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Generative AI in Traditional Banking Institutes

A Qualitative Study of its Utilisation, Value Creation, Challenges and Strategic Facilitators

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ABSTRACT (MAX. 200 WORDS):
This master's thesis investigates the utilisation of generative AI within traditional banking institutions, emphasising value creation, challenges, and strategic facilitators. Previous research underscores the importance of these areas in the context of generative AI's novel application in traditional banks. Findings reveal that traditional banks primarily employ generative AI for internal operations, enhancing efficiency and productivity by automating repetitive tasks and assisting with activities such as code generation and report feedback. However, the adoption of generative AI for customer-facing applications remains limited due to privacy and ethical concerns. Challenges identified include technological integration, ethical and privacy issues, organisational culture, and stringent regulatory compliance. To address these, banks have formed strategic alliances with tech giants, invested in AI literacy and training, nurtured an innovative culture with management support, and aligned AI initiatives with business objectives. These facilitators help banks navigate the complexities of integrating generative AI into their operations. In conclusion, while traditional banks are in the early stages of adopting generative AI, they are making significant strides in internal utilisation, although external applications and scaling remain challenging. Future research should explore the long-term impacts and readiness of traditional banks to adopt generative AI on a larger scale.

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Lucas Ek and Elliot Arnarp

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1 Introduction

Artificial Intelligence (AI) marks a significant shift in the way technological progress is driving industries forward. Russell and Norvig (2016) describe AI as the capability of computer systems to imitate human intelligence. This includes aspects such as perception, understanding, action and learning. AI stands as a fundamental element of modern emerging technologies, offering substantial improvements in operational efficiency across various sectors (Russell & Norvig, 2016; Benbya, Davenport & Pachidi, 2020). AI's transformative impact is widely recognised in business and is considered essential for maintaining competitiveness. The International Data Corporation forecasts that global spending on AI technologies will exceed $500 billion by 2027, emphasizing the growing investment in AI solutions (IDC, 2023).

Generative AI, exemplified by innovations such as Open AI's Chat-GPT, represents a significant evolution in AI's capabilities. These technologies generate new content from extensive data-driven machine-learning models, responding dynamically to user inputs (Feuerriegel et al., 2024; Sætra, 2023). While the potential of generative AI to revolutionise daily life and business practices is vast, its deployment is accompanied by substantial challenges such as ethical dilemmas and policy considerations (Nah et al., 2023), as well as integration difficulties (Chui et al., 2023).

One industry where generative AI holds significant potential is banking, with estimates suggesting it could add between $200 and $340 billion annually to the industry (Chui et al., 2023). Recent years have witnessed a surge in digital banking, making the adoption of cutting-edge technologies like AI no longer a choice but now a necessity for banks to remain competitive. This shift towards digitisation has intensified competition between traditional banks and emerging FinTech companies. To thrive in this new landscape, continuous innovation and the strategic utilisation of AI are extremely important for traditional banks to secure their future (Shetty & Nikhitha, 2022; Swedish Bankers Association, 2023).

Despite the immense potential, widespread adoption of generative AI in traditional banks is filled with challenges. Banks struggle to efficiently deploy these technologies (Dwivedi et al., 2023; Agrawal, 2023). For instance, has traditional banks historically encountered difficulties in their transition from experimental AI projects to scaling these technologies throughout their operations (Biswas et al., 2020). Technical and strategic challenges further complicate this transition. These include ensuring compatibility with existing systems, training employees on these new tools, and bridging the knowledge gap among executives regarding AI's strategic applications (Fares et al., 2023).

Furthermore, The AI Index Report (2023) highlights a considerable gap between the swift adoption of AI in the corporate sector and the slower pace of related academic research, highlighting slow progress in exploring AI's practical applications in banking. Ongoing research into how generative AI is utilised and guiding traditional banks in their adoption is crucial (Dwivedi et al., 2023; Bandi et al., 2023). With this in mind and that generative AI is still in its early stages, understanding and guiding traditional banks in their adoption of generative AI is more relevant than ever.

1.1 Research Problem and Motivation

Our research problem centres on the widening gap and increased competition between traditional banks and FinTech competitors in the digitised banking landscape. To stay competitive must traditional banks successfully integrate AI into their operations (Shetty & Nikhitha, 2022; Swedish Bankers Association, 2023). Jourdan et al. (2023) contribute to this ongoing debate through their comprehensive content analysis of finance and information systems literature on FinTech. Their study highlights a large focus in recent literature concerning FinTech within finance and information system journals, particularly on its implications for traditional banks. They observe a notable concern regarding the potential impact of FinTech's on traditional banking institutions. With their lower regulatory and operational costs coupled with technological advancements are FinTech's reshaping the competitive landscape. This has posed a heightened risk of traditional banks falling behind if they don't react. And the critical role a strong banking sector plays in fostering economic health and growth, with healthy banks providing the credit and capital businesses need to invest, expand, and create jobs (Shetty & Nikhitha, 2022), our research finds particular relevance.

The importance and relevance of generative AI in particular stems from Gartners (2023) report placing generative AI at the forefront of technology advancements and predicting that 80% of companies in 2026 will have incorporated generative AI APIs and models into their operational frameworks. Considering this and the fact that generative AI holds significant potential in banking, with estimates suggesting it could add between $200 and $340 billion annually to the industry (Chui et al., 2023), exploring generative AI in traditional banks is highly relevant and holds significant value. Further fuelling our research interest are the historical difficulties banks have faced in adopting technology, particularly AI. While previous studies have explored technology adoption in banking (Ghandour, 2021) and the use of AI in general (Shetty & Nikhitha, 2022), these studies also highlight the numerous challenges and complexities traditional banks encountered.

Our research motivation is further strengthened by the limited existing research and the call for deeper exploration in this area. Building on what we mentioned in the introduction, The AI Index Report (2023) identifies a significant gap between the rapid adoption of AI by corporations and the pace of academic research, highlighting slow progress in exploring AI's practical applications in traditional banking institutes. The urgency and significance of generative AI research in the banking sector resonate strongly with the information systems field. This is further underscored by the European Conference on Information Systems (ECIS) 2024 track description, which identifies AI as a crucial research area due to its substantial societal impact. ECIS (2023) emphasises the timely nature of AI investigation and encourages research that delves into AI's organisational applications, challenges, and opportunities, with a particular interest in studies on generative AI's organisational impacts. Building upon the identified need, recent information systems research by Parthiban and Adil (2023) and Agrawal (2023) underscores the significance of conducting organisation-specific research on generative AI. Additionally, other studies information systems research by Ooi et al. (2023) and Dwivedi et al. (2023) call for focused investigation into generative AI adoption and utilization specifically within banking institutions. Similar has other authors who has

investigated generative AIs opportunities and challenges within banking called for furthered research (Karangara, 2023; Kalia, 2023).

1.2 Research Purpose and Research Questions

With this in mind, the purpose of this master's thesis research is to investigate the utilisation of generative AI within traditional banking institutes and identify challenges and facilitators for leveraging this technology to create value. By examining generative AI in traditional banks, this study aims to provide valuable insights that enable these institutions to successfully utilise and adopt generative AI. Therefore, our two-research question are as follows:

How are traditional banks currently utilising generative AI and how does it create value?

What are the key challenges and facilitators for traditional banks in successfully adopting and leveraging generative AI?

1.3 Delimitation

This study primarily focuses on the application and impact of generative AI technologies within traditional banking institutes. It aims to identify and analyse its utilisation and concurrently find its value creation and challenges ultimately revealing the best strategic facilitators for its application. However, it is important to acknowledge certain limitations of our research. The study will investigate generative AI solutions broadly, without concentrating on specific technical solutions. This approach facilitates a comprehensive understanding of the field, emphasising the broader impact and adoption within the industry rather than delving into individual solutions. However, the study will not investigate the longterm implications of either generative AIs effect on traditional banks or the result of their strategic facilitators. Those implications are not included because of the novel nature of generative AI in traditional banking institutes.

Employing a qualitative methodology, the research relies on interviews to gather insights in addition to previous research. Moreover, the qualitative research methods will only focus on traditional banking institutes in situated in northern Europe since it helps us reach participants easily and keeps things relevant to the context of our study.

2 Literature Review

This chapter includes our approach to conducting the literature review, presents the outcomes of the reviewed literature in terms of concepts, specifies the theories we have selected to inform our study, and ultimately concludes our findings from the literature.

2.1 Artificial Intelligence

2.1.1 Definition of Artificial Intelligence

Given the central role that Artificial Intelligence (AI) plays in this research, it is imperative to establish a clear definition for it, especially considering its lack of a single unified definition. The complexity and constantly evolving nature of AI contribute to the absence of a universally accepted definition (Russell & Norvig, 2016). Russell and Norvig (2016), who are forefront figures in AI research, suggest that AI is commonly associated with computers' ability to mimic human intelligence. They mean that AI is often used in applications that have been equipped with human qualities such as reading, writing, speaking, explaining, improving, and generalising from past experiences (Russell & Norvig, 2016).

In the realm of information systems studies, there have been numerous definitions utilised, yet there is one recurrent definition that emphasises *"the ability of machines to perform humanlike cognitive tasks, encompassing automation of physical processes, sensing, perception, problem-solving, decision-making, and innovation"* (Benbya, Davenport & Pachidi, 2020). Given the alignment of this definition with the one used by Russell and Norvig (2016), it will serve as the basis for this research. This will help us establish a clearer understanding of what AI is and its application.

2.1.2 Subsets of AI and their relationship

AI encompasses a broad spectrum of technologies designed to emulate human cognitive functions. It includes subfields like Machine Learning (ML), Deep Learning (DL), and Generative AI, each contributing distinctively to the advancement of intelligent systems (Zhuhadar & Lytras, 2023). ML is a subset of AI that enables algorithms to learn from data and make decisions without explicit programming. DL is a more specialised subset of ML that utilises complex neural networks to analyse data across multiple layers, making it effective for processing large volumes of unstructured data. Generative AI, another area of AI focuses on creating new data that resembles real-world data, such as text and images. This technology uses both supervised and unsupervised learning to generate new content, expanding the capabilities of AI beyond simple data interpretation to include the creation of new, realistic data outputs (Dhoni, 2023). The below figure illustrates this relationship (Figure 2.1):
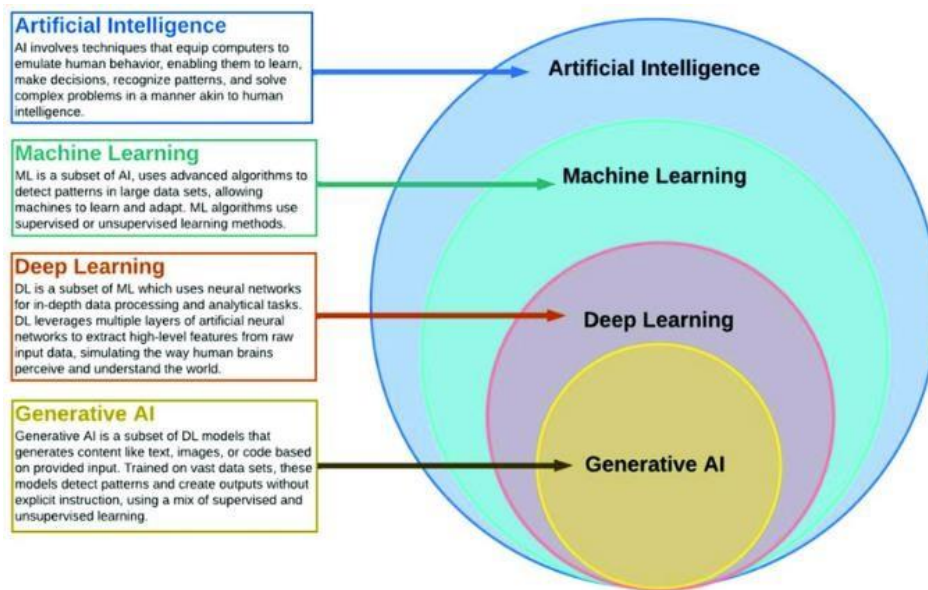
Figure 2.1: Subsets of AI (Zhuhadar & Lytras, 2023)

2.2 Generative Artificial Intelligence

2.2.1 Definition and Concept of Generative Artificial Intelligence

The term generative AI refers to computational techniques that can generate seemingly new, meaningful content such as text, images, or audio from training data (Dhoni, 2023; Feuerriegel et al., 2024). The widespread diffusion of this technology with examples such as Dall-E 2, GPT-4, and Co-Pilot is currently revolutionising the way we work and communicate with each other (Feuerriegel et al., 2024). Similarly, Sætra (2023) suggests that generative AI stands out for its ability to produce new content in response to user prompts by utilising machine learning models trained on vast amounts of data. Moreover, Cevallos et al. (2023) distinguishes generative AI from general AI, similar to what was described by Dhnoni (2023). They mean that generative AI represents a distinct branch of artificial intelligence, focusing specifically on producing novel data that closely mimics human-created content. In contrast, general AI encompasses a broader range of technologies, including data analysis and process optimisation. This sub-domain of AI has transformative implications, particularly in fields where innovation and creativity are paramount (Cevallos et al., 2023).

Furthermore, Feuerriegel et al. (2024) categorise generative AI into three levels: model, system, and application. At the model level, generative AI involves generative modelling instantiated within a machine learning architecture, such as a deep neural network. This enables the creation of new data samples based on learned patterns. Moving to the system level, a generative AI system encompasses the entire infrastructure, comprising the model, data processing mechanisms, and user interface components (Feuerriegel et al., 2024). The model acts as the central element of the system, facilitating interaction and application within a broader context. Lastly, generative AI applications are situated within organisations to provide value by solving specific business problems and meeting stakeholder needs. These

applications can be seen as human-task-technology systems or information systems leveraging generative AI technology to enhance human capabilities for specific tasks (Feuerriegel et al., 2024).

Considering this research focuses on the application of generative AI within traditional banking institutes, particular attention will be given to the application-level perspective, with some emphasis on the system-level view. These perspectives will guide the analysis in this study.

2.3 Adoption and Utilisation of Technology in Banking Institutes

2.3.1 Value Creation

The adoption of technology in the banking sector has significantly transformed the operational capabilities and competitive landscape of financial institutions. As highlighted in recent studies, banks are increasingly embracing digital transformations to enhance efficiency, customer service, and financial performance (Zhu & Jin, 2023; Al Ajlouni & Al-Hakim, 2018). This shift involves the integration of advanced technologies such as artificial intelligence, big data, and blockchain into their core operations, which not only reduces operational costs but also improves the quality of customer service through personalized and on-demand services (Zhu & Jin, 2023).

