



Data monetisation in the South African financial sector: Exploration of business models and strategies for revenue generation from data assets

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ABSTRACT

This study explores the business models and strategies for data monetisation in the South African financial sector, focusing on the transformative potential of data as a strategic asset. It examines current data monetisation practices, identifies systemic barriers, and evaluates the role of internal capabilities such as leadership advocacy, technical infrastructure, and workforce skills in driving successful implementation. Through a qualitative research methodology involving semi-structured interviews with key stakeholders, the study captures nuanced insights into organisational challenges and opportunities.

Findings reveal significant barriers, including outdated infrastructure, fragmented data silos, low data literacy, and cultural resistance, which hinder the sector's ability to realise the potential of data monetisation fully. Leadership commitment and stakeholder engagement emerged as critical enablers for fostering innovation, aligning organisational strategy, and navigating ethical and regulatory considerations. Opportunities such as hyper-personalisation, open banking, and API monetisation were identified as pathways for driving growth and enhancing customer experiences. However, their success depends on foundational improvements, such as scalable infrastructure, robust data governance frameworks, and metrics to measure financial and experiential outcomes.

The study contributes to the academic discourse on data monetisation by providing actionable recommendations for overcoming systemic challenges and cultivating a data-driven culture. It calls for further research to validate findings quantitatively and examine the role of ecosystem-level collaboration in advancing sustainable and innovative data monetisation strategies. This research highlights the importance of aligning technological, organisational, and ethical dimensions to unlock the full potential of data as a revenue-generating asset in the financial sector.

KEYWORDS

Data monetisation, South African financial sector, ethics, business models, data quality, leadership, systemic challenges

DECLARATION

I, Serole Onismus Kgadima, hereby declare that this research is my original work, except where due acknowledgment has been made in the references and acknowledgments. This applied research is submitted in partial fulfilment of the requirements for the Master of Business Administration degree at the University of the Witwatersrand, Johannesburg. Furthermore, I confirm that this work has not been previously submitted, in whole or in part, for any degree or examination at any other university

Signature: Serole Onismus Kgadima

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LIST OF ACRONYMS

List of acronyms	
AI	Artificial Intelligence
BBVA	Banco Bilbao Vizcaya Argentaria
BDVC	Big Data Value Chains
BMC	Business Model Canvas
DCAM	Data Management Capability Assessment Model
DCF	Dynamic Capabilities Framework
DOI	Diffusion of Innovation
GDPR	General Data Protection Regulation
GDP	Gross Domestic Product
IoT	Internet of things
ML	Machine Learning
RBV	Resource-Based View

CHAPTER 1: GENERAL INTRODUCTION

1.1. Statement of purpose

This research explores business models the South African financial sector use to monetise its data assets. It analyses existing approaches, evaluates their effectiveness, identifies challenges, and proposes recommendations for optimising data-driven revenue generation. The outcomes of this research, with their potential to transform data monetisation within the financial sector, could significantly enhance strategic decision-making and revenue generation through data assets (Sharmin et al., 2024).

1.2. Background of the study

Data monetisation, identified as systematic process of transforming data assets into measurable financial value, has gained prominence as organisations seek to enhance revenue streams, reduce operational costs, and develop innovative data -driven products and services (PWC, 2025). Wixom and Ross (2018) conceptualise data monetisation as transforming data into economic value through diverse strategic methodologies. In today's digital economy, merely possessing data is no longer a distinguishing factor; instead, the ability to effectively monetise data constitutes a significant competitive advantage (Wixom & Ross, 2018). This capability to extract economic value from data is crucial, enabling organisations to enhance their strategic positioning and optimise operational efficiency within the marketplace.

At the macroeconomic level the significance of data monetisation is evidenced by its measurable contribution to gross domestic product(GDP).In 2023 The European data economy was valued at €544 billion, representing approximately 4.2% of the European Union's GDP (European Commission. Directorate General for Communications Networks, Content and Technology. et al., 2024).

The digital revolution within the financial industry is fundamentally transforming organisational frameworks, necessitating the adoption of innovative business models to leverage the expanding volumes of data (Ajigini & Chinamasa, 2023). This research addresses the unique challenges and opportunities arising from this transformation, offering valuable insights for financial institutions. Despite the significant opportunities, data monetisation presents substantial challenges.

Institutions must navigate complex issues related to data privacy, security, and the regulatory landscape, which can impede the full exploitation of data assets (Parvinen et al., 2020).

1.3. Problem statement

In the South African financial sector, despite the abundance of accessible data, there is a notable lack of clear directives on effective data monetisation models (Moyikwa, 2023). Organisations invest resources in data and analytics to drive expansion yet primarily use this data to refine existing processes rather than innovate new business frameworks (Wixom & Ross, 2018). Moyikwa, (2023) agrees that despite capital and strategic investment in data assets many organisations including those in South Africa financial sector continue to encounter persistent difficulties in translating those investments into demonstrable business value. While the concept of data monetisation has been extensively examined on a global scale (Faroukhi et al., 2020; Hanafizadeh & Nik, 2020, Ofulue & Benyoucef, 2022), there is a need for more literature that explicitly tackles the identification and selection of efficient data monetisation business models and strategies within the South African financial domain.

