arrival and impact on organisations and work? Do we, as managers, have the knowledge to adopt such a disruptive technology and ensure that our organisations are not left behind? But, at the same time, can we guarantee that, while chasing this novel AI dream, we are not taking unnecessary risks that can potentially expose us, the organisation, our employees, or our customers to unknown, not only risks, but even perils?

The reasons for this research emerged as we started to take notice of the speed of technological progress and realised that there is an increasing gap between information technology experts and managers when it comes to artificial intelligence. Surveys from large consulting companies were reporting “rapid adoption of AI [...] across global businesses” (McKinsey, 2018a) while Gartner’s 2018 Hype Cycle was predicting that AI will create 2.3 million jobs by 2020 (Hickey, 2018). However, these findings did not seem to correlate with anecdotal evidence to the contrary and has and it made us question how common is AI adoption across businesses and investigate what are the strategies and practices employed by these organisations to successfully adopt AI.

Leaning on our technical background and recognising the complexity of AI, we pondered if this complexity does not cause a disconnect between what AI represents for experts and what managers recognise as AI. Also, considering the complexity, we posed ourselves the question if the reported adoption is driven by technical factors, AI as a technology deployed by IT departments to assist very specific business functions, or as a corporate strategy, AI as business enabler, across multiple areas and creating new value.

And, this time drawing on our expertise in cyber security, we reflected on the potential risks and threats that such an advanced technology might present for businesses and whether organisations and managers were sufficiently aware of these risks, understood them, and were prepared to manage them.

Moreover, complex technologies, including Artificial Intelligence, rarely function in isolation. Instead, they often rely on a suite of enabler technologies and complementary skills already existing in the organisation to facilitate their effective deployment. This led us to ponder

whether there are specific prerequisites or foundational technologies that are essential for AI adoption, or if perhaps organizations can adopt AI directly without significant prior experience or extensive capabilities.

These considerations led us to undertake this interdisciplinary investigation into the impact of artificial intelligence adoption on managerial practices, with a focus on examining how organisational strategies are currently being influenced by AI. Our goal was to design an exploratory pilot study that would facilitate the generalisation of the findings and allow for meaningful insights into the implications of artificial intelligence usage and adoption.

In order to gain a comprehensive understanding of the implications of AI and its overall influence on managerial practices, we commenced our investigation in Chapter 2 with a broadly scoped literature review aiming to identify the primary trends in AI and map their evolution over time within the business and management literature. Through this broad approach, our objective was to outline the major periods of AI evolution and extract the pivotal themes and topics associated with each of these periods as well as examine how they connect with each other.

Subsequently, we leveraged the identified themes and topics from the initial analysis as a foundation for a more nuanced, targeted bibliometric analysis using the Scopus database, focusing only on the recent years. This secondary analysis allowed us to be more detailed and derive a thematic evolution map of the topics as well as explore the progression of the research in AI within the specific area of business and management.

Setting the stage for our subsequent research and seeking to pinpoint the gaps in AI adoption, we concluded Chapter 2 with a brief review of the methodology for the academic literature review pertaining to AI adoption. Our findings, detailed as part of Chapter 3 **Error! Reference source not found.**, revealed that there is a scarcity of available research in this area, highlighting the importance and relevance of AI adoption as a topic for our exploratory research study.

Chapter 3 establishes the conceptual framework for artificial intelligence, examining multiple definitions of this complex, multifaceted concept, in order to arrive at a common understanding of the term, recognising that potential reasons for management's reluctance to implement AI in everyday business life could be attributed to the different interpretations of the

underlying concept. Following a more general classification of AI, where we briefly cover general artificial intelligence and super-intelligence because of their high potential impact in the future, we delimit our research, focusing only on the narrow type of artificial intelligence and provide our working definition of the concept.

Building on the previous conceptual framework, we proceed with a historical examination of how AI has transformed from its exclusively technical origins to a versatile business tool before zooming in and exploring how AI can support business strategy and optimise decision-making processes. We frame this analysis through the perspective of applying AI technologies to solve Miles et al.'s (1978) entrepreneurial, engineering and administrative problems. For the entrepreneurial problem we focus on the components of creativity and analysis, breaking them down and exploring which can be potentially augmented by current AI technologies.