Moreover, digital transformation provides banks with a chance of not only digitisation of resources. It involves transforming key structural and organisational aspects, utilising advanced information technologies, and enhancing value creation through key products and services, ultimately resulting in adjusted or entirely new business models (Kane et al., 2015: cited in Chanias, Myers, & Hess, 2019). It also opens new revenue streams such as digital wealth management and online lending platforms, which are increasingly popular among consumers (Al Ajlouni & Al-Hakim, 2018). Banks can also leverage technology to tap into previously underserved markets, enhancing financial inclusion and extending their market reach.

The banking landscape has also undergone significant changes due to digitisation, leading to increased competition from emerging FinTech companies (Shetty & Nikhitha, 2022; Swedish Bankers Association, 2023). This evolution has profoundly impacted traditional banks, affecting their structure, operations, and compliance measures. To stay competitive, traditional banks must embrace new technologies and strategies that streamline processes, offer personalised services, and comply with evolving regulations (Shetty & Nikhitha, 2022). Focusing on creating customer experiences that are convenient, efficient, and secure is crucial in this technology-driven era, where customers demand faster and more seamless services. Adopting advancements like artificial intelligence is essential for banks to stay ahead and offer distinctive, value-added services (Shetty & Nikhitha, 2022). Moreover, Jourdan et al. (2023) points to the fact that many information systems and finance papers discussing this subject mean that adopting FinTech technology and collaborating with FinTech companies is one way for traditional banks to stay competitive.

Furthermore, the integration of AI in banking has redefined traditional banking processes, introducing significant improvements in operational efficiency, risk management, and customer service. As noted by Ghandour (2021) and Lazo and Ebardo (2023), AI's capabilities in data analytics, machine learning, and customer interaction technologies have been pivotal in transforming banking operations.

Operational Efficiency through Automation

AI's impact on operational efficiency is primarily through automation of routine tasks, which significantly reduces operational costs and human error. Romão et al. (2019) illustrate how robotic process automation streamlines operations that traditionally require substantial human intervention. Additionally, Lazo and Ebardo (2023) discuss AI's capability in managing complex risk assessments and fraud detection processes efficiently, further enhancing operational robustness.

Customer Service

AI technologies are increasingly more being deployed as chatbots and virtual assistants for customer services (Han, Yin, Zhang, 2022). These tools are equipped with natural language processing capabilities that facilitate around-the-clock customer support. Ghandour (2021) highlights how AI can sift through large datasets to anticipate customer needs and tailor services, thereby boosting customer satisfaction and loyalty. Lazo and Ebardo (2023) also emphasise the role of AI in developing deeper insights into customer behaviour, allowing banks to offer more targeted services.

Risk Management

AI enhances the banking sector's ability to manage risk by providing tools that can predict and mitigate potential losses (Arsic, 2021). Machine learning algorithms assess the risk profiles of clients with greater accuracy than traditional models, enabling more precise underwriting and credit scoring. Lazo and Ebardo (2023) also discuss AI's ability to monitor and analyse realtime transactions, which not only prevents fraud but also provides banks with the agility to adapt to new threats as they emerge.

2.3.2 Challenges and Considerations

Adopting new technologies in the banking sector presents several challenges, extensively discussed by Diener, Dvouletý and Špaček (2021), Zhu and Jin (2023), and Al Ajlouni and Al-Hakim (2018). These studies highlight the key barriers banks face during their digital transformation, providing a comprehensive understanding from managerial, security, and operational perspectives.

Regulatory

Firstly, regulatory and compliance challenges are significant. Banks operate in a heavily regulated environment where compliance with stringent laws and guidelines is mandatory. The introduction of new technologies often necessitates navigating complex regulatory landscapes, which can delay or complicate the adoption of these technologies (Diener,

Dvouletý, & Špaček, 2021). Secondly, legacy systems in banks pose a major technological hurdle. Many banks rely on outdated infrastructure that is not compatible with newer technologies. Upgrading these systems is costly and risky, involving significant downtime and potential security vulnerabilities during the transition (Zhu and Jin, 2023).

Moreover, Lazo and Ebardo (2023) explain that navigating this complex regulatory landscape is a significant challenge for banks, as they must align their AI strategies with strict regulatory standards to avoid penalties and ensure compliance. Among all issues that concern the utilisation of AI in banking institutes the most prevalent are: third party vendor management, data ownership, privacy, ownership rights, costs, and cybersecurity (Truby, Brown, Dahdal, 2020). Truby, Brown and Dahdal (2020) explain that these challenges face banks with slow, lengthy, risky, and potentially costly transition periods.

Organisational

Additionally, there is often cultural resistance to change within organisations. Banks typically have established ways of operating, and introducing digital transformations requires changing the organisational culture to embrace new technologies and methods. This can be met with resistance from employees accustomed to traditional practices (Diener, Dvouletý, & Špaček, 2021). Moreover, ensuring customer trust and acceptance is crucial. As banks introduce new digital services, they must ensure these services are secure and reliable to maintain customer trust (Zhu and Jin, 2023). Any failure in digital services can lead to a loss of customer confidence and potential reputational damage (Zhu and Jin, 2023).

Operational Costs

The financial burden associated with digital transformation also poses a significant challenge. Investing in new technology is expensive, and there is always a risk that the investment may not yield the expected return, particularly for smaller banks that may not have the capital to risk unproven technologies (Diener, Dvouletý, & Špaček, 2021). Furthermore, the integration of AI within existing banking infrastructures often involves significant financial investments, especially during the initial phases. Ghandour (2021) discusses the financial implications of adopting AI technologies, emphasising that smaller banks may struggle with the high costs associated with these technologies. Romão et al. (2019) also highlight the ongoing expenses related to the maintenance and development of AI systems, which require continuous investment in new technologies and staff training.

Security and Ethics

Banks must manage the security risks associated with digital platforms to address regulatory and compliance issues that arise with the introduction of new technologies. The ongoing need to innovate and stay ahead of technology trends requires continuous investment in new technologies and training for staff, which can be costly (Al Ajlouni and Al-Hakim, 2018).

Moreover, with the rise of digital banking platforms, security risks such as data breaches and cyber threats have become more pronounced. Ghandour (2021) and Rahman et al. (2021) both stress the necessity for robust cybersecurity measures to protect sensitive customer information and maintain trust. Lazo and Ebardo (2023) additionally point out the ethical challenges of AI, including issues of algorithmic bias and the need for transparency in AIdriven decisions, which are crucial to uphold fairness and avoid discriminatory practices.

Finally, the rapid pace of digital transformation necessitates that banks not only adopt new technologies but also fundamentally rethink their business models and operational processes to fully capitalise on these advancements. This involves retraining staff, reconfiguring organisational structures, and sometimes even changing the corporate culture to be more agile and innovation-friendly (Zhu and Jin, 2023; Al Ajlouni and Al-Hakim, 2018).

2.4 Generative AI Adoption

The exploration of generative AI is still in its early stages, with its actual utilisation remaining largely unexplored. However, researchers have begun to investigate its value creation, challenges, and considerations.

2.4.1 Value Creation

Customer Services

There have been previous studies that have researched the opportunities and value creation for generative AI in different business settings. For example, Nah et al. (2023) list a number of areas where generative AI can serve businesses and create value such as marketing and sales, operations, IT, human resources, accounting and finance to employee optimisation. Moreover, Dwivedi et al. (2023) contribute to the discourse by illustrating how generative AI foster a deeper personalisation in banking services, which can significantly influence customer loyalty and bank profitability. Their analysis suggests that generative AI not only streamlines operations but also enhances the strategic aspects of banking by enabling more customised and customer-centric products and services.

For instance, Nah et al., (2023) say that ChatGPT can act as a chatbot providing customer service, functioning as a virtual assistant for aiding customers in accomplishing certain tasks. Drawing from this, Karangara (2023) believe that generative AI technologies can redefine customer services within banks by powering sophisticated chatbots and virtual assistants that enhance interaction and provide continuous services, boosting customer satisfaction and retention.

Automation

Additionally, it can serve as a collaborator for a variety of internal or external company projects or campaigns. According to Nah et al. (2023), this implies that the scope of generative AI technologies like Chat-GPT is limitless. Similarly, Dwivedi et al. (2023) further examine the opportunities for generative AI and more particularly ChatGPT and point to the transformative power of generative AI. It is expected to have a positive effect on productivity enabling automation of repetitive work and allowing people to focus on creative and nonrepetitive activities (Dwivedi et al., 2023). Banking and financial services are especially an example where generative AI can help increase the accuracy in audit and advisory services, enabling banking executives to focus on more important tasks (Dwivedi et al., 2023). Karangara (2023) support this, stating that generative AI drives operational

efficiencies, particularly in automating routine tasks such as document verification and compliance checks, which are traditionally labour-intensive.

Security, Analytics and Innovation

These technologies also improve fraud detection and risk management, as generative AI can analyse extensive transaction volumes to quickly identify potential fraud and risks, thereby safeguarding assets and financial integrity (Karangara, 2023). Furthermore, Dwivedi et al., (2023) discuss the potential of making predictions and being an analytical tool that would enhance efficiency and productivity. Also, there is previous research that has quantified the actual value generative AI can add to businesses. Brynjolfsson, Li, and Raymond (2023) who studied the adoption of generative AI tools that provide conversational guidance for customer support agents found that access to the tool increased productivity by 14% on average.

Generative AI also facilitates the rapid development of financial products, enabling banks to swiftly respond to market needs with tailored solutions (Kalia, 2023). Kalia (2023) emphasises generative AI's role in innovation, supporting Karangara's (2023) findings on operational enhancement and extending into product development, highlighting the technology's broad applicability.

2.4.2 Challenges and Considerations

Even though generative AI have transformative power there are numerous challenges and limitations associated with it. There are several authors that have discussed important challenges and considerations for organisations adopting generative AI and these can be divided into ethical, technological, regulations and policies, and organisational.

Ethical

Nah et al. (2013) lists concerns such as bias, over-reliance, and privacy and security within the ethical category. Bias means that outputs might unfairly lean towards or against certain groups, a problem usually rooted in the biases of its training data. This includes exclusionary biases from unrepresentative data or monolingual biases when the data is overwhelmingly in one language. Generative AI should undergo testing and evaluation by varied users and experts, because enhancing its transparency and explainability can aid in spotting biases for necessary corrections (Nah et al., 2023). Similarly, Dwivedi et al. (2023) point to the issues regarding bias in generative AI applications and underpin the necessity for governance and control of data input and output to eliminate bias.

Moreover, generative AI's efficiency could foster an over-reliance among users, who might accept its answers without being critical. This contrasts with search engines that prompt users to evaluate multiple sources. Such dependency may destroy critical thinking, creativity, and problem-solving skills (Nah et al., 2023).

Data privacy is also a paramount ethical challenge, as integrating generative AI necessitates handling sensitive customer data, requiring adherence to stringent regulatory standards (Karangara, 2023). For generative AI like Chat-GPT this can mean unwanted exposure and unauthorised access for its users and to whom the data concerns. The use of extensive

personal data in training generative AI therefore heightens privacy risks, and its widespread adoption increases the chance of personal information being inadvertently or intentionally leaked (Nah et al., 2023).

Technological

Generative AI confronts a series of technological challenges including hallucination where AI generates misleading content, and the quality of training data, which is crucial for accurate outputs (Alkaissi & McFarlane, 2023). Poor or biased data can result in flawed AI decisions (Nah et al., 2023). Another major issue is the lack of explainability in AI models, making it hard for users to trust or understand the AI's workings. Distinguishing between real and AIgenerated content is becoming increasingly difficult, raising concerns about authenticity in digital content (Nah et al., 2023). Dwivedi et al. (2023) also pinpoint that the quality of generative AI models depends on the quality of training data since many concerns related to bias can be tracked to the data quality. Furthermore, for generative AI models, there is little to no transparency to the reasoning of how the model arrives at the result (Dwivedi et al., 2023), resonating with Chui et al. (2023) statement regarding the increased difficulty for users to interpret and understand the outputs. Moreover, Chen et al. (2021) underscores the necessity of data cleansing for the training datasets to improve data quality but that it is overwhelmingly expensive given the massive amount of data.

Additionally, integrating advanced generative AI with legacy banking systems presents significant hurdles. Agrawal (2023) mentioned one consideration important for technology challenges which was that compatibility of generative AI with existing organisational systems is paramount. Integration of generative AI can in many cases demand extensive modernisation of IT infrastructures, substantial investment, and strategic foresight (Karangara, 2023). The workforce must also evolve, with a pressing need for skills in AI and data science to efficiently implement and manage generative AI solutions (Karangara, 2023).

A seamless integration can reduce friction and accelerate adoption, by aligning new technologies with current operational workflows and existing technological infrastructure (Agrawal 2023).

Regulations and Policies

Chui et al. (2023) discuss the regulations and policy concerns related to generative AI and underscore copyright and governance issues. Generative AI can produce content that might infringe on copyrights. It's essential for users to ensure its use complies with copyright laws. Regarding governance, generative AI introduces new risks and unintended effects, challenging organisations like corporations, universities, and governments to develop AI governance. Effective governance is vital to ensure AI benefits society, but it's difficult due to AI's complex, unpredictable nature and issues like opaque algorithms that hinder control and accountability (Chui et al., 2023). Similarly, Heintz et al. (2023) highlight the role of regulatory environments in facilitating the adoption of generative AI in the light of regulations and policy challenges. They argue that clear and supportive regulations not only mitigate risks but also empower organisations to innovate confidently with AI technologies.

Organisational

There are many organisational challenges associated with adopting generative AI in businesses. Agrawal (2023) underscore that merely adopting generative AI in a business will not result in preferred outcomes unless widespread adoption and organisational adaptation is made. Furthermore, (Nah et al., 2023) argue that retraining employees and adapting to the environment is important to develop a competitive advantage. Patel and Smith (2023) also lift the necessity of strategic implementation and the creation of a culture oriented towards continuous learning and adaptation. They note that successful generative AI adoption is not just about technology deployment but also about preparing the human workforce through training and development programs. This ongoing investment in human capital ensures that AI technologies are used effectively and evolve in response to changing organisational needs and external pressures. This resonates with what Dwivedi et al., (2023) discussed where they mentioned that the strategic implementation of generative AI and a commitment to continuous learning are crucial for leveraging AI's full potential. The integration of cross-functional teams aids in understanding the widespread impacts of generative AI across various organisational departments (Dwivedi et al., 2023).

Moreover, managing customer expectations forms another critical challenge. While generative AI can significantly enhance service delivery, banks must carefully manage customer expectations concerning the capabilities and limitations of AI (Karangara, 2023). Dwivedi et al. (2023) also note the risk of overdependence on generative AI, highlighting the importance of maintaining a balance between automated services and human oversight to ensure reliability and trust in banking services.