Existing research provides a foundational understanding of how data can be transformed into an asset for financial institutions worldwide. However, studies often discuss data monetisation in broad terms, failing to explore the complexities of selecting the most suitable models tailored to specific regional and sectoral contexts (Faroukhi et al., 2020; Hanafizadeh & Nik, 2020). Furthermore, while Ofulue and Benyoucef (2022) highlight the importance of effective data monetisation strategies for profitability, there is a scarcity of detailed analyses on how financial institutions in South Africa can identify and select business models and strategies that both enhance profitability and align with local market conditions and regulatory frameworks (Moyikwa, 2023).

The distinctive challenges highlighted by Grassi et al. (2022), which include integrating traditional banking with digital-only services, and the concerns about data privacy and security, as discussed by Parvinen et al. (2020), suggest that the South African financial industry requires a nuanced approach to data monetisation that existing literature does not fully address.

This research addresses these gaps by exploring the data monetisation business models and strategies in the South African financial sector. Additionally, it examines potential barriers to

implementing these strategies and proposes recommendations for overcoming them, enabling organisations to unlock the full potential of data as a revenue source.

1.4. Research objective

The primary research objective can be stated as:

To identify and evaluate effective business models for monetising data monetisation in South African financial institutions.

The sub-objectives can be stated as:

- 1. To analyse current data monetisation practices in South African financial institutions.**
- 2. To identify specific challenges and barriers South African financial institutions face to monetise data effectively.**

1.5. Rationale of the study

This study's significance lies in its potential to provide valuable insights into data monetisation practices within the South African financial industry. By addressing existing gaps in the literature and providing practical recommendations, this research aims to inform decision-makers within financial institutions and other stakeholders about the opportunities and challenges associated with data monetisation, facilitating informed strategies for revenue optimisation and sustainable growth. The study further aims to provide regulators with the insights into balancing innovation with consumer protection, thereby establishing a foundational framework for sustainable and ethically grounded data monetisation initiatives.

1.6. Delimitations of the study

This study focuses solely on the South African financial industry, thus limiting its scope to financial institutions operating within this jurisdiction. Additionally, while the research aims to provide comprehensive insights into data monetisation practices, it may only cover some aspects or potential applications within the broader context of the financial sector.

1.7. Assumptions

The researcher assumes that the data collected for this study are accurate and dependable, and that the participants provide honest and insightful responses during the interviews. Furthermore, it is assumed that the findings and recommendations derived from the research are applicable and relevant to financial institutions operating within the South African industry.

1.8. Chapter outline

The study's structure is as follows:

Chapter one introduces the study by presenting the background, problem statement, objectives, rationale and structure.

Chapter two reviews literature on global and local data monetisation, global practices in data monetisation, intersection between data monetisation and revenue generation business models, emerging models in data monetisation, challenges in data monetisation, regulatory and ethical considerations of data monetisation and explores theoretical framework.

Chapter three outlines the research paradigm, design, sampling strategies, and quality assurance measures.

Chapter four presents the finding and discusses them in relation to theories and prior studies.

Chapter five concludes by summarising findings, outlining implications, and proposing recommendations and future research directions.

CHAPTER 2: LITERATURE REVIEW ON DATA MONETISATION

2.1. Introduction

This literature review synthesises existing research on data monetisation, business models, barriers to monetisation, and the analysis of various data monetisation models. By integrating insights from previous studies, theoretical constructs, and empirical evidence, it explores business models South African financial institutions can adopt to monetise their data assets effectively. Additionally, it aims to address challenges and improve revenue generation within these institutions.

2.2. Overview of data monetisation

Data monetisation encompasses a broad spectrum of activities, ranging from the direct sale of data to enhanced business operations and decision-making processes, thereby deriving substantial value from data assets (Ofulue & Benyoucef, 2022). This process is particularly significant in the financial sector, where immense volumes of data are generated daily, influencing financial products, services, and market dynamics (Firouzi et al., 2022). The advent of the digital revolution has highlighted the global importance of data monetisation in finance, giving rise to innovative business models and competitive strategies rooted in data-driven insights (Grassi et al., 2022; Firouzi et al., 2022). Robust frameworks and methodologies are essential to effective data monetisation, including establishing comprehensive data governance models. These models maintain data quality, security, and ethical utilisation (Hasan et al., 2020). Such frameworks are indispensable for preserving data integrity and reliability, facilitating its strategic deployment to drive competitive advantage and foster innovation within the financial sector.