For the engineering and administrative problems and in the context of the organisational structure, we investigate the type of tasks that can be taken by AI and how this might impact future jobs, including both pessimistic scenarios (stalemate, check and checkmate), and optimistic ones where AI creates new roles. Furthermore, we continue and investigate the three organisation types identified by Miles & Snow (2003), exploring how AI might impact each one of them.

Acknowledging the legal ramifications that AI adoption can have, we inspect the precedents that can be applied when evaluating the consequences of AI actions. We delve into liability, evaluating the principles that can be applied to allocate responsibility for AI-driven harm, before exploring the larger paradigm of potential public risk as represented by AI.

Concluding Chapter 3, we revisit the topic of AI adoption as reflected in the academic literature and go into a detailed examination of the limited, from the perspective of number, yet important from the perspective of content, papers that were identified in the Scopus database as pertaining to the subject. We find that some of the studies focus on applying AI to address specific, narrow, problems, whereas others investigate the aspects of collateral or enabling technologies, such as Industry 4.0 or the Internet of Things. However, we observe that there are also studies that delve into the broader topic of AI adoption, analysing the benefits as well as the barriers, expanding also the perspective to scrutinize the potentially systemic risks of intended bias when AI algorithms are obscure and controlled by few monopolies.

Continuing to build upon the foundations established through our preceding literature reviews, we extend our inquiry to analyse artificial intelligence within the paradigm of previous general purpose technologies. We probe into the historical evolution of past industrial revolutions to better understand the implications of Industry 4.0 on AI growth and examine how digitization, digitalization, and digital transformation are converging to facilitate AI adoption. Next, we zoom in on two fundamental digital transformation technologies, cloud computing and Big Data, examining their role as foundation for AI and the necessity of their development for the emergence of what we perceive today as artificial intelligence. We conclude the chapter by taking a more theoretical, structured approach to technology adoption and examine the general academic theories that can be applied, focusing on Tornatzky & Fleischer's (1990) Technology-Organisation-Environment framework, and Rogers' (1983) Diffusion of Innovation framework and presenting the identified research gaps.

Chapter 5 is devoted to the development and validation of the research model designed to address the previously identified research gaps. We initiate this endeavour by stating our research objectives and drawing a correspondence line to specific research hypotheses, following with a description of the overall research methodology. Subsequently, we introduce our qualitative research approach, justifying our decision to use a semi-structured interview method. We then examine the details of our findings from the conducted interviews. Owing to the heterogenous structure of the participants and the participants' organisations, the interviews provided a diverse range of perspectives on the level of adoption of digital technologies, data as foundation for decision making, Big Data, analytics, data lakes, before going into artificial intelligence topics covering comprehension, usage and trials, understanding of risks and benefits, and ultimately adoption.

Based on the insights gained from the interviews, we were able to refine our research model, which served as the foundation for the quantitative component of our study. The first part of this section provides an overview of the demographic characteristics of our participants, before evaluating the measurement model in terms of its reliability, internal consistency, and validity. Upon confirming the validity of our instrument, we proceeded to analyse the structural model, examining each path and assessing the level of support for each of the research hypotheses. We

conclude this section with an in-depth discussion of our findings, setting them in the broader context created by other studies.

Chapter 6 brings about a comprehensive analysis of the implications of our study, with a focus on the academic, practical and policy ramifications. From an academic perspective, we highlight the contributions made by our exploratory study, underscoring the confirmatory and clarificatory nature of our findings in relation to previous research. We also discuss the practical implications for organizations, revealing a growing AI divide that amplifies the previous digital divide. Our analysis identifies the characteristics of AI champions, those organisations that successfully leverage artificial intelligence, and explores how some of these traits can be transferred to other organisations. The policy implications of our study conclude the section, highlighting discrepancies between our findings and the European Commission's baseline assumptions for the 2030 Digital Compass (2021). We recommend updated targets for the 2030 Digital Compass (2021) and propose policy considerations for fostering AI literacy across businesses and individuals, emphasizing the need for careful measurement to ensure equitable distribution and access. The chapter concludes by retrospectively identifying the limitations of our study and proposing avenues for future research.

Chapter 7 closes the loop on the entire PhD journey, presenting a concise summary of the research undertaken and the knowledge acquired during this academic pursuit.