2.5 Literature Framework

The literature framework (see table 2.1) was designed with regards to the main findings from previous research on generative AI. It encompasses the most vital parts of generative AI while being relevant to the purpose of this research. Since we do not aim to investigate any technical aspects of generative AI, the themes that previous research mainly highlights are value creation (Dwivedi et al., 2023; Feuerriegel et al., 2024; Nah et al., 2023) and challenges (Diener, Dvouletý, & Špaček, 2021; Zhu and Jin 2023; Zhu & Jin, 2023). Closely connected and discussed with these themes are the utilisation (Karangara, 2023; Shetty & Nikhitha, 2022; Al Ajlouni & Al-Hakim, 2018) and strategic facilitators (Ghandour, 2021; Lazo & Ebardo, 2023; Rahman et al., 2021) of generative AI, making it logical to combine the four into one framework.

The literature review begins with an overview of AI and its subfields, providing a foundational understanding that leads to the core concept of this research: generative AI. In the second part, generative AI is specifically defined within the context of this study to avoid confusion and misconceptions. Next, the third part examines previous adoption and utilisation of technology by traditional banking institutions, focusing on both value creation and challenges. The fourth part continues this discussion, but centres exclusively on the adoption of generative AI by traditional banks, addressing the associated value creation and challenges. Therefore, the proposed literature framework for generative AI in traditional banking institutions is crucial for comprehensively exploring the main subjects of this research.

Further information on how the literature review was conducted can be find under the subtitle 3.3 Method of Literature Collection.

Table 2.1: Literature Framework

Theme	Description	Reference
	Focus on the utilisation of	
Utilisation	technology, AI and generative AI.	Karangara (2023); Shetty & Nikhitha, 2022); Zhu and Jin (2023); Al Ajlouni & Al-hakim (2018); Nah et al., (2023), Brynjolfsson, Li, & Raymond (2023), Dwivedi et al., (2023)
Value Creation	The value creation that technology, AI, and generative AI can create.	Nah et al. (2023), Dwivedi et al. (2023), Brynjolfsson, Li, and Raymond (2023), Karangara (2023), Kalia (2023), Feuerriegel et al., (2024), Chanias, Myers, & Hess (2019)
Challenges	Exploration of the challenges and limitations associated with the adoption of technology, AI, and generative AI.	Diener, Dvouletý, & Špaček, (2021), Zhu & Jin (2023), Al Ajlouni and Al-Hakim (2018), Chen et al. (2021), Dwivedi et al. (2023), Chui et al. (2023), Nah et al. (2023), Rahman et al. (2021), Karangara (2023), Alkaissi & McFarlane (2023), Agrawal (2023), Heintz et al., (2023), Patel & Smith (2023), Romão et al. (2019), Truby, Brown and Dahdal (2020)
Strategic Facilitators	The strategic facilitators that enable the utilisation and adoption of technology, AI, and generative AI	Ghandour (2021), Lazo & Ebardo (2023), Shetty & Nikhitha, 2022), Zhu & Jin (2023), Al Ajlouni & Al-Hakim (2018), Rahman et al. (2021), Heintz et al. (2023), Patel & Smith (2023), Agrawal (2023)

3 Methodology

In this section, we'll delve into the methodology employed in our study. We'll explain the approach taken to undertake our research and the means through which data were amassed for this paper. Furthermore, we'll elaborate on the criteria utilised in selecting interview participants and our protocol for conducting and scrutinizing the interviews. Finally, we'll address the integrity of our research and the ethical dimensions that were accounted for.

3.1 Research Philosophy

Research philosophy is the foundation of research and has become increasingly important in information systems research due to its contribution to a more reflective and insightful understanding of the research field (Mingers, 2004; Hassan, Mingers & Stahl, 2018). Considering that the focus of this study is to investigate various stakeholders' reactions to the utilisation, value creation, challenges, and strategic facilitators of generative AI in traditional banking institutes, we have chosen to adopt an interpretive research philosophy. Interpretivism, as described by Goldkuhl (2012) emphasises that behaviours and beliefs are intricately influenced by specific social and cultural contexts. We therefore believe that understanding stakeholders' reactions to generative AI in banking through an interpretive lens allows for a deep exploration of the subjective meanings and perspectives they attach to its utilisation. Interpretivism enables us to uncover beyond surface-level descriptions of generative AI and instead uncover the complex set of values, beliefs, and contexts shaping stakeholders' perceptions. By embracing an interpretive methodology, we can discover not only how generative AI is being utilised but also why certain reactions emerge within the environment and operation of banks. This nuanced understanding is crucial for understanding the multifaceted impacts of generative AI on value creation within the industry, as it unveils the subtle nuances that quantitative data alone cannot capture. Moreover, interpretivism enables us to appreciate the diverse ways in which stakeholders navigate the complexities of AI adoption, shedding light on both its potential benefits and potential pitfalls from their subjective viewpoints. In essence, by embracing an interpretive approach, we move beyond mere observation to a deeper comprehension of the dynamic relationship between technology and human perceptions in the traditional banking institutes

This perspective resonates with Patton's (2015) endorsement of qualitative research, which by its very nature adopts a naturalistic approach that enables researchers to comprehensively and inductively grasp the human experiences (Patton, 2015). The choice to adopt interpretivism led us to adopt a qualitative research approach, cantered on semi-structured interviews with relevant stakeholders. The collected data from the interview have been analysed to study the diverse perceptions of individuals on the influence of generative AI in traditional banks. This have helped this study to gain a holistic understanding of the influential power of emerging technology, and generative AI in the context of banking. The emphasis on subjective and shared meanings within the social world underscores the need to extract meaningful insights and knowledge from these interviews. In line with Goldkuhl (2012), the interpretive approach resonates strongly when investigating specific contexts, validating our choice of paradigm for

comprehensively understanding stakeholders' responses to generative AI and its application and impact.

3.2 Methodological Approach

In accordance with the study's interpretive research philosophy, a qualitative approach has been utilised together with semi-structured interviews.

This research has adopted a qualitative methodology to investigate the utilisation, value creation, challenges and strategic facilitators of generative AI in traditional banks. Qualitative research is characterised by its interpretative and naturalistic perspective, which prioritises understanding individuals' experiences and interpretations within their environments. As described by Oates (2006), this approach enhances receptivity to new information among respondents which is an essential feature and perfectly aligns with the research aim of this study. This research gap surrounding the utilisation of generative AI in banking also aligns with Recker's (2013) description that unexplored phenomena benefit from qualitative investigations. The banking sector's encounter with generative AI is a novel subject matter, where theoretical depths and practical nuances are yet to be fully explored. Hence, Oates's (2006) and Recker's (2013) arguments that underscore the necessity of a methodology that is both receptive and adaptable to emerging insights, make qualitative research particularly applicable to our study.

Furthermore, Patton (2015) and Recker (2013) emphasise the importance of capturing the viewpoints of research participants in qualitative research. This is particularly relevant to our study, as it aims to gather insights from various stakeholders in the banking sector about their experiences and perceptions of generative AI. Such a nuanced understanding is vital for evaluating the multifaceted impacts of generative AI, including its benefits and challenges, and how these elements interplay in the real-world banking environment. Furthermore, to enhance our study's spectrum of exploratory knowledge, the qualitative approach is particularly suitable since it offers the possibility of gathering information from a diverse range of perspectives (Patton, 2015). Recker (2013) also points out that qualitative methods excel in exploratory research compared to quantitative approaches. They are adept at revealing complex, multifaceted, and hidden phenomena. In the context of this study, it means that a qualitative approach can discover the subtle and complex ways in which generative AI is being utilised, its challenges, and how it's influencing banking practices for value creation. This depth of exploration is crucial for a comprehensive understanding of our subject, which a quantitative approach might not fully capture due to its structured and numerical nature. In conclusion, the qualitative research approach is highly appropriate for this study since it seamlessly aligns with our objective to explore this emerging field in depth, while allowing for a rich and multi-perspective understanding of the phenomena.

3.3 Method of Literature Collection

In line with the suggestions by Recker (2021), we started the process of this research and especially when conducting the literature review, by reading a vast number of papers to better formulate a critical understanding of the field's existing knowledge. When searching through relevant literature we accessed different scholarly databases such as Google Scholar, Lund

University Library's website, ResearchGate and JSTOR. We selected "Information systems" as our subject of interest but have also used articles and papers from other disciplines when relevant and complimentary to our research, due to the limited research on novel subject. To refine our search, we have used keywords and combinations of keywords such as "Artificial Intelligence", "Generative AI", "Banks", "Banking institutes", "Challenges", "Opportunities", "Value", "Factors", "Technology", "Adoption", "Utilisation", "Business", and "Strategy". We used the Boolean operators (AND, OR, NOT) to combine these keywords.

To ensure the credibility and relevance of the sources utilised in our research, we used a strict selection process. Our search was limited to peer-reviewed research articles available in reputable academic journals and conferences written in English. Additionally, we prioritised recent articles, restricting our selection to sources published within the last 4 years with a few exceptions. To validate the suitability of each source, we thoroughly reviewed their abstracts, conclusions, and when necessary, the entire article while asking ourselves how it relates to other articles or practices? and what's the readings core contribution? as suggested by Recker (2021). By doing so we could more easily evaluate if a reading could be included in our research or not. Furthermore, we searched for credible references through sources we had already used. This rigorous search methodology enabled us to pinpoint a diverse range of high-quality sources, thus establishing a robust foundation for our study.

3.4 Method of Data Collections

3.4.1 Semi-Structured Interviews

As previously mentioned, this thesis has conducted interviews as a method for collecting qualitative data. This method allowed this research to derive information from people who have great knowledge, insights, experience, or understanding of generative AI in traditional banking institutes. Furthermore, interviews can be exploratory, explanatory, or descriptive. For this study, we chose to adopt an exploratory approach since it offered us the best possibility to dissect and uncover the complex and multifaceted phenomena that are utilisation, value creation, challenges and strategic facilitators of generative AI in banking. Furthermore, for this study, we have conducted semi-structured interviews since they combine both the strengths and minimise the weaknesses of the structured and unstructured formats (Recker, 2021). The semi-structured interview format allowed us the possibility to follow a flexible protocol where follow-up questions were adjusted and dependent on the participants' answers. By following this format, we were able to explore a wide range of topics related to generative AI's utilisation, value creation, challenges, and strategic facilitators in traditional banks without restricting the respondents' responses.

Even though semi-structured interviews are open-ended, Bryman (2016) also argues that they to a large extent bring standardisation. We therefore used structured topics outlined in the interview guide (see Appendix 1) to help us ensure all interviews followed the same format. This means that even though the participants might come from different backgrounds and have different perspectives, they all talked about the same topics and answered similar questions. This simplified the process of analysing and comparing the data derived from the interviews as patterns and sub-themes were less challenging to identify (Bryman, 2016).

Furthermore, there was limitations that we had to consider while conducting the interviews of this research. Patton (2015) highlight the importance of understanding a respondent's language and use of words since their specific background might lead to them using different words when describing the same thing. We, therefore, made sure to always be aware of every respondent's background and ask them to clarify certain aspects or concepts if we did not understand them. For example, one respondent at a bank might use a different term to describe a concept than another respondent at a different bank.
Moreover, Patton (2015) describe guidelines for how interviewers should act during an interview. He underscores the importance of providing feedback to the respondent throughout the interviews. The feedback can be shown both verbally and non-verbally in the form of nodding, smiling, or using affirming words. This type of feedback was therefore given by us to the respondents during the interviews, to encourage them to go into greater depth in the interview.

3.4.2 Interview Guide

To maintain consistency throughout the semi-structured interviews, we created an interview guide (see Appendix 1) that outline the questions we used to conduct our interviews. The guide was created to ensure that all themes presented in the literature framework was discussed with the respondents. Each question covers one or sometimes several themes while providing room for additional questions that may arise during the conversation. Even though the interview guide outlined pre-determined questions with potential follow-up questions, all were not always included in every interview. Depending on what the respondent answered some questions were either included or excluded to minimise the risk of repetition. However, if some answers had been unclear or not described to the extent that we were satisfied with, we could reformulate a question or ask the respondent to further elaborate.

Below is a table (Table 3.1) that provide an overview of how each question is connected to a theme from the literature framework. Each number represents a question that is provided in the appendix (see Appendix 1). It is important to note that neither Table 3.1 nor the interview guide express the exact order of which the questions were asked, but rather to show alignment between them and the themes.

Table 3.1: Table of Themes and Question Numbers

Theme	Question Number
Utilisation	3, 4, 4.1, 8.1
Value Creation	5, 6, 6.1, 7, 7.1, 8
Challenges	9, 10
Strategic Facilitators	3.1, 4.2, 4.3, 9.1

3.4.3 Selection of Organisations

Clarifying the scope of our study on banking institutions is essential, given its central role of this research. Our research focuses exclusively on traditional banks, distinct from FinTech banks. The latter, emerging as competitors due to digital advancements, operate under different regulatory, operational, and strategic frameworks compared to their traditional counterparts (Megha & NikHitha, 2022; Onorato, Pampurini & Quaranta, 2024). According to the Swedish Bankers Association (2023), the number of banks in Sweden increased to 123 in 2022, driven largely by technological innovations that facilitated the entry of new financial service providers (FinTech), intensifying competition within the banking sector. These institutions are categorised into four types: commercial banks, foreign banks, savings banks, and cooperative banks (Swedish Bankers Association, 2023). This paper will specifically examine the largest commercial banks operating in Sweden and northern Europe, aligning with our focus on traditional banking institutes. Our selection of organisation is therefore based on this, and a complete table can be viewed below (Table 3.2).

Table 3.2: Table of Organisations

Organisation	Description
Bank 1	A Scandinavian bank and financial group with its main operations throughout northern Europe.
Bank 2	A Scandinavian bank and financial group with its main operations throughout the Nordic countries.
Bank 3	A Scandinavian bank and financial group with its main operations throughout northern Europe.
Bank 4	A Scandinavian bank and financial group with its main operations throughout the Nordic and Baltic countries.
Consultancy X	An American software company that offers software products and consultancy services in aiding banks and organisations in several sectors.