2.3. Intersection of data monetisation and revenue generation

In the contemporary digital economy, data monetisation has emerged as a strategic priority for financial institutions aiming to sustain competitive advantage and enhance profitability (Borthakur, M. et al., 2022). This shift reconceptualises customer and transactional data as revenue generating assets, operationalised through advanced analytics to derive direct and indirect value (Borthakur, M. et al., 2022; Ofulue & Benyoucef, 2022).. Direct monetisation involves the sale of anonymised insights, while indirect value is created through personalised offerings, enhanced customer targeting, and optimised risk management (Borthakur, M. et al., 2022; Ofulue & Benyoucef, 2022).

The most substantial gains are realised through cross industry data integration, where collaborative ecosystems enable comprehensive customer segmentation and foster service innovation , thereby unlocking new revenue opportunities (Dey et al., 2025; Ritala et al., 2024).The application of machine learning techniques supports this paradigm by enabling high-precision customer segmentation and behavioural prediction, with reported accuracies exceeding 88% accuracy in identifying product preferences and adoption patterns (Dey et al., 2025). These analytical capabilities underpin hyper-personalised marketing strategies and targeted cross selling, which directly enhance customer lifetime value and overall revenue performance(Borthakur, M. et al., 2022; Dey et al., 2025).Collectively , these developments illustrate how data monetisation and revenue generation are increasingly interdependent, reflecting a strategic convergence that is reshaping value creation models in the financial sector.

2.1. Global practices in data monetisation

Through a systematic literature review, Baecker et al. (2020) identified 12 generic strategies (see Appendix A) for monetising data, encompassing activities such as selling data independently and strategically sharing data while maintaining control. This demonstrates the wide range of approaches that businesses have at their disposal (Baecker et al., 2020). Developing a utility framework for pricing data sets seeks to address pricing challenges by highlighting the importance of understanding the utility of data to potential buyers, thereby enabling more effective monetisation strategies (Mehta et al., 2021).

Many successful instances of data monetisation demonstrate its strategic and financial significance across various sectors. The experience of Banco Bilbao Vizcaya Argentaria (BBVA) in establishing a data science centre of excellence emphasises the importance of a systematic approach to data monetisation (BBVA Group et al., 2019). This involves enhancing current practices and exploring new avenues for transforming data and analytics into financial gains (BBVA Group et al., 2019). By grounding its business model in behavioural finance theory, Discovery Bank aims to modify client behaviours to enhance financial well-being (Hyland et al., 2021). It indirectly contributes to a unique form of data monetisation by improving customer loyalty and engagement through personalised financial products and services (Hyland et al., 2021).

2.2. Business models

Business models are essential for enhancing organisations by coordinating resources and operations to maximise profit (Hedman & Kalling, 2003). Robust business models can boost overall performance through cost savings, greater sales volume, and improved operations (Morris et al., 2005). Sustainable business models must fit inside and outside to guarantee consistency and environmental flexibility (Hedman & Kalling, 2003).

Schoneveld (2020) discusses the business model concept as a strategic blueprint organisation use to generate profits by identifying value propositions, delivery methods, and mechanisms to capture economic advantages. Wiener et al. (2020) further elaborate on the intricate nature of business models, portraying them as plans that depict a company's operational, value creation, and value-capturing aspects.

2.3. Emerging models in data monetisation

The rapid pace of the internet of things (IoT) and the emergence of data economy concepts, as discussed by Firouzi et al. (2022), further highlight the shift towards monetising data through insights-as-a-service options and privacy-preserving machine learning techniques, moving beyond mere data selling to adding value to data. Hanafizadeh and Nik (2020) introduce a configurational model for data monetisation, emphasising layers such as monetisation, data refinement, base layer, and accessing and processing restrictions, which are crucial for realising competitive organisational capabilities. Faroukhi et al. (2020) align with this model, discussing the transition from traditional value chains to Big Data Value Chains (BDVC) and Big Data monetisation. They emphasise the importance of data flow and analytics tools in extracting valuable insights to drive profit generation. Müller & Buliga (2019) identify three core archetypes (see Appendix B), that exemplify how companies can leverage data to generate competitive advantage.

2.4. Challenges in data monetisation

Technical challenges are significant, with the need for sophisticated tools and architectures to manage and analyse massive volumes of data, a necessity highlighted by the rapid evolution of the IoT and big data technologies (Graetsch et al., 2022). These technical hurdles are compounded by data quality issues, including the alignment, understanding, and resolution of data quality

problems, which can undermine trust in the data and its insights (Ofulue & Benyoucef, 2022). Moreover, selling data poses a significant challenge due to the unique business model required, emphasising the complexities involved in direct data monetisation efforts (Wixom & Ross, 2018).

Data monetisation necessitates a delicate balance between making data available for analysis and protecting individuals' privacy (Firouzi et al., 2022). This balance is particularly challenging in data market platforms, necessitating advanced privacy-enhancing technologies and thorough de-identification processes to facilitate data transactions while ensuring compliance (Firouzi et al., 2022).

Leadership accountability is also crucial, as committed leaders are pivotal in guiding employee behaviours toward delivering new value propositions (Wixom & Ross, 2018). Financial institutions face a complex landscape of challenges in data monetisation, including technical hurdles, data quality issues, privacy and security concerns, regulatory compliance, and cultural barriers, all of which must be navigated carefully to unlock the value of data (Vimercati et al., 2021; Faroukhi et al., 2020).

2.5. Broader regulatory and ethical considerations of data monetisation

The Protection of Personal Information Act No. 4 of 2013 (POPIA), enacted in July 2021, emphasises South Africa's commitment to safeguarding personal data. It aligns with global standards such as the European Union's General Data Protection Regulation (GDPR) (Mahomed et al., 2022). This regulatory framework mandates stringent requirements for processing personal information, directly impacting how financial institutions manage, share, and monetise data (Warikandwa, 2021).

The sophistication of South Africa's financial system does not always translate into robust privacy protections for financial information, as highlighted by Privacy International, indicating a regulatory gap that could impact data monetisation practices (Van Den Berg & Struwig, 2020). Organisations employ multi-level innovation governance approaches underpinned by ethical strategies that emphasise mutual benefit among stakeholders, data minimisation, and anonymisation (Cave, 2016). However, the ethical impact of data science and the potential for harm, such as loss of privacy or discrimination through classification algorithms, necessitates a structured integration of ethical considerations in data science projects (Saltz & Dewar, 2019).

2.6. Theoretical framework

The framework incorporates the Resource-Based View (RBV), Diffusion of Innovations (DOI) Theory, and Stakeholder Theory. Each theory contributes unique insights into different aspects of data monetisation, such as resource management, strategy adoption, and organisational dynamics, thereby offering practical guidance for data monetisation strategies in the South African financial sector.

2.6.1. Resource-Based View (RBV)

The RBV suggests that firms can gain sustainable competitive advantage by exploiting internal resources that are valuable, rare, inimitable, and non-substitutable. In data monetisation, the RBV provides insights into how data as a strategic asset can be internally managed and optimised to enhance competitive capabilities and create unique value propositions within the financial sector (Barney, 1991; Assensoh-Kodua, 2019). Moreover, studies by Wernerfelt (1984) emphasise that strategically managing resources can lead to superior performance and competitive positioning.

2.6.2. Diffusion of Innovations (DOI) Theory

The DOI theory explores how new technologies and strategies are adopted within organisations. Diffusion principles can accelerate adoption and broaden reach (Dearing & Cox, 2018). This theory provides a valuable lens for understanding the adoption of data monetisation strategies financial institutions. In the context of financial sector where change can be constrained by regulatory, technological and cultural barriers, DOI theory supports the design of targeted communication and implementation strategies that enhance acceptance, accelerate diffusion and institutionalise data driven value creation.

2.6.3. Stakeholder theory

The stakeholder theory highlights the collaborative nature of data monetisation strategies, emphasising the importance of considering the interests of all stakeholders involved in or affected by organisational strategies. Data monetisation ensures that strategies are developed with a balance of profitability and responsibility, addressing the needs and impacts of customers, employees, regulatory bodies, and other stakeholders. This collaborative approach is beneficial and crucial for the success of data monetisation initiatives in the South African financial sector (Freeman, 1984).

2.7. Conceptual framework

The conceptual framework integrates multiple theoretical insights to examine and enhance data monetisation strategies holistically. The RBV emphasises leveraging data as a strategic asset, while the DOI focuses on the adoption rates of new technologies, and the stakeholder theory ensures that monetisation strategies align with both profitability and ethical standards. This multidimensional framework is designed to navigate the complexities of data monetisation, enabling financial institutions to capitalise on their data assets while addressing operational, economic, technological, and ethical challenges, and fostering innovative, effective, and sustainable business models within the sector.