3.4.4 Selection of Respondents

Our research purpose and problem guided the selection of our relevant respondents. We contacted individuals employed by traditional banks or those working to support them. Additionally, we focused on individuals within these organisations who possess knowledge of generative AI and can answer related questions. We aimed for a diverse range of roles among respondents, all of whom have knowledge and experience with generative AI use within their organisations. This approach ensured we captured a variety of insights and perspectives on

this topic. We strategically targeted mainly senior management and individuals in leadership roles within these organisations for our interviews. The respondent's in-depth industry knowledge and understanding of their organisations' utilisation value creation, challenges and strategic facilitators of generative AI was an important factor in our selection process.   We conducted a total of eight interviews with eight distinct respondents who will remain anonymous to protect their privacy. Recruitment was conducted via email or LinkedIn. We provided a brief introduction of ourselves, our research topic, and our interest in their insights. We then inquired about their willingness to participate, explained the interview format, and addressed our privacy and ethical considerations. A table summarising the respondents interviewed for this research is provided below (Table 3.3).

Table 3.3: Table of Respondents

Respondent	Role	Organisation	Interview Length	Date
Respondent 1	Data Scientist	Bank 1	31:20	18-04-24
Respondent 2	Head of Communications & Marketing	Bank 2	32:16	19-04-24
Respondent 3	Group Chief Data & Analytics Officer	Bank 1	37:50	25-04-24
Respondent 4	Chief Digital Officer	Bank 3	48:22	30-04-24
Respondent 5	Tech Lead & Agile Product Owner	Bank 4	27:05	02-05-24
Respondent 6	Principle Solution Consultant	Consultancy X	47:32	02-05-24
Respondent 7	Group Security Chief Technology Officer	Bank 1	31:25	03-05-24
Respondent 8	Chief Data Officer	Bank 1	30:03	06-04-24

3.5 Method of Data Analysis

In qualitative research, data collection and data analysis often deeply depend on each other, as each process influences the other (Recker, 2013). Recker (2013) points out that a major challenge in analysing qualitative data is dealing with all the collected data without initially knowing which parts will be most valuable. Typically, the analysis involves trimming down the raw data to focus on the key elements, spotting patterns in these important pieces, and then organising the data to clearly highlight the main insights (Patton, 2015). This is particularly important since we have conducted semi-structured interviews. The following section covers the methods used for recording and transcribing interviews, along with the approach for analysing the collected data from the transcripts.

3.5.1 Recording and Transcription

As mentioned earlier in the data collection chapter, the interviews for this study were conducted through the communication platforms Microsoft Teams and Google Meet, based on the participant's availability and preference. To ensure the accuracy of the interview content, each session was recorded with plans to transcribe them later for analysis. We used the iPhone's "Voice Memos" app to record only the voice of the participant. Additionally, as detailed in the ethics consideration chapter, we made sure to obtain consent from all interviewees and informed them of their rights before any recordings took place. After the interviews were completed, the audio files were converted into written text to aid in further analysis and interpretation. All the interviews in this study were transcribed using a Python script and the Whisper tool.

3.5.2 Coding

To delve deeper into the methods used for data analysis in this study, coding was identified as the most appropriate method. It involves organising raw data into distinct categories and helps manage the vast amount of data from the interviews by filtering out irrelevant information, thereby minimising the risk of losing important data (Recker, 2021). This is particularly important for our study since the size of our research and the number of interviews conducted resulted in large quantity of data.

Coding methodologies in research vary widely and can generally be categorised into conceptdriven and data-driven approaches, often referred to as deductive and inductive coding, respectively (Gibbs, 2007; Fereday & Muir-Cochrane, 2006). The deductive approach starts with a predefined set of codes or categories derived from various sources such as existing literature, previous studies, or the researcher's own hypotheses (Gibbs, 2007; Fereday & Muir-Cochrane, 2006). In contrast, inductive coding does not begin with predetermined codes, allowing patterns to emerge organically from the data (Gibbs, 2007; Fereday & MuirCochrane, 2006).

Fereday and Muir-Cochrane (2006) describe a third, hybrid approach that integrates both deductive and inductive methods. This approach begins with a framework of deductively derived codes and incorporates an inductive phase to generate new codes from the data,

especially within specific key categories. They emphasise the rigidity and robustness of this method. Gibbs (2007) similarly notes that the two coding strategies are not mutually exclusive and most researchers alternate between concept-driven and data-driven coding throughout their analysis. This dynamic process facilitates the integration of established frameworks with fresh insight.

In our study, we utilised a hybrid coding strategy that integrated both deductive and inductive approaches, which was particularly suitable for the novel field of our research. Initially, data was organised through deductive coding according to our predefined themes; utilisation, value creation, challenges, and strategic facilitators, identified during our literature review and closely tied to our research questions. Each theme was clearly marked using colour coding for clarity and systematic analysis. You can see an example of this process in Figure 3.1, where a text section from an interview with Respondent 3 is paired with its initial coding, highlighting the main themes.

Value Creation | **Strategic Facilitators** | **Challenges**
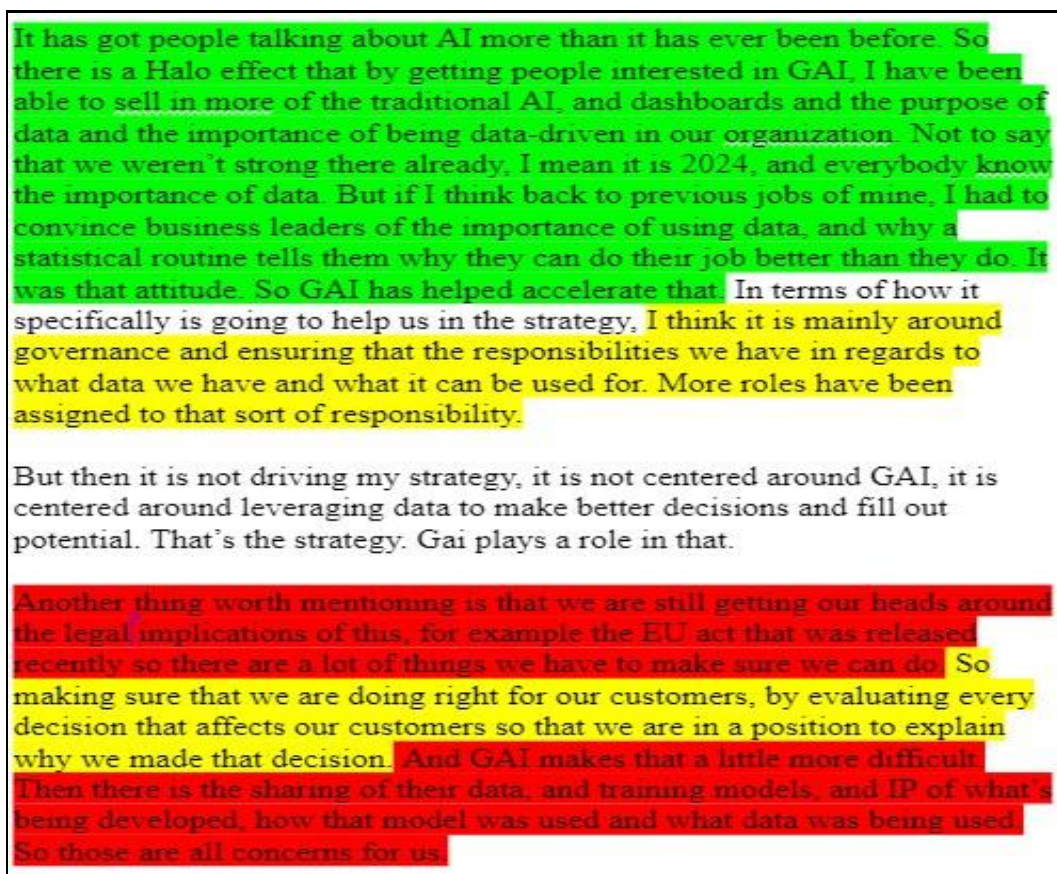
Figure 3.1: Initial Coding Example of Text Segment from Interview with Respondent 3

Following this, the inductive phase utilised an open-coding process that allowed us to go beyond these established themes to discover emergent patterns and deeper insights. This provided the flexibility and depth necessary to refine our analysis and uncover insights that a purely deductive method might miss. This method proved essential in building a robust theoretical base while also allowing for the identification of new, nuanced insights. Based on

the insights gathered in our literature review and the new insights from the discussions held during the interviews, we identified thirteen sub-themes. These sub-themes were created to highlight the in-depth subjects that were expressed by the respondents. In Figure 3.2 an example is showcased to visualise how the sub-themes are differentiated from one another.
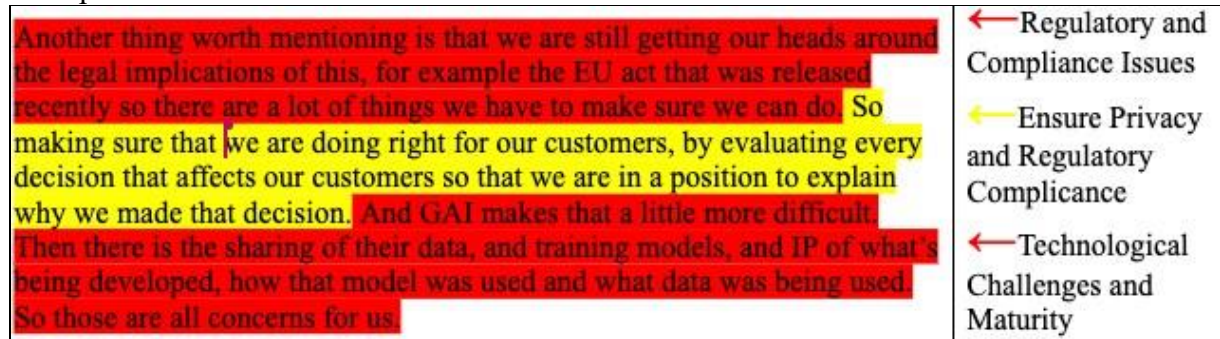
Figure 3.2: Sub-Themes from the Main Categories "Challenges" and "Strategic Facilitators"

Consequently, we developed sub-codes, each serving as a keyword associated with its corresponding sub-theme and overarching theme. This process enhanced the comprehensiveness and depth of our findings, which are elaborately presented in Table 3.4, detailing the interconnections between main themes, colour, sub-themes, and sub-codes.

Table 3.4: Theme, Colour, Sub-Themes, Sub-Codes

Theme	Colour	Sub-Themes	Sub-Codes
Utilisation		Operational Utilisation	Internal, External, Administration, Process, Repetitive Tasks,
		Technological Integrations and Tools	GitHub Co-Pilot, Microsoft Co-Pilot, Inhouse development, Cloud, Chat-GPT
Value Creation		Business and Operational Impact	Productivity, Automatization, Effectivity, Time-efficiency,
		Increased Interest and Demand	Catalyst, Hype, Demand,

		Customer and Market Impact	Customers, Business Need, External
Challenges		Ethical and Privacy Concerns	Data Leakage, Customer Data, Ethical, Privacy
		Integrational and Organisational Challenges	Resistance, Mobility, Employees, Culture
		Regulatory and Compliance Issues	AI Act. GDPR, Compliance, Regulations
		Technological Challenges	Data, Technological Infrastructure, Less Analytical
Strategic Facilitators		Strategic Alliances and Partnerships	External Partners, Consultancy, Tech-Giants
		Investment in AI literacy and Training	Training, Employees, Courses
		Innovative Culture and Top Management Support	Agile, Culture, Bottom-up, Support
		Alignment with Business Value and Objectives	Clear strategy, Clear Business Motives,
		Ensure Privacy and Regulatory Compliance	Data Control, Education, Governance

In Table 3.5, we present a summary of the primary and secondary keys linking to the themes and sub-themes found within the transcripts. The initial letter of each secondary key represents its corresponding theme. This coding procedure facilitated our ability to make distinct sub-themes accurately, while also enabling us to adapt and refine sub-themes as needed during transcription.

Table 3.5: Theme and Sub-Theme Coding Reference

Theme	Primary key	Sub-Theme	Secondary key
Utili sation	U	Operational Utilisation	U-OU

		Technological Integrations and Tools	U-TIT
Value Creation	VC	Business and Operational Impact	VC-BOI
		Increased Interest and Demand	VC-IID
		Customer and Market Impact	VC-CMI
Challenges	C	Ethical and Privacy Concerns	C-EPC
		Technological Challenges and Maturity	C-TC
		Integrational and Organisational Challenges	C-IOC
		Regulatory and Compliance Issues	C-RCI
	SF	Strategic Alliances and Partnerships	SF-SAP
		Investment in AI literacy and Training	SF-IAIT
		Innovative Culture and Management Support	SF-ICMS
Strategic Facilitators		Alignment with Business Value and Objectives	SF-ABVO
		Ensure Privacy and Regulatory Compliance	SF-EPRC

3.6 Reliability and Validity

For this research to uphold scientific quality, it included the aspects of reliability, validity, and generalisability. Reliability, as described by Bhattacharjee (2012), is about making sure the data collected in social science research is consistent. It has been used to make sure that this research's methods can be repeated and give the same result (Recker, 2021). However, Bhattacharjee (2012) argues that an occurring disadvantage of reliability in qualitative

research is the risk of asking imprecise and ambiguous questions. Unreliability in qualitative studies may also occur when questions are being asked to participants not familiar with the specific topic or phenomena (Bhattacharjee, 2012). To reduce these risks in the study, we have therefore used similar or identical questionnaires for participants who shared similar backgrounds and experiences related to the topic. We also used clear language in the research indicators to avoid confusion among respondents.

In close regard to reliability, validity also played a crucial role in ensuring the scientific quality of this paper (Recker, 2021). It refers to the accuracy of the research's results which means that the results are relevant to the research question (Oates, 2006). Bryman (2016) explains there are two types of validity in the context of qualitative research: internal and external. Internal validity refers to whether there is an alignment between researchers' observations and the developed theoretical constructs or if it is affected by additional factors (Bryman, 2016). As previously stated, this research has analysed and interpreted the transcribed interviews using open coding. This process has therefore documented the study's findings independently and contribute to validating the obtained data.

As for reliability, the aspect of applying validity in qualitative research is also questioned by researchers (Golafshani, 2003). For example, external validity is considered a challenge of qualitative research because it tends to apply case studies and smaller samples and therefore is difficult to generalise (Bryman, 2016). This was of concern to this research since it to some extent aims to provide valuable and generalisable insight regarding generative AI in traditional banking institutes. However, as previously mentioned all aspects of this study; documentation, structure, and analysis have been conducted thoroughly to the degree that its validity can be confirmed. To further solidify the study's validity, we have taken great care when choosing the participants of the interviews to ensure that they can contribute to the purpose and research aim.

3.7 Ethical Considerations

Given that information systems research is rooted in the social sciences, Recker (2021) believes that a fundamental ethical principle dictates that researchers are accountable for obtaining permission and safeguarding the interests of all study participants. It was imperative for us not to misuse the compiled information, and our duty as researchers to uphold the rights, privacy, confidentiality, and anonymity of the study participants (Recker, 2021). The principle of anonymity was therefore highly regarded in this study. This means every participant had the option to remain anonymous to ensure that their data remained confidential, and so their identity could not be linked to the disclosed information. The participants were therefore informed of their voluntary participation and their rights to withdraw from the study before its publication (Recker, 2021). Based on the points Patton (2015) argues should be included in a consent form, each participant was informed of the purpose of the interview, who the information is for and how it would be used, what would be asked, how their responses would be handled, and what risks or benefits might be involved for the participant. This ethical approach is relevant to this research since most participants was interviewed regarding their personal experiences working for banks and other related organisations. The information they disclosed may therefore be personally sensitive or to their respective organisations.

Ethical considerations also regard the analysis of research data. Recker (2021) argues there is an ethical obligation to make honest and complete reporting of how the collected data is

analysed and reported. Even though some interviews resulted in more desired findings than others, they still required full disclosure (Recker, 2021). Furthermore, additional unethical behaviours associated with data analysis involved assessing hypotheses using partial, incomplete, or inappropriate data analysis (Recker, 2021). In this research, we therefore did not fabricate, alternate, or delete any of the data to attain more favourable outcomes.

4 Empirical Findings

In this chapter the empirical findings from the conducted interviews are presented. The findings will represent the opinions and arguments of all respondents that were interviewed. Furthermore, the findings will be presented according to the themes and sub-themes from table 3.4.

4.1 Utilisation

4.1.1 Operational Utilisation

Based on interviews conducted with various respondents, traditional banks are predominantly engaging with generative AI in a preliminary, exploratory manner. Respondent 3 underscores this phase by stating, "*Yeah, we started testing it. We are not in the roll-out phase yet*" (R3:10). Echoing this sentiment, Respondent 4 highlights that many traditional banks are currently in the preparation stages of their generative AI strategies, emphasizing, "*That is probably the key to driving both this exploratory phase we are in right now but of course also to drive adoption in the future*" (R4: 44). Furthermore, Respondent 1 acknowledges the novelty of the technology for their operations, noting, "*It's all so new; we haven't tested everything yet. We started exploring this about a year ago.*" (R1:16) Collectively, these responses suggest that traditional banks are primarily utilizing generative AI in a preparatory and testing phase, rather than integrating it fully across all operational areas.

Throughout the interviews, several respondents emphasized the predominance of internal applications of generative AI, underscoring its strategic deployment within their organizations. Reflecting on its applications, Respondent 1 indicated, "*This is all internal. I actually don't know if we use any Chatbot, for example, with customers. But internally, we have initiated quite a lot*" (R1:16). Respondent 3 mentioned specifically using generative AI for enhancing internal documentation processes: "*No, it's only for internal use in our documentation*" (R3:33). Meanwhile, Respondent 4 discussed the internal and confidential use of data, adding, "*So I am very convinced that we will keep it internal and must be very sure that it works effectively*" (R4:51). Respondent 6 further highlighted that the primary focus of generative AI within banks is directed towards optimizing internal processes. Respondent 6 stated, "*I would say that they're doing it more internally*" (R6:39). Respondent 5 also highlights this and describes a potential reason behind it:

> "*Primarily the focus is all within Generative AI towards internal purposes. The reason for this again is security and control in this phase. We see, namely, that we do not want to take it out on a larger scale towards the customer*" (R5:6).

Respondents provided insights into specific internal use cases of generative AI within their respective organizations. Document processing and text generation are commonly highlighted functions. For instance, Respondent 1 mentioned:

"Since I started, we've at least made some new advancements by having generative AI check texts instead of having another person double-check them to ensure accuracy. It suggests rephrasing and can even summarize long documents into a few concise points" (R1:10).

This application proves especially beneficial for those handling extensive texts and reports which also Respondent 2 emphasises "*There we use ChatGPT to shorten extremely long reports and get them summarized so that we can distribute them quickly*" (R2:16). Respondent 3 points out cautious use in code reviews and documentation, similar to Respondent 8:

"*I mean our development department already uses GenAI to automatically generate code. To a large extent. And people have been doing this for quite a while. And many like me use it to give suggestions on writing memos and texts and emails*" (R8:16).

Respondent 4 elaborates on its utility in creating written content such as invitations for customer events: "*It's a track where we look at both the programming and content creation aspects. For example, generating text for invitations to customer events*" (R4:26). Respondent 6 illustrates its conventional use in banking for tasks such as developing websites and mobile apps and conducting mass communications for marketing purposes:

"*So classically for banks, for example, they might be using our software to build and deliver their websites and their mobile apps. They might be using it so they can do mass communication, like marketing communication to customers*" (R6:6).

This showcases that generative AI today has several use-cases for internal task, specifically in documentation, content generation and programming.

While these applications are typical in traditional banking, other respondents detailed additional innovative use-cases within their operations. Respondent 7 discussed the use of generative AI in security testing, stating, "When we perform various types of security tests, we can generate a multitude of use cases. These types of chatbots are phenomenal for creating detailed decision reports, for example" (R7:14). Many respondents also highlighted generative AI as a springboard for creative solutions. Respondent 1 noted its use in image generation: *"Besides that, when we present things to clients, we cannot use copyrighted images. So, we generate our own images that are not copyrighted"* (R1:41). Respondent 6 also mentioned that generative AI is used in creating images and videos in their tools that they integrate at traditional banks. Interestingly, Respondent 3 discussed the advancement of image and sound generation and discussed its potential future use but at the same time think its application in banks is limited "*So much has happened in just a year, and I'm amazed by that. And at this time, I don't think that has applications for banks, I could be wrong*" (R3:27). Respondent 2 described how generative AI assists in feedback collection and campaign optimization, emphasizing its role as a creative assistant:

"*But then we asked ChatGPT, 'Can you come up with an idea here?' It then generates a few ideas, and we decide which ones to develop further. 'Can you do more of this, and what would it look like? For example, can you suggest collaborations with other companies that have a similar profile to ours?' It then brought up various options*" (R2:16).

Additionally, Respondent 3 explained the use of generative AI chatbots for generating structured feedback: "*Users enter the chatbots, ask a question, and it generates a wellstructured answer based on our internal documentation."* (R3:10). They further explain that this technology has been adopted quickly, and there's a huge desire within their team to expand its use (R3:10).

4.1.2 Technological Integrations and Tools

From the respondents it becomes evident that the technology tools integrated are both internal and external nature and that they use multiple different models and applications. Respondent 8 mentioned this and again mentioned the exploration phase: *"So we have a number of gen AI models. Somewhere between exploration and production then"* (R8:6).

Several respondents highlighted the development and utilisation of in-house generative AI tools tailored to specific banking needs. Respondent 1 discusses an internally adapted model for handling sensitive data: *"Exactly, like this in-house report model. It is adapted so that the data from the reports that are read stay within the bank."* (R1:35). Furthermore Respondent 1 also mention the use of in-house developed generative AI that can be used for less technical people who don't know how to code, where they can together with the AI generate code. Respondent 2 further emphasizes this and mentioned that: *"Now we are building our own AIgenerated libraries with the help of mid-journey instead* "(R2:22). Respondent 5 mentions that they develop both in-house developed models and built customised application upon GPT-4 models:

> *"Then we have built more on GPT-4 models when we customised things. Also tested a bit of Open Source. So it's a bit mixed when we test cases. And there are advantages with Open AI, but there are also disadvantages with it. The same with Open Source. So we actually test both for different cases. And we will probably run both parts in the future also partly to edge ourselves a bit in licensing issues and so on"* (R5:18).

The integration of external generative AI tools is also prominent, with several banks leveraging partnerships with major technology providers. Respondent 2 discusses the utilisation of Microsoft's AI tools as part of a corporate agreement:

> *"Chat-GPT, a special version that you get when you have a Microsoft Enterprise Agreement. Then you get, so you can build your own so we have Bank 2 chat implemented and we have also implemented something called Microsoft Co-Pilot."* (R2:6).

These tools from Microsoft provide a foundation for enhancing various communication and operational processes within the bank. Respondent 2 further emphasises the importance of integrating it to everyone's computer which made it easier to use for people working in banks. Respondent 6 also emphasises an unsanctioned yet practical use of external tools:

> *"There's a lot of stuff that banks don't know is happening within their own banks. So, people are using ChatGPT to help them generate copy and emails and all sorts of things at the moment, but it's not necessarily sanctioned by the bank, but people are doing it anyway* "(R6:39).

Furthermore, other Microsoft products are being brought up by many. Respondent 3 mentioned that they use Microsoft 365 Co-pilot:

> "*So we have a partnership with Microsoft right now and we're doing a Co-pilot so I think there are around 300 employees using it. This is effectively the Microsoft 365 Copilot module. So people are playing with it by building their spreadsheets, building their PowerPoint presentations, integrating it into Outlook, trailing what its potential etc*" (R3:12).

Also, Respondent 2 mentioned that they use Microsoft Co-pilot in helping them managing their email, transcribing and build presentation. Moreover, Respondent 4 mentions that Azure Bing Chat Enterprise has been approved for both internal and open data R4:24).

4.2 Value Creation

4.2.1 Business and Operational Impact

When working with generative AI, respondents consistently emphasise the value of time efficiency and productivity. Respondent 3 believe that their employees can work more efficient since generative AI "*...becomes another toolbox for them to do their job quicker and better*" (R3:22). Both Respondent 1 (R1:18) and Respondent 2 (R2:36) assert that utilising generative AI tools significantly saves time in their daily workflows, enabling them to allocate more time and expertise to more challenging tasks. This sentiment is agreed by Respondent 5 (R5:16) and Respondent 7 (R7:6), who believe that leveraging generative AI can streamline repetitive tasks, thereby enhancing the automation of various business operations. Compliance is highlighted by Respondent 7 as an area where significant automation has been achieved:

> "*Take for example a super conservative area like Compliance, with lots of texts and these chatbots are good at that. And then we can ask questions. It's completely magical how much time we save. And then you have to compare if the answer is Compliancewise correct. And there we have built our own model. It's fantastically good such an example.*" (R7:24).

Like compliance, Respondent 5 believes that there is significant potential for automating internal administration processes, such as writing meeting notes, with the assistance of a CoPilot (R5:26). In line with this viewpoint, Respondent 3 believe that generative AI tools can replace much of the activities previously conducted by an assistant, such as manually booking meetings and transcribing, them afterwards (R3:22). This perspective is further reinforced by Respondent 6, advocating for the utilization of Generative AI as an assistant:

> "*So rather than you having to know exactly what do I need to do in order to create an audience or a segment, you could use a prompt instead and it would either bring you to enablement material or maybe it creates the first cut of the audience for you and then you could go into it and tweak it a little bit more*" (R6:12).

When asked about the potential time savings, respondents' opinions vary. Respondent 2 anticipates that employees in communications and marketing roles could save 15% of their time through generative AI usage, while their colleagues estimate that 30% of software developers' time could be saved by utilising generative AI tools for code generation. Other respondents contend that quantifying exact time savings is challenging and highly dependent on the specific use case. As Respondent 5 puts it: "*It depends a bit on the process you have right now and how complex tasks you have. Difficult to say a number outright.*" (R5:16).

Moreover, a significant aspect of a bank's operations entails collaboration with numerous consultancy agencies, including marketing firms. These marketing firms carries substantial costs for the bank's communications department, as noted by Respondent 2:

> "*There are three cost drivers in a department, which is a marketing communication department. One of them is the entire agency fee. It's huge. All the agencies that we are connected to. You don't just have one, we might have 4-5.*" (R2:22).

Nonetheless, Respondent 2 highlights that generative AI can effectively perform many tasks handled by these agencies, doing so more swiftly and in a manner better suited to the digital realm:

> "*Generative AI can work faster than an agency. If you work with an advertising agency today, it takes six weeks from when you meet them until you have something. But that doesn't work in a digital environment because the momentum has already disappeared*" (R2:16).

In contrast to reducing costs and minimising expenses from expensive business operations, Respondent 5 explains that bank 4 has chosen to focus on how to increase revenue:

> "*We also looked at the first case we were going to run that, often you look at how can we reduce costs. But in the first case, we looked at how can we increase revenue. And I think that's important in this too*" (R5:10).

Respondent 5 also highlight that Bank 4 have started to see what areas generative AI can help increase revenue instead of cutting costs, as would be the most common practice (R5:10).

4.2.2   Increased Interest and Demand

Throughout the interviews, most respondents expressed an increased demand and interest for working with generative AI among the employees at their respective bank. Respondents note that there's a shift in attitude, with generative AI sparking more conversations about AI in general (R3:10). It's seen as a catalyst for promoting the importance of data-driven decisionmaking within organisations (R3:10). The enthusiasm for generative AI is evident, as seen in one of Bank 1s team's presentation generating excitement and engagement among employees: "*When they presented what was going on with Co-pilot, and how it was working… In the chat it was non-stop, everybody wanted to participate.*" (R3:16).

Furthermore, generative AI serves as a trigger for discussions about process improvement and access to the right data (R4:28). Respondent 5 emphasises the ease of understanding and using generative AI tools like Chat-GPT, making it accessible even to those unfamiliar with

the technology (R5:24). This increased interest in generative AI has also led to a broader demand for new technologies (R5:32). However, there's recognition of the need and difficulties to integrate new technologies with existing systems in traditional banks which carries complications because of the vast spread of their technology landscape (R5:32).

4.2.3 Customer and Market

In exploring the impact of generative AI on customer value creation within traditional banks, most respondents indicate a there is a lack of direct services targeting customers. Respondent 5 explains: "*We don't directly target the customer but instead the internal staff*" (R5:26). Furthermore, Respondent 6 points out a historical trend in banking where the adoption of digital technologies has often led to increased workload for customers, despite promises of improved experiences (R6:41). Respondent 6 therefore question whether the introduction of generative AI will increase the customer value: "*they're not really thinking about whether it actually makes anything that much better for the customer* "(R6:41).

The stand of not seeing customer value for traditional banks is an opinion Respondent 2 has also been faced with. When questioned of the importance of using generative AI in Bank 2s marketing campaigns, Respondent 2 explained that the only thing that matters is the message and not who created it: "*They're all edited, photoshopped, and filtered. But then we measured …It's about the message instead, so there's no difference between a generative AI-generated image and another*". (R2:44).

Furthermore, Respondent 5 express generative AI's potential in sales related cases and in support channels (R5:26). However, these areas are today very limited in its utilisation.