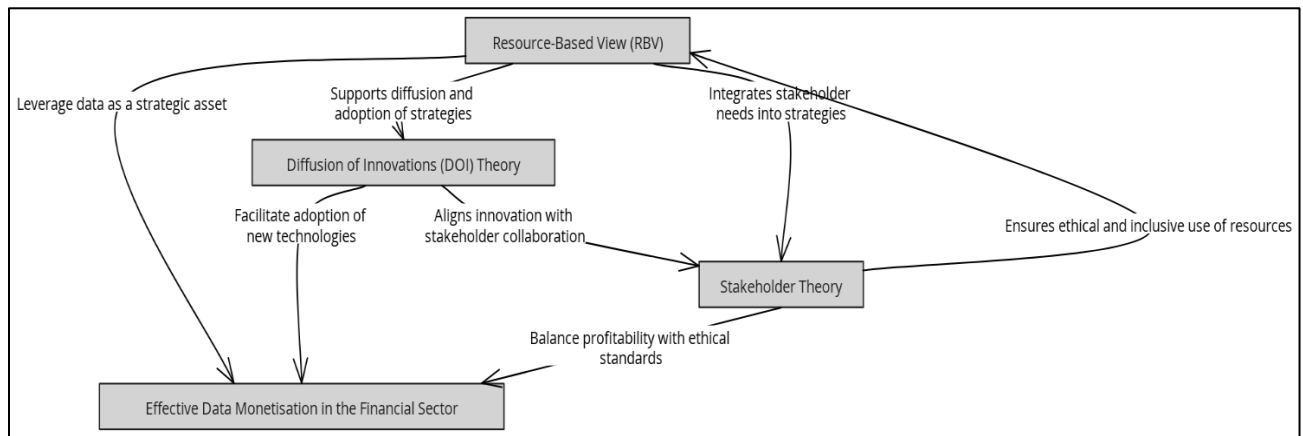


Figure 1: Conceptual framework

CHAPTER 3: APPLICATION OF RESEARCH METHODOLOGY

3.1. Research paradigm

The research is grounded in the interpretivist paradigm, which assumes that organisational realities are socially constructed and are most effectively understood through the subjective perspective of individuals (Flick, 2014). This aligns with the use of qualitative interviews, which capture the nuanced experiences of professional involved in the data environment.

3.2. Research design

This study adopted a qualitative research design to provide an in-depth exploration of data monetisation strategies within South African financial institutions. A qualitative approach is particularly suited to investigating complex phenomena such as data monetisation, which requires understanding participants' perspectives, experiences, and the contextual factors influencing strategic decisions (Flick, 2014). The chosen design facilitates rich, contextual insights into the barriers, opportunities, and innovative practices shaping data monetisation.

3.2.1. Data collection methods

Primary data was collected using semi-structured interviews with senior management, data scientists, data engineers and lead data analysts in the South African financial sector. Semi-structured interviews were selected due to their flexibility, allowing for probing and clarification to extract detailed insights while maintaining consistency across interviews. All interviews were conducted virtually, using secure online platforms, to ensure accessibility. Each interview lasted between 30 minutes and one hour and was conducted in English.

3.2.2. Participant selection

The study employed purposive sampling to select participants with substantial expertise and experience in data monetisation within financial institutions. Purposive sampling is a non-random method where researchers selectively choose participants with specific characteristics crucial to the study's objectives, optimising resource use in qualitative research (Etikan et al., 2016). The participants were identified through the researcher's experience in the financial institution, social platforms such as LinkedIn and snowball sampling (Noy, 2008). Snowball sampling was employed

due to constraints in identifying domain-specific experts through conventional sampling methods. Referrals from initial participants facilitated access to network of qualified respondents who would have been inaccessible through traditional approaches (Noy, 2008).

A total of 13 participants were interviewed, representing a range of institutions and professional roles. This sample size allowed for thematic saturation, ensuring that the emerging themes fully capture the research context.

3.2.3. Biographical details of participants

The participants in this study represent a diverse and highly skilled group of professionals occupying pivotal roles within data and analytics domains in the South African financial sector.

Participant	Role	Area of Specialisation
Participant one	Data Engineer	Specialises in building data pipelines to drive strategic, holistic business solution
Participant two	Senior Data Analyst	Expert in implementation of data driven solutions that drive profitability and customer-centric outcomes
Participant three	Head of Insights and Analytics	Seasoned banking leader skilled in credit, product management, digital adoption and data driven strategies
Participant four	Data Scientist	Specialises in advance data analytics and building model to drive customer engagement and retention
Participant five	Executive – Data Analytics	Leader in digital transformation across African financial markets
Participant six	Lead -Data management	Specialises in managing credit risk data solutions that supports portfolio insights and strategic objectives
Participant seven	Lead Strategic and Advanced Analytics	Specialises in leveraging advanced data analytics and storytelling to drive strategic business solutions.
Participant eight	Executive Data Analytics	Leader in enterprise data and analytics strategy to drive business value and innovation.
Participant nine	Executive Data Analytics	Seasoned leader with expertise in driving business growth, innovation and operational efficiency through strategic data.
Participant 10	Manager Data and Analytics	Expertise in advanced data analytics and quantitative modelling to inform business strategy and decision making

Participant	Role	Area of Specialisation
Participant 11	Manager Data and Analytics	Expertise in business performance, leveraging analytics to enhance operational efficiency
Participant 12	Head Data and Analytics	Specialises in data management and enablement in financial services with expertise in customer value optimisation
Participant 13	Lead Data Analyst	Specialises in data analytics to drive client solutions, pricing optimisation and revenue growth in financial sector.

Table 1: List of participants

3.2.4. Research instrument

The interview guide (Appendix 1) was developed based on the study's research objectives and theoretical framework. Construct validity was enhanced by aligning each interview question with key theoretical constructs underpinning the research study, such as organisational capabilities, business value, ethical governance and innovation in data monetisation (Yin, 2018). Open-ended questions were used to facilitate nuanced responses and allow for the emergence of context-specific insights (Busetto et al., 2020). Participants were encouraged to elaborate on their responses, ensuring the richness of the data.