4.3 Challenges

4.3.1 Ethical and Privacy Concerns

Throughout all interviews the respondents emphasise ethical and privacy concerns surrounding the use of generative AI tools in traditional banks. Respondent 1 and Respondent 3 express aligned concerns regarding ethics and the need for privacy measures within traditional banks. Both emphasise the importance of creating private channels to prevent accidental data disclosure and highlight the risks associated with entrusting sensitive information to generative AI models (R1:31, R3:27, R3:29). Respondent 3 explains: "*… So that we don't accidentally give any data to other companies… it can also be incorrect information and that we only trust what is generated*``. The recognition of these concerns has stopped Bank 1 from integrating any sensitive customer data into models over which they lack complete control regarding storage and utilisation (R3:29). Furthermore, Respondent 4 also raises concerns about losing customer data and that using generative AI for external purposes carries too big of a risk for it to be deployed: "*I am quite sceptical. The risk of something going wrong is too great*" (R4:42).

Additionally, Respondent 5 highlights the risk of not integrating generative AI tools throughout their organisation:

> *"We have seen that teams that don't have it might find their own way a little. They manage to find ways like finding Co-pilot integrated in Bing and here you can upload a lot of stuff. And then you start using it instead even though you're not supposed to"* (R5:36).

These scenarios have compelled Respondent 5 and their team to ensure that unapproved employees withhold from using generative AI in their work, as there is a risk that they may inadvertently upload sensitive information about either the bank or its customers (R5:36). Respondent 6 also believes that the utilisation of generative AI in traditional banks should not lead to employees freely using the tools. Instead, it must be monitored and clear limitations to what data can be used in the models (R6:29). Respondent 6 explains:

> *"there's been some issues already about generative AI in, not just in banks, but you couldn't just let this stuff go…Somebody needs to be monitoring it. There has to be limitations on what data you give to it… if you're using the free tools, you'd be very limited in what you're able to do"* (R6:29).

Given this, the respondents all show awareness of the challenges they face regarding ethics and privacy for their respective banks.

4.3.2 Technological Challenges and Maturity

Based on the interviews, several respondents' express concerns about the challenges of generative AI in producing analytical texts and its inability to connect to live data for predictive analysis (R1:24, R3:10, R8:10). Respondent 1 explains that texts generated by AI often lack the analytical depth of those written by human colleagues, as the models are not usually trained on live data, limiting their ability to provide up-to-date insights (R1:24). This sentiment is supported by Respondent 3, who emphasises the challenges in sharing data and training models effectively, raising concerns about the reliability and accuracy of AIgenerated content (R3:10). The reliability of the results generated by the generative AI is further explained by Respondent 8: *"You must be able to show the result…and explain the result. And you have problems with that today in other forms…but also in Gen-AI models. With them hallucinating"* (R8:10). Respondent 4 adds to this by highlighting the misconception surrounding the capabilities of generative AI, noting that while it may seem like a solution to certain problems, its integration into corporate environments is complex and often underestimated (R4:18).

Moreover, concerns are raised about the overconfidence in generative AI's capabilities and the challenges associated with scaling up its usage within traditional banks. Respondent 5 underscores the difficulties in formalising responsibilities and ensuring quality control when implementing generative AI models, emphasising the need for clarity and structure in the deployment process (R5:20). Respondent 6 further elaborates on the fundamental challenges related to data quality and understanding within the context of generative AI, stressing the importance of clear demonstration and explanation of AI generated results (R6:12).

The clarity and structure are further weakened by the fact that data is often spread out across different parts of the banks data storage systems. Respondents 6 believes this is a problem

that generative AI have trouble dealing with since it can't understand what to with it: *"If you don't have the labelling at the data level, then there's no possible way the gen AI can understand what it's meant to do with anything"* (R6:18). Respondent 8 elaborates on this by saying that banks themselves must come up with a solution to the problem of matching and mapping data correctly throughout their organizations: "*... it can be 15 different versions of Excel sheets, and the columns are named differently in each one, and it's an extreme challenge ... to key the data together in a good way…*" (R8:28). However, unlike Respondent 6, Respondent 8 believes that Generative AI can assist banks in improving their data organisation (R8:28).

4.3.3 Integrational and Organisational Challenges

The perspectives shared by the respondents outline several common challenges and divergent viewpoints within the banking sector, particularly concerning their organisational structures and adaptation of generative AI. Respondent 1 explains that bank 1 has a decentralised nature of departments which underscore their challenges of achieving uniformity in their operations across diverse organisational units (R1:45). Respondent 1 explains that this creates a problem:

> *"I work in one way… in another department, they work in another way. I don't know what models they use, so if I want to use a model that they already have …I don't know about [it]"*

This problem is according to Respondent 1 inevitable since Bank 1 is old and has over 15 000 employees (R1:47), and Respondent 1 therefore emphasise the importance of Bank 1 improving their future operations for internal communication (R1:68). This challenge is also highlighted by Respondent 2 who argues that the resistance to change entrenched within the organisational culture, hinders efforts towards standardisation and collaboration for Bank 2 (R2:24). Furthermore, Respondent 6 believe there is a lot of conservative attitudes among the employees of traditional banks. This makes them slow to adopt to new things or they often adopt new things without properly realising why they are using it (R6:20). Respondent 6 also believe that many people who might view generative AI as a solution to many of their organisational problems which creates a silo problem for the banks (R6:22). This corresponds with Respondent 5 who also feel that a lot of the people often will not see the benefits and what advantage they can gain from working with generative AI if the technology doesn't reach their level of expectation. Respondent 5 explains:

> *"... there are always people who have questions and concerns about it not reaching a level where it can do everything we do. ... there it's a bit about culture. Because let's say it [Generative AI] can do 90% of your tasks and then you can do 10%. Sometimes you are too focused on it being able to do something complete without being able to see the benefits and take advantage of them as well."* (R5:22)

Furthermore, Respondent 3 and Respondent 8 both touched upon the legacy systems prevalent within banks, contributing to a fragmented data environment and impeding organisational agility (R3:42 & R8:22). While Respondent 3 focused on the complexity of navigating historic business processes and data integration, Respondent 8 underscored the sluggishness of organisations compared to technological advancements. Respondent 6 also questions the agility of all traditional banks in Sweden: *"all the banks in Sweden will tell you*

that they started to adopt agile methodology. I'm telling you that it's complete nonsense" (R6:30). Instead, Respondent 6 believe the banks organisational methodology is more like a waterfall where all the directives come from senior management (R6:31). Moreover, the banks are according to Respondent 6 infected by the "Swedish disease" - of conducting pre-studies before integrating new technology (R6:31). This accumulates to low flexibility and when a pre-study is final, a new version of i.e. Chat-GPT is released. Respondent 6 explains: *"... the pre-study is where good ideas go to die in my world"* (R6:31).

In conclusion, the discussions from the interviews highlight the need for banks to address internal complexities, foster innovation, and navigate external pressures to remain competitive in the global financial landscape (R2:24, R6:20, & (R5:22).

4.3.4 Regulatory and Compliance Issues

When discussing what challenges traditional bank face with generative AI - regulatory and compliance issues was always highlighted as a concern that all banks must consider throughout all aspects of their business. The reason for this is partially as Respondent 2 explains: *"... there are rigorous security systems in place because people have their money here. You can't just use anything"* (R2:6). Respondent 4 describes the challenge of handling governance laws as a *"brutal, brutal, big challenge"* (R4:38) while respondent 8 says that: *"There are like trillions of different regulations to adhere to, summarized in like thousands of pages of text that everyone is expected to know "*(R8:6).

The risk of breaking laws regarding generative AI is mostly connected to data leakage and the handling of sensible or non-public information. According to Respondent 2, this limits the usage of generative AI:

> *"There are also many tasks where you can't use generative AI models. Where you work with confidential information all the time. Like I work with the quarterly results, I still have to write them by hand if you will. Because that's secret information, so if it gets out, it affects stock market regulations and everything"* (R2:69).

Furthermore, Respondent 4 explains that the limitations extend beyond being investigated by the financial inspection: *"... we are a socially critical actor. That of course makes a huge difference ... if a bank is down for half an hour, then it's all over the newspapers"* (R4:42). Regarding if generative AI can aid the banks in their work with security issues, Respondents 3 is sceptical since they are associated with a lot of risks: *"Both those areas [Security and Data Management] are also heavily regulated ... and can't be black box as to why a decision was made"* (R3:20). This challenge was combatted and realized from an early stage by Respondent 5 and bank 4:

> *"... we quickly realized that security is so important and that we needed our own version of this [Open AI]. So what we did fairly quickly at the bank was that we deployed our own cloud tenant within our own framework so that the information is secured with us" (*R5:8).

Respondent 5 also highlights the importance of reassuring which suppliers of generative AI bank 4 choose to deploy, since distributors from USA may have different regulations of data handling than those in Europe (R5:18).

Apart from the regulations and policies that are in place as of 2024, Respondent 4 also underscore the necessity to be aware of potential backlashes and obstacles from the AI act that will be introduced by the EU (R4:71). Similarly, Respondent 2 also point to the need for bank to anticipate and adapt to evolving regulatory frameworks (R2:28).

4.4 Strategic Facilitators

4.4.1 Strategic Alliances and Partnerships

For the banks to enhance their chances of effectively utilising generative AI in their organisations, they form strategic and operational alliances and partnerships with external actors. For example, Respondent 2 explains: *"After I read his [Arash Gilan] book, I contacted him. So now he's like our little guru. So when we get stuck in Mid-Journey or when something goes wrong ..., he just helps us move forward.* (R2:32). Regarding partnerships with cloud providers, Respondent 3 stressed the reliance on tech-giants like Google, Microsoft, and AWS for technological infrastructure (R3:18). These partnerships facilitate access to cutting-edge technologies, enabling the utilisation of generative AI models without the need for in-house development (R3:18). Partnerships with tech-giants also act to understand market trends, Respondent 3 explains: *"The partnerships that we have with Google ... keep us on our toes, ... we are always considering what tools, versions, what is the market doing, and how it all matches our strategy and objectives. (R3:31)*

Moreover, the discussion included the involvement of intermediary firms, exemplified by Consultancy X, which play a crucial role in fostering partnerships and converting technical expertise into business solutions (R6:6). Respondents 6 explains that their role at Consultancy X is to act as bridges between technology providers and banks, ensuring the adoption of appropriate solutions aligned with organizational objectives (R6:6).

Looking ahead, respondents expressed optimism about the future integration of AI solutions into mainstream banking operations (R8:6). Respondent 8 emphasised the collaborative efforts within the industry to develop standardized models and frameworks, reflecting the conceptual similarities in banking operations globally (R8:30). Respondent 4 also resonated whether the best way to move forward is by developing their own Open-Source models or integrate models from external platforms such as Azure (R4:65). If Bank 3 where to achieve own Open-Source models where all data infrastructure is controlled by the bank, then the system will truly become *"Enterprise Grade"* (R4:65).

4.4.2 Investment in AI Literacy and Training

Investment in AI literacy and training was a central theme in the discussions with the respondents. Respondent 1 highlighted the bank's commitment to leveraging internal resources, emphasising Bank 1's significant investment in establishing an entire department dedicated to data management, driven by a long-term vision of becoming more data-driven (R1:39). This sentiment was also noted by Respondent 2, who emphasised the importance of having in-house capabilities for building AI solutions, stressing that the absence of such

expertise could hinder the effective utilisation of generative AI within the organization (R2:20).

Furthermore, the discussions underscored the role of training in preparing employees for the adoption of AI technologies. Respondent 2 believe training regarding generative AI is extra important since *"it sets entirely new demands on people's abilities"* (R2:20). Respondent 3 emphasised the necessity of training programs aimed at guiding employees in using AI responsibly and effectively, while also motivating excitement about its potential applications (R3:16). Respondent 3 also highlights educating their employees about possible hallucinations from the generative AI: *"... how to interpret the results so they avoid the hallucination elements of generative AI. To query and question the results that are generated, ... That kind of training is important."* (R3:16). Respondent 1 also explains that the employees of Bank 1 have a lot of discussions about trusting the results from generative AI (R1:58). Similarly, Respondent 7 stressed the importance of education and awareness, cautioning against hasty adoption without adequate preparation and quality assurance measures (R7:14). Respondent 7 explains: *"And again, training, training, training awareness is very, very important. Even though we have governing documents…you can never hide behind governing documents."* (R7:14). This sentiment was further discussed by Respondent 8, who emphasized the significance of internal training initiatives, such as lab teams, to consolidate expertise and accelerate the development of AI capabilities within the organisation (R8:22).

However, despite the recognition of the importance of training, there were indications of challenges and gaps in existing initiatives. Respondent 2 pointed out the potential obstacles faced by organisations transitioning from outsourcing to in-house development, highlighting issues related to competence and employee skill sets (R2:58).

4.4.3 Innovative Culture and Management Support

In addition to highlighting the bank's internal investment in resources and research, respondents underscore the pivotal role of management support in fostering an innovative culture. Respondent 3 points out that having a council inclusive of all officers within the bank facilitates discussions on opportunities, challenges, and the adoption of analytics, with a particular focus on emerging technologies like generative AI (R3:2). Respondent 2 also explains that the senior managers of bank 2 have monthly meetings to get an update and follow the development of generative AI in their organisation (R2:6). Respondent 2 further explains: *"We have to work very closely because we need to convey the same message all the way from above the line to below the line ... and then we look at what we can do better together* (R2:56). At Bank 4, the decision to investigate and integrate generative AI in their business was made early by the company CEO (R5:8).

Additionally, Respondent 7 advocates for the development of proof of concepts and the exploration of various use cases, fostering a culture where failure is seen as a stepping stone to success rather than an obstacle (R7:24). By promoting an iterative approach, Respondent 7 believe that Bank 1 can identify promising technologies and applications while mitigating risks associated with early-stage adoption. Moreover, Respondent 4 explain that Bank 3 have built up an organisation that specifically *"test and labs with new technology"* which today

concerns the utilisations of generative AI in their bank (R4:32). Respondent 4 also highlight that for Bank 3 to create an innovative culture their employees must be *"curious, driven and willing to improve their assets"* (R4:44). The reason for this is the uncertain field that is new technology, Respondent 4 explain:

> *"It's rarely the case that there is someone who knows exactly what to do. Then I have to test it. You have to explore. You have to be curious to test things that may not work in the first step"* (R4:44).

Furthermore, Respondent 8 highlights the importance of a balanced approach to innovation (R8:20). Bank 1 acknowledge the significance of both top-down strategic direction and grassroots involvement. By creating frameworks, policies, and guidelines while encouraging bottom-up initiatives and curiosity-driven exploration, Bank 1 try to ensure that innovation infuse every level of the organisation, fostering a culture where new ideas can flourish (R8:20).