Reliability was addressed through standardisation of the interview process. A consistent introductory script was used across all interviews to ensure uniform framing. While the semi-structured format allowed for adaptive probing, the core set of questions remained unchanged across participants, promoting comparability (Qu & Dumay, 2011).

The guide included questions designed to elicit participants' perspectives on:

- The impact and efficacy of current data monetisation models.
- Challenges and barriers to implementing data monetisation strategies.
- Innovations and emerging trends in data monetisation.
- Stakeholder engagement in data monetisation.
- The role of internal capabilities and critical success factors for adoption.
- Ethical considerations and regulatory compliance.

3.3. Data analysis strategies

Interviews were conducted using Microsoft Teams, which provided automated transcription of the discussions. The transcripts were reviewed and cleaned before analysis. Thematic analysis (Ayre and McCaffery, 2022) was conducted to identify patterns and themes with the initial coding framework derived from interview question headings to reflect the study's research objectives. The predefined categories served as a starting point for identifying themes, while subthemes were inductively through iterative reading and coding of the transcripts. This involved a structured process of coding, categorising, and analysing the data to uncover recurring themes and relationships.

3.4. Limitations

This study acknowledges certain limitations inherent to qualitative research. First, the findings may not be generalisable beyond the South African financial sector. Second, researcher subjectivity could influence data interpretation, despite measures to mitigate bias. Third, reliance on purposive sampling could limit the diversity of perspectives, as participants are selected based on predefined criteria.

3.5. Quality assurance

Several quality assurance measures were implemented to ensure the rigour and credibility of the study:

1. **Systematic data analysis:** Thematic analysis (Ayre and McCaffery, 2022) was conducted, following a structured approach to identify patterns and themes within the qualitative data. This method allowed for a nuanced and contextually rich interpretation of the findings.
2. **Reflexivity:** The researcher actively engaged in reflexivity (Jamieson et al., 2023) throughout the study to identify and mitigate any potential personal biases that might influence the analysis.

3.6. Ethical considerations

This study adhered to ethical guidelines to protect participants' rights and well-being. Consent was obtained from all participants, with assurances of confidentiality and anonymity. Participants were informed of their right to withdraw at any stage without consequence. Data was securely stored on

password-protected systems, with access limited to the researcher. Ethical approval for the study was obtained from the Human Research Ethics Committee.

CHAPTER 4: PRESENTATION OF THE FINDINGS

4.1. Introduction

Data monetisation, the strategic process of leveraging data to create economic value, is increasingly becoming a cornerstone of innovation in the global financial sector. In South Africa, where economic complexities interlink with regulatory frameworks, financial institutions are beginning to recognise data as a pivotal asset. This research aims to critically examine the current state, strategies, challenges, and potential of data monetisation within South African financial institutions. It explores the mechanisms, ethical considerations, and systemic barriers shaping data monetisation, drawing insights from qualitative interviews with key industry professionals.

4.2. Presentation of themes

4.2.1. Impact evaluation of data monetisation models

The first theme examines the impact and efficacy of current data monetisation strategies within South African financial institutions. Financial institutions can foster innovation and competitiveness by leveraging data to optimise decision-making and enhance operational efficiency. Participant five emphasised the significance of this approach: *“Without robust data monetisation frameworks, lending would be nearly impossible, which would have severe implications for the economy.”* The integration of data-driven insights and predictive models has enabled institutions to refine customer targeting and reduce costs. Participant 12 reinforced this point by using the analogy, *“Data is the new oil; like gold it holds immense value, but only if refined and utilised effectively.”*

- **Economic and operational impacts:** The economic implications of data monetisation extend beyond institutional efficiencies, supporting broader financial accessibility and stability. Data monetisation promotes financial inclusion and systemic growth by reducing lending costs and minimising default risks. Participant five highlighted, *“By leveraging AI and machine learning, financial institutions make better risk decisions, minimise major risks, and optimise processes.”* Similarly, participant 13 emphasised how institutions have

leveraged data to develop simplified, user-friendly digital solutions that enhance customer experience.

- **Internal models for data monetisation:** Internal monetisation models were identified as critical tools for driving business performance. Participants outlined three primary categories of internal models:
 1. **Sales and acquisition:** Efforts aimed at acquiring new customers through branches, call centres, text messages, emails, and digital channels.
 2. **Churn and retention:** Initiatives focused on reducing customer churn and improving retention using data insights.
 3. **Efficiency optimisation:** Strategies to increase operational efficiency and optimise business processes.

While these models show potential, they are evolving, highlighting the need for ongoing refinement and investment to maximise their impact.

4.2.2. Challenges and barriers in implementing effective data monetisation strategies

The second theme examines the challenges and barriers faced by South African financial institutions in implementing effective data monetisation strategies. The findings reveal a complex interplay of systemic, operational, cultural and leadership barriers, including poor data quality, outdated infrastructure, regulatory constraints, data silos, cultural resistance, and insufficient leadership alignment.

- **Static and reactive data monetisation practices:** A key criticism of current data monetisation practices is their static and reactive nature, which limits real-time decision-making and stifles innovation. Participant 10 described this shortcoming, stating that “*the industry predominantly operates in a reactive state, where decision-making based on data is more retrospective than proactive*”. This reactive orientation often results in missed opportunities to leverage real-time insights and dynamic strategies. Participant 10 further highlighted the limitations of traditional supervised learning models, advocating for the adoption of unsupervised machine learning to enable predictive capabilities and real-time responsiveness.

- **Data quality and validation:** One of the most pressing barriers to data monetisation is poor data quality and insufficient validation processes. Participants highlighted the risks of relying on unverified datasets and untested models, which compromise decision-making. Participant six emphasised the importance of understanding the underlying rules and purpose of a dataset to ensure its reliability. Similarly, participant three stressed the importance of data preparation: *“Without high-quality data, any model is doomed to fail. It’s essential to clean and standardise data before integrating it into any monetisation strategy.”* These insights highlight the need for rigorous data governance frameworks to ensure accuracy, standardisation, and fitness for purpose.
- **Outdated infrastructure and legacy systems:** Participants consistently identified outdated infrastructure and reliance on legacy systems as systemic barriers to effective data monetisation. Participant five described legacy systems as a *“systemic challenge”*, noting that *“legacy systems produce fragmented and inconsistent data, which hinders innovation and creates inefficiencies”*. Participant two reinforced this point, stating, *“Our reliance on legacy infrastructure limits the ability to innovate and integrate real-time analytics, which is essential for effective monetisation.”*
- **Regulatory constraints:** Regulatory frameworks emerged as a significant barrier, particularly their impact on implementing open data initiatives. Participant nine noted, *“The commercial viability of data monetisation in relation to customer data remains a challenge due to these privacy and regulatory constraints, making it difficult to establish a clear, scalable strategy for monetising customer information.”* These constraints often delay innovation and complicate cross-sector collaboration. Participant 12 mentioned Singapore as an example of regulatory balance: *“In Singapore, regulators have created a framework that encourages data sharing and collaboration while ensuring compliance. This balance enables institutions to drive innovation without compromising trust.”* These perspectives highlight the need for South African regulators to refine their frameworks to encourage innovation while maintaining consumer protection.
- **Cultural resistance:** Cultural resistance within organisations was identified as a critical barrier to the adoption of data-driven strategies. Resistance often manifests as organisational inertia, scepticism toward new technologies, and reluctance to embrace change. Participant 13 observed, *“Larger financial institutions operate like massive ships,*

slow to change course due to entrenched practices and past successes, making it challenging to adopt new business models or strategies. They often hesitate to explore uncharted territory, driven by a cautious approach and a fear of failure.” Participants emphasised that overcoming cultural resistance requires leadership to actively promote innovation, champion data strategies, and model behaviours aligned with a data-driven ethos.

- **Data silos and fragmentation:** Data silos and fragmented systems were frequently cited as barriers that limit the effectiveness of data monetisation strategies. Participant seven observed the following operation inefficiencies: *“In many organisations, different departments operate independently, leading to duplication of data efforts and missed opportunities for integration.”* This was confirmed by participant four, who stated, *“In financial institutions, data often operates in silos, stored across multiple systems or departments, which complicates integration and effective utilisation.”* Participants stressed the importance of technological solutions and a collaborative culture to address data silos and improve cross-departmental integration.
- **Low data literacy and workforce skills:** Participants highlighted low data literacy and insufficient workforce skills as critical challenges. Participant five observed, *“Basic data literacy remains low in South Africa’s banking sector, undermining operational efficiency and decision-making.”* Participant six further mentioned that *“short-term certifications often result in MI analysts being misclassified as data scientists, despite their limited expertise. While continuous upskilling is imperative in the rapidly evolving data sector, South Africa remains deficient in providing access to advanced training programmes.”* These perspectives highlight the importance of comprehensive workforce development initiatives to build the technical capacity required for successful data monetisation.

4.2.3. Role of internal capabilities in data monetisation

The third theme explores how internal resources and capabilities influence the success of data monetisation strategies within South African financial institutions. Internal capabilities play a pivotal role in the success of data monetisation strategies, serving as the foundation for extracting value from data and driving competitive advantage. These capabilities can be categorised into three

interdependent pillars: Leadership, technical infrastructure, and human expertise, all of which must be aligned with an organisation's strategic goals to realise the full potential of data monetisation.