4.4.4 Alignment with Business Value and Objectives

In the exploration of integrating generative AI into business strategies, Respondent 2 highlighted its role within the overarching strategy of the bank, particularly emphasising its implementation within their specific business area (R2:4). Respondent 2 further elaborates: *the strategy was to identify first and foremost the areas where we can pick the low-hanging fruit, where we can quickly save time"* (R2:58). Additionally, Respondent 5 also highlight that Bank 4 are in the process of identifying how generative AI can be aligned with their business operations: *"... we're looking at the current process and then mapping out how much of it we can automate and how much we can save on it"* (R5:28). Bank 1 is also described by Respondent 3 to be in the same process since they evaluate *"what are the best environment, methodologies, best practices, and how do we create synergies?"* (R3:2). Respondent 6 also highlights the significance of starting with clear objectives and success criteria by emphasising the need to evaluate impact soberly against these criteria and learn from the results (R6:26). The focus should also be on personalised content to drive improved outcomes (R6:35).

Similarly, Respondent 4 stressed the necessity of seamlessly integrating generative AI into regular workflows (R4:36). They emphasised the need for practical implementation and advocated for its inclusion in existing workflows, particularly within the Microsoft environment (R4:36). Respondent 4 further explains: *"I think that will be the key to a really broader usage. You have to make it [Generative AI] as easy as possible for people"* (R4:36).

Moreover, Respondent 5 emphasised the critical role of infrastructure, data quality, and access control in successfully implementing generative AI (R5:12). They discussed the importance of cloud computing and the need for business involvement in decision-making processes (R5:12).

Lastly, Respondent 7 discussed organisational challenges in adopting generative AI, noting resistance from some individuals while others threatened to quit if not provided with necessary resources (R7:24).

4.4.5 Ensure Privacy and Regulatory Compliance

Ensuring privacy and regulatory compliance in the realm of generative AI emerges as a multifaceted challenge for the traditional banks. Respondent 3 emphasises the importance of customer-centric decision-making, stressing the need for Bank 1 to evaluate every decision meticulously to justify its impact on their customers (R3:10). Respondent 8 further underscores the necessity to account for the impact of all decisions on customers and their accountability to regulatory authorities, emphasising the ultimatum of transparently explaining the decision-making processes (R8:10).

Regarding concerns about data integrity and regulatory adherence, Respondent 5 underscores the significance of segregating duties to control access to sensitive information (R5:12). Respondent 5 explains:

> *"For example, we have a part of our product organization that sells funds and we have a group that buys funds. They cannot have the same information because then we would violate many regulations. Therefore, it's important with segregation of duties, so you have control over who gets access to the right data"* (R5:12).

Furthermore, Respondent 7 also emphasises the necessity of creating boundaries when training generative AI models, particularly distinguishing between enterprise and customerfocused applications (R7:10). This sentiment is further underscored by Respondent 8, who emphasises the importance of integrating generative AI into existing enterprise frameworks while navigating the complex regulatory landscape that banks must adhere to (R8:10).

5 Discussion

In this section, we will discuss the interview and literature findings in relation to the themes we have derived for generative AI in traditional banks. We will examine how these themes are influenced by comparing our interview results with previous research.

5.1 Utilisation

5.1.1 Operational Utilisation

According to the literature, the operational utilisation of generative AI in businesses is mainly centred around customer interactions and functions (Nah et al., 2023; Lazo & Ebardo, 2023; Karangara, 2023)). By utilising generative AI technologies such as Chat-GPT, the banks can create chatbots and virtual assistants which increases the efficiency of interacting with customers (Karangara, 2023; Nah et al., 2023). Furthermore, Lazo and Ebardo (2023) and Karangara (2023) discuss AI technologies role in combatting and better prepare for fraud and other economic crimes. Karangara (2023) believe that banks can utilise generative AI technologies to analyse large volumes of transactions to quickly identify potential fraud and risks.

These areas of utilisation have not been supported by the findings gained from the interviews of this research. For example, Respondent 1 explained that all the utilisation in Bank 1 is internal and chatbots were most likely not utilised to handle customer operations which contradicts the statements of Karangara (2023) and Nah et al., (2023). Respondent 4 also disclaimed the utilisation of generative AI for any external operations saying Bank 3 must first ensure the quality of these tools before exposing them to customers. The reason for the banks not utilising generative AI for external operations with customer is because they still find themselves in the early stages of testing and developing their models and tools. Both Respondent 1, 3, and 4 all describe that their banks are in an exploratory phase which has led to their generative AI tools and models only being launched on internal operations. The findings from the interviews have also not showed any evidence of generative AI being utilised to combat or detect crimes connected to fraudulence, as described by Lazo and Ebardo (2023) and Karangara (2023).

However, except for utilising generative AI for external business operations, Nah et al., (2023) also argue that it can be used for internal operations. This is well supported by the findings from the interviews, since all Respondents express that their banks have started to integrate generative AI in their internal work. The interview findings suggest that the banks utilise generative AI as a virtual assistant to their employees, by either providing feedback on reports, as described by Respondent 1, or by generating code to software developers, as described by Respondent 8. This sort of operational utilisation aligns with the statements of Feuerriegel et al., (2024) who argue that generative AI can be leveraged to enhance human capabilities for specific tasks.

Furthermore, Nah et al., (2023) statement that generative AI can be utilised for advertising and specific marketing campaigns, is supported by the findings from the interviews. Respondent 2 explains that Bank 2 have used Chat-GPT in the creation of their marketing campaigns and to find inspirations for potential business partners.

Overall, the findings from the literature and interviews of this study are not perfectly aligned. The operational utilisation of Generative AI by the banks have not reached all the capabilities and business operations that is described in the literature, especially for external utilisation. However, by drawing from the findings of the literature and interviews of this study, areas of alignment do exist regarding the utilisation of Generative AI in the bank's internal operations.

5.1.2 Technological Integration and Tools

The literature reveal that the most prevalent tools of generative AI are Chat-GPT 4, Dall-E 2 and Co-Pilot (Nah et al., 2023; Karangara, 2023). That is also the case based on the findings from the interviews, because even though Dall-E 2 is not mentioned by any respondent, ChatGPT and Co-Pilot arise as the two most used generative AI tools in traditional banks. These tools are provided as part of wider partnerships and business agreements between the banks and the technology developers such as Microsoft. Bank 2 has for example been provided a specialised GPT and Microsoft Co-Pilot as part of their Microsoft Enterprise agreement.

Apart from only using the generative AI tools developed and provided by external distributors, the findings from the interviews have also shown that the banks work on developing in-house developed models that can be utilised in their operations. By doing so the banks can tailor their generative AI models and tools after specific business needs and tasks. This supports Karangara's (2023) statement regarding generative AI's broad applicability which can enhance the banks product and technology development. Furthermore, Patel and Smith (2023) stressed the importance of not only focusing on the technological capabilities when integrating generative AI, but also on the humans operating it. This statement is partially supported by the findings from the interviews. For example, Respondent 8 says that Bank 1 selected 300 employees who they deemed most fit for initialling working with generative AI, which to some extent aligns with the statement of Patel and Smith (2023). However, Respondent 8 did not express that they received any extensive training but instead were encouraged to utilise the tools and models in an exploratory manner.

5.2 Value Creation

5.2.1 Business and Operational Impact

The literature stresses that the utilisation of generative AI can create the most value for business efficiency and productivity (Dwivedi et al., 2023; Romão et al., 2019; Karangara 2023; Brynjolfsson Li & Raymond, 2023). Generative AI can enable automation of repetitive work and routine tasks which can lead to employees putting more time and effort into creative

and non-repetitive activities (Dwivedi et al., 2023; Karangara 2023). These statements are well supported by the findings from the interviews. Respondent 5 and 7 express that generative AI can streamline repetitive tasks by enhancing automation of business operations. Furthermore, both Respondents 1 and 2 explicitly say that generative AI allows them to allocate their time more towards more challenging and non-repetitive tasks. The findings therefore indicate that by utilising generative AI value can be created throughout all departments of the banks since Respondent 1, 2, 5 and 7 all have different positions throughout their organisations.

Furthermore, Brynjolfsson, Li, and Raymond (2023) discuss the extent of how much time can be saved, and how much productivity can increase by utilising generative AI. They argue that if generative AI is leveraged as a conversational guidance for a customer support agent, their productivity can increase by 14 %. Even though the findings from the interview don't specifically highlights this scenario, they still have contradicting opinions on whether quantifying the exact saved time or productivity is possible. Respondent 2 argue that depending on which department utilises generative AI, the time saved can vary from 15 - 30% while Respondent 5 believes it is to challenging to quantify increased efficiency to a single number since every use case is different.

When connecting these aspects of value creation for traditional banks, it is evident that the findings from the interview and the literature align on their beliefs that efficiency and productivity will be enhanced by the utilisation of generative AI. However, each department and specific use case will see different results depending on the humans collaborating with the generative AI and the nature of the tasks it is faced with.

5.2.2 Increased Interest and Demand

Throughout the literature the findings suggest that generative AI is a revolutionising technology that can create additional value for a lot of businesses and their employees (Nah et al., 2023; Feuerriegel et al., 2024, Dwivedi et al., 2023; Brynjolfsson Li, & Raymond, 2023). The findings from the interviews suggest the employees and senior managers of traditional banks have more than understood this revelation. Several respondents explain that since ChatGPT was launched, the pressure to integrate similar tools and models have come from all directions of their organisations. The findings from the interviews also suggest that the increased fascination of generative AI has led to a broader interest in technology. Respondent 3 explained that this have made it easier to introduce other technological improvements throughout the organisation of Bank 1. Generative AI have therefore acted as a catalyst for an increased demand of technical solutions, ultimately contributing to a more technological environment for traditional banks.

5.2.3 Customer and Market Impact

Drawing from the literature, Dwivedi et al. (2023) argue that generative AI can enhance customer loyalty by enabling deeper personalisation in banking services. Karangara (2023) adds that banks can boost customer satisfaction and retention by integrating and utilising sophisticated chatbots and virtual assistants. However, these claims were not supported by the interview findings. Respondents denied the use of generative AI for customer interactions,

thereby limiting value creation. Only one respondent mentioned that generative AI contributed to value creation in marketing campaigns. Respondent 2 claimed that neither customers nor the market prefers human or AI-generated images; instead, the message conveyed is what truly matters.

Furthermore, Shetty and Nikhitha (2022) argue that banks must focus on enhancing customer experiences as they demand faster and more seamless services. This statement is supported by Respondent 6, who argued that despite the adoption of previous technologies, traditional banks have increased the workload for customers instead of improving their experiences. Respondent 6, therefore, questions whether generative AI can improve value creation for customers since previous technologies have not.

5.3 Challenges

5.3.1 Ethical and Privacy Concerns

Throughout the interviews, respondents emphasised the ethical and privacy concerns surrounding the use of generative AI tools in traditional banks, aligning with findings from previous literature. Dwivedi et al. (2023) argue that while generative AI offers numerous benefits, it raises significant ethical questions regarding data security and customer privacy. Similarly, Karangara (2023) pointed out that banks must balance leveraging AI for enhanced customer experiences with ensuring robust privacy protections to avoid ethical pitfalls. Respondents 1 and 3 expressed aligned concerns regarding the need for privacy measures within traditional banks. They emphasised the importance of creating private channels to prevent accidental data disclosure and highlighted the risks associated with entrusting sensitive information to generative AI models. This recognition of risks has stopped Bank 1 from integrating any sensitive customer data into models over which they lack complete control regarding storage and utilisation. Respondent 4 also raised concerns about losing customer data, expressing scepticism about using generative AI for external purposes. These concerns underscore the ethical dilemma of deploying AI tools in sensitive areas of banking operations, as highlighted in the literature.

Furthermore, drawing from Nah et al., (2023) argument that widespread adoption of generative AI increases the risk of inadvertently or unintentionally leaking sensitive data about either the banks or their customers. This aligns with the concern raised by Respondent 5 who stresses the importance of assuring that only employees approved to use generative AI are the only one using it. Unauthorized use by unapproved employees therefore heightens the risk highlighted by Nah et al. (2023).

Overall, both the literature and interview findings indicate a pressing challenge to ensure ethical and robust privacy measures to safeguard customer data. Minimising the risks of leaking sensitive customer or company data is of paramount importance to the traditional banks, especially when working with generative AI.

5.3.2 Technological Challenges and Maturity

According to the literature generative AI's efficiency can foster over-reliance among users, potentially diminishing critical thinking and problem-solving skills, as noted by Nah et al., (2023). This is of major concern since generative AI tools sometimes show sign of hallucinations in their output (Alkaissi & McFarlane, 2023). This concern aligns with Respondent 8 who highlighted issues with AI hallucinations, stressing the need for employees to examine if the outputs are reliable and explainable results. Similarly, Respondent 1, observed that AI-generated texts often lack the analytical depth of human-written content due to the models not being trained on live data.

The quality of generative AI models heavily depends on the training data, with bias concerns linked to data quality (Dwivedi et al., 2023). This resonates with Respondent 6's emphasis on the importance of data labelling, stating that without proper labelling, generative AI cannot effectively process data. Furthermore, both the literature and respondents agree on the necessity of data cleansing, though Chen et al. (2021) and Respondent 8 both acknowledge the high costs and complexity involved.

Additionally, legacy systems in banks also present significant technological challenges. Zhu and Jin (2023) and Respondent 5 both point out that outdated infrastructures complicate the integration of new technologies like generative AI, requiring costly and risky upgrades. Respondent 6 also argue that banks face a problem of having data spread out across their organisations further complicating their conditions to successfully utilise generative AI. Additionally, Agrawal (2023) and Respondent 4 highlight compatibility issues, stressing that integrating generative AI with existing systems demands substantial investment and strategic planning.

In summary, both the literature and interviews reveal a consensus on the technological challenges of utilising generative AI in traditional banks, highlighting concerns about data quality, system compatibility, governance, and the necessity of human oversight to ensure reliable AI usage.

5.3.3 Integrational and Organisational Challenges

Drawing from the literature, Chui et al. (2023) emphasise the increased difficulty for users to interpret and understand AI outputs, necessitating continuous learning and adaptation. Respondent 1 supports this sentiment, noting the decentralised nature of Bank 1's departments, complicates efforts to achieve uniformity in operations and effective internal communication. This fragmentation is a significant organisational challenge, as it hinders the seamless integration and standardisation of generative AI across bank's diverse units.

Furthermore, Patel and Smith (2023) highlight the necessity of strategic implementation and creating a culture oriented towards continuous learning. Patel and Smith's (2023) statement align with Respondent 2's observation that resistance to change within the organisational culture of Bank 2 disrupts standardisation and collaboration. This view is also shared by Respondent 6 who believe that there is a lot of conservative attitudes among their employees, further hindering their organisational prerequisites for generative AI. Moreover, Respondent 6 questions the banks level of agility and instead argues that their organisational methodology is

more like a waterfall where all the directives come from senior management. This further complicates their flexibility and responsiveness to technological advancement.

Drawing from these findings, Zhu and Jin (2023) and Al Ajlouni and Al-Hakim (2018) argue that bank's must fundamentally reconsider their business models and operational process to better capitalise on new technologies such as generative AI. This remains a challenge for traditional bank since respondents highlight the difficulty in formalising responsibilities and ensuring quality control when implementing generative AI models, emphasising the need for clarity and structure in their deployment processes.
Ultimately, the findings from both the literature and the interviews highlight the significant integrational and organisational challenges traditional banks face in utilising generative AI. These include organisational culture, resistance to change, data quality, and adaptation to the rapid pace of technological advancement. These challenges lay a foundation that indicate that traditional banks' have problems to scale up their utilisation of generative AI.

5.3.4 Regulatory and Compliance Issues

Regulatory and compliance challenges are significant for traditional banks adopting generative AI. Banks operate in a heavily regulated environment where compliance with stringent laws and guidelines is mandatory, which can delay or complicate the adoption of new technologies (Diener, Dvouletý, & Špaček, 2021). Lazo and Ebardo (2023) explain that navigating this complex regulatory landscape is a significant challenge, as banks must align their AI strategies with strict regulatory standards to avoid penalties and ensure compliance. They also emphasise that AI applications in banking must be designed to be transparent and accountable to satisfy both regulators and the public.

Data security and regulations are critical issues (Truby, Brown, & Dahdal, 2020), especially with AI models like ChatGPT, which involve extensive use of personal information. The use of such data heightens privacy risks and increases the chance of inadvertent or intentional data leaks (Nah et al., 2023). Respondent 2 highlighted this risk, explaining that they cannot utilise generative AI when they work with quarterly results or similar tasks where the data is not public. The regulatory landscape therefore limits the extent to which traditional banks can utilise generative AI in their operations.

Furthermore, Chui et al. (2023) highlights issues such as copyright and governance since generative AI can produce content that might infringe on copyrights, necessitating compliance with copyright laws. This concern was also shared by Respondent 3 who emphasised that traditional banks must be able to show transparency on how the generative AI has produced an output. It cannot be a black box as to why certain outputs have been generated because then they will not be able satisfy neither the regulators nor the public.

Heintz et al. (2023) argue that clear and supportive regulations can mitigate risks and empower organizations to innovate confidently with AI technologies. This regulatory support is crucial for navigating ethical considerations and privacy concerns inherent in generative AI deployments. Additionally in support of Truby, Brown, and Dahdal's (2020) statement of the issues regarding third vendor management, Respondent 5 highlighted the importance of selecting generative AI suppliers carefully. They noted that different regions have varying regulations on data handling. Traditional banks who operate in Europe might therefore have

trouble following the guidelines argued by Heintz et al., (2023) if their suppliers and in extent data handlers are from the USA where other regulations exists.

Lastly, the discussions underscore the multifaceted and complex nature of regulatory and compliance challenges facing traditional banks. Both literature and interview findings highlight the critical importance of clear, supportive regulations and robust internal governance structures to better navigate these challenges. However, these regulatory challenges also indicate that traditional banks face further problems of scaling up their utilisation of generative AI.

5.4 Strategic Facilitators

5.4.1 Strategic Alliances and Partnerships

According to the literature, Jourdan et al., (2023) highlight that for traditional banks to stay competitive they must partner and collaborate with FinTech banks. Due to their more agile organisational structure, their utilisation and strategic facilitators can serve as inspiration and recipe on how to successfully adopt generative AI in financial operations. However, the findings from the interviews do not show evidence of strategic alliances or partnerships between traditional and FinTech banks. Instead, the respondents underscore that traditional banks rely on the tech-giants that provide generative AI solutions. These partnerships are explained to facilitate access to cutting-edge technology while better understanding the trends of the market.

Jourdan et al., (2023) suggestion that traditional banks should partner with FinTech banks when working with generative AI is therefore not evident based on the findings from this study. Instead, their partnerships are formed with tech-giants that can more effectively offer them the services and navigation they require for successfully utilising generative AI.

5.4.2 Investment in AI Literacy and Training

The literature findings suggest that there is substantial need for investments in training for employees to develop a competitive advantage and successfully leverage generative AI (Nah et al., 2023; Dwivedi et al., 2023; Romão et al., 2019). This perfectly resonates with the findings from the interviews since the respondents express the importance of training and continuous testing and evaluation when working with new technologies such as generative AI.

Furthermore, Nah et al., (2023) argue that if generative AI undergo testing an evaluation by varied users and experts it will help to identify and correct potential biases. Similarly, Dwivedi et al. (2023) underscore the necessity of governance and control of data input and output to eliminate bias, aligning with the need for continuous learning and adaptation to leverage generative AI's full potential. This perspective is supported by Respondent 3, who stressed the importance of training programs to guide employees in using AI responsibly and effectively, while educating them about potential hallucinations from generative AI.

Romão et al. (2019) highlighted the ongoing expenses related to maintaining and developing AI systems, requiring continuous investment in both new technologies and staff. This aligns with Respondent 1's observation about Bank 1's significant investment in establishing a dedicated department for data management, driven by a long-term vision to become more data driven.

Investments in departments and staff incorporates training employees in preparing them for the adoption and utilisation of AI technologies such as generative AI. Moreover, Dwivedi et al. (2023) and Romão et al. (2019) further discuss the importance of continuous investment in human capital to ensure AI technologies evolve in response to changing organisational needs and external pressures. This thought is shared by Respondent 8, who highlighted the significance of investments in internal training initiatives, such as lab teams, to consolidate expertise and accelerate generative AI capability development within the organisation. However, challenges and gaps in existing training initiatives were highlighted by Respondent 2 who pointed out potential obstacles faced by organisations transitioning from outsourcing to in-house development. It then becomes a question whether the competence and employee skills exist within the banks to manage this transition.

Overall, both literature and interview findings underscore the importance of strategic investments in AI literacy and training for the effective utilisation of generative AI in traditional banks. These investments are essential not only for addressing technical and operational challenges but also for fostering a culture of continuous learning and adaptation, crucial for leveraging the full potential of AI technologies.

5.4.3 Innovative Culture and Management Support

According to the literature, the need to make organisational adaptations to successfully leverage generative AI is evident (Agrawal, 2023). Patel and Smith (2023) also not that successful adoption and utilisation of generative AI not only concerns technology deployment but also the human workforce, underscoring the need to create a culture oriented towards continuous learning and adaptation.

The importance of management support in fostering an innovative culture is a central theme in the discussions with respondents. Respondent 3 highlighted that having a council inclusive of all officers within the bank facilitates discussions on opportunities, challenges, and the adoption of analytics, with a particular focus on emerging technologies like generative AI. In line with this, Respondent 2 further explains that senior managers at Bank 2 have monthly meetings to get updates and follow the development of generative AI within their organisation, emphasising the importance of consistent messaging from top management. This aligns with Patel and Smith's (2023) view that creating a culture of continuous learning and adaptation is essential and Agrawal's (2023) point about the necessity of organisational adaptation for successful AI integration.

Moreover, Respondent 7 advocated for developing proof of concepts and exploring various use cases, fostering a culture where failure is seen as a stepping stone to success rather than an obstacle. By promoting an iterative approach, they believe that Bank 1 can identify promising technologies and applications while mitigating risks associated with early-stage adoption. Respondent 4 also explained that Bank 3 has built an organisation specifically for

testing and experimenting with new technology, including generative AI. They stress that creating an innovative culture requires employees to be curious, driven, and willing to improve their assets, further aligning with the ideas of Patel and Smith (2023).

Drawing from both the literature and the interviews it is clearly emphasised of the critical role of management support and an innovative culture in successfully adopting and utilising generative AI. Strategic implementation, continuous learning, and organisational adaptation are all essential for leveraging the full potential of AI technologies and fostering a culture where new ideas can flourish.

5.4.4 Alignment with Business Objectives

Agrawal (2023) stresses that seamless integration of generative AI can reduce friction and accelerate adoption by aligning new technologies with current operational workflows and existing technological infrastructure. This perspective aligns with Shetty and Nikhitha (2022), who emphasise that to stay competitive, traditional banks must embrace new technologies and strategies that streamline processes, offer personalised services, and comply with evolving regulations. The rapid pace of digital transformation necessitates that banks not only adopt new technologies but also rethink their business models and operational processes to fully capitalise on these advancements.

The respondents also highlighted the importance of aligning generative AI with business objectives. Respondent 2 emphasised its role within the overarching strategy of the bank, particularly within specific business areas where their strategy was to identify where they could pick the low-hanging fruit and quickly save time. This aligns with Agrawal's (2023) view about seamless integration reducing friction and accelerating adoption. Similarly, Respondent 5 noted that Bank 4 is in the process of identifying how generative AI can align with their business operations. Similarly, Respondent 3 described Bank 1 as being in a similar process of evaluating the best environments, methodologies, and practices which further support the statement by Shetty and Nikhitha (2022) that banks need to rethink their business models and operational processes.

Additionally, Respondent 4 stressed the necessity of seamlessly integrating generative AI into regular workflows, particularly within the Microsoft environment. They believe that the key to a broader usage of generative AI tools they must be made as easy as possible for humans to operate.

Overall, both the findings from the literature and interviews highlight the importance of aligning generative AI with business objectives to ensure seamless integration, streamline processes, and enhance efficiency for traditional banks.

5.4.5 Ensure Privacy and Regulatory Compliance

For the traditional banks to ensure the privacy and regulatory compliance challenges associated with generative AI, described by Diener, Dvouletý, and Špaček (2021), Lazo and Ebardo (2023) Chui et al., (2023), Heintz et al., (2023), and Nah et al., (2023), the traditional banks deploy several strategic facilitators. Firstly, Respondent 3 underscore the importance

that Bank 1 foster customer-centric decision-making throughout their organisation. This means that their guidelines should always be to investigate how every decision impact their customer. This statement is supported by Respondent 8 who except for their customers also highlight the importance of being accountable to regulatory authorities. A decision or output generated by any AI model must therefore always be explainable.

To achieve this level of transparency and explainability, Respondent 7 emphasise the necessity of constructing boundaries when training their generative AI models, especially distinguishing between enterprise and customer-focused applications. The generative AI models that the banks deploy must therefore always be trained on data that the banks themselves own or that is free to use. By doing so they will mitigate risks such as copyright infringements, described by Chui et al., (2023).

6 Conclusion

This study, conducted through a combination of literature review and empirical findings, aims to answer two research questions. Firstly:

How are traditional banks currently utilising generative AI and how does it create value?

Ever since Chat-GPT was launched, traditional banks have investigated and initiated the adoption of generative AI into their business operations. They have taken this step to advance their digitisation efforts and maintain their status as industry leaders in an increasingly competitive banking landscape. The resurgence of FinTech banks has especially been noted as a heightened risk for traditional banks since they are more technologically advanced and operate in a lower regulatory environment.

Drawing from the research findings it is evident that the traditional banks find themselves in a phase of exploration and testing. Generative AI is a novel technology leading to its areas of utilisation and potential value creation still being unclear to many adopters. As a result, banks have limited the deployment of generative AI to internal operations that are repetitive or timeconsuming for humans. It serves as a virtual assistant, helping with tasks such as code generation and providing feedback on reports. Furthermore, the research findings are contradictory regarding the external use of generative AI. The literature highlights its use in customer-facing applications like chatbots, whereas interview findings indicate that no generative AI is directly used with customers or trained on any customer data.

Moreover, while generative AI is currently used only for internal operations, the research findings indicate that it creates substantial value. Traditional banks see the most significant value creation in improving employees' efficiency and productivity for time-consuming tasks. Employees who use generative AI in their work can save considerable time on specific tasks, allowing them to focus more on complex and non-repetitive activities. However, the research cannot definitively quantify the extent of efficiency and productivity enhancements, as the results are either contradictory or unclear.

Furthermore, this research also aims to answer:

What are the key challenges and facilitators for traditional banks in successfully adopting and leveraging generative AI?

According to the research findings, traditional banks face challenges related to ethics and privacy, technology integration, organisational issues, and regulatory compliance when adopting generative AI. All these challenges complicate and limit traditional banks' adoption of generative AI, making it difficult for them to upscale their utilisation. The regulatory landscape and organisational structure particularly hinder the banks' ability to successfully adopt and leverage generative AI. Traditional banks are often conservative, large, and hard-tomanoeuvre institutions, unfit for fast-paced and rapidly evolving technological environments.

To address these challenges, the research findings conclude that traditional banks deploy several strategic facilitators, including alliances and partnerships, investment in AI literacy and training, fostering an innovative culture with management support, alignment with business objectives, and ensuring privacy and regulatory compliance. The partnerships and alliances with tech-giants enable the banks to focus on the core business objectives while being provided with cutting-edge technology and insights on the latest trends. The research findings show that the top management are well versed in the importance of generative AI, which facilitates the banks for higher AI literacy through training and a more innovative and technology-friendly culture. Furthermore, the findings from this research emphasise the necessity of aligning the utilisation of generative AI with existing business objectives and strategies. Without a clear plan for how generative AI will integrate into their business operations and what goals they aim to achieve successful adoption will not be possible. These insights provide a framework for traditional banks to navigate the complexities of integrating generative AI into their operations effectively.

Overall, this thesis offers valuable insights into the current state and future potential of generative AI in traditional banking institutes. This research concludes that while traditional banks are in an early exploratory phase of adopting generative AI, they have been able to create value for their internal business operations. However, they still face several challenges hindering the upscaling of generative AI, and it is too early to determine the full impact of their strategic facilitators on these challenges. Thus, more research is needed to explore the long-term impacts of generative AI adoption in traditional banking institutes.

6.1 Future Research

This research aimed to investigate the utilisation of generative AI within traditional banking institutions and identify the challenges and facilitators for leveraging this technology to create value. Results have shown that traditional banks primarily use generative AI for internal operations, where it generates the most value in terms of efficiency and productivity. While there are many challenges associated with generative AI, traditional banks have implemented several strategies to better navigate their work with this technology. However, due to the novel nature of generative AI in traditional banking institutions, the long-term effects of these strategic facilitators are limited in this research. The novelty of generative AI also affects the readiness of traditional banks to adopt it, which has not been included in this study. Therefore, we call for further research on the long-term impacts of generative AI and the strategic facilitators employed by traditional banks. Additionally, more research is needed on the readiness of traditional banks to adopt generative AI on a large organisational scale, as this research concludes that banks remain at a low level of adoption.

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