- **Leadership commitment:** Strong leadership is fundamental to any successful data monetisation initiative. Executive buy-in, particularly from the CEO, is crucial for aligning data strategies with the broader organisational vision. Participant nine highlighted, *“If the CEO is committed to data monetisation as a key strategy for improving the balance sheet, it is crucial that they champion and communicate this vision consistently across the organisation.”* A CEO's involvement ensures that data-driven initiatives are prioritised and carry the weight needed for organisation-wide adoption. This leadership commitment not only drives alignment but also inspires confidence among employees to embrace change. Without such top-down support, initiatives risk stagnating at the operational level.
- **Technical infrastructure:** The effectiveness of data monetisation hinges on the robustness of the organisation's technical infrastructure. This extends beyond traditional data platforms to include advanced technologies such as AI, machine learning (ML), and cloud-based systems. As participant nine observed, *“Scalable data platforms are critical, meaning that when data storage capacity is reached, new resources should be easily added without extensive hardware investments.”* Cloud-based solutions offer rapid scalability, enabling organisations to manage growing data demands efficiently. However, as participant four noted, the principle of *“garbage in, garbage out”* highlights the importance of investing in high-quality data and advanced tools to ensure that analytical outputs are both reliable and actionable.
- **Human expertise:** A skilled workforce is indispensable for leveraging advanced data platforms and implementing data monetisation frameworks. However, as participant two pointed out, *“Failing to adequately prepare and train employees for new tools and systems can result in poor adoption and ineffective use of technology, ultimately leading to missed opportunities.”* Continuous upskilling and professional development are critical to ensure that employees remain adept at using cutting-edge tools and methodologies.
- **Organisational integration:** Participant eight highlighted, *“Data is not an isolated function; it's intertwined with every part of the organisation.”* For data monetisation to succeed, data must be integrated into every facet of the organisation's workflows. Participant eight emphasised, *“Front-line employees who interact with customers need to*

recognise that the information they capture directly affects the success of downstream data models and monetisation efforts.” Effective change management strategies, combined with targeted training programmes, are essential for embedding data-driven decision-making as a core component of organisational culture.

4.2.4. Stakeholder engagement in data monetisation

The fourth theme explores the critical role of stakeholder engagement in data monetisation, highlighting the importance of both internal and external stakeholders. Internal stakeholders, including leadership, employees and governance teams, drive alignment, execution, and compliance. External stakeholders, such as customers, regulators and partners, ensure trust, regulatory adherence, and ecosystem collaboration. The findings emphasise the necessity of fostering trust, alignment, and proactive engagement across all stakeholder groups to unlock the full potential of data monetisation.

- **Strategic leadership and executive alignment:** Effective stakeholder engagement begins with strategic leadership and alignment at the executive level. Leadership support is essential for building organisational trust and integrating data monetisation initiatives into the overall strategy. Participant three highlighted the significance of elevating analytics leadership to strategic decision-making levels. This alignment ensures that data-related challenges, such as revenue generation or cost optimisation, are directly linked to business objectives. Similarly, participant one stressed, *“Engagement from top management is critical, as meaningful progress is impossible without their buy-in.”* Without this high-level support, initiatives risk stagnating or failing to align with broader organisational goals, undermining their potential impact.
- **Customer trust and transparency:** Customers are the cornerstone of data monetisation, as they are the primary owners of the data. Building trust and fostering transparency are critical to encouraging customer participation and avoiding erosion of confidence. Participant nine emphasised, *“Customers are the most critical stakeholders because they own the data. Trust and consent are paramount, as any mishandling can erode confidence and lead to customer attrition.”* Transparency in data policies, combined with mechanisms such as incentivising customers for data sharing, is essential to enhance engagement. Participant six expanded on this, noting, *“Clear communication and customer consent are*

essential to align ethical standards with regulatory frameworks.” The success of data monetisation is thus contingent upon organisations’ ability to establish and maintain transparent relationships with their customers.

- **Regulatory engagement and compliance:** Engaging with regulatory stakeholders is imperative in a data-driven environment where compliance and trust are paramount. Proactive engagement with regulators ensures that organisations align their data monetisation strategies with current and emerging regulatory frameworks. Participant two emphasised the importance of *“involving regulators early in the process to address potential challenges and foster alignment with business objectives”*. Similarly, participant five noted, *“Maintaining strong, transparent relationships with regulators is critical, particularly in highly regulated contexts where approval of data models is a prerequisite for implementation.”* Despite these efforts, participants acknowledged a persistent challenge: Regulatory frameworks often lag technological advancements. Organisations must, therefore, anticipate regulatory shifts and integrate compliance mechanisms into their strategies to maintain operational integrity and trust.
- **Internal stakeholder engagement and change management:** Internally, stakeholder engagement plays a vital role in operationalising data monetisation strategies. Employees are not only implementers, but also custodians of ethical and compliant practices. Participant four pointed out that *“effective change management reduces resistance and secures alignment across the organisation”*. This includes fostering a culture where employees understand the strategic importance of data monetisation and their role in its success. Participant nine highlighted the need for *“change management, as it is essential to ensure employees understand their roles and the ethical boundaries they must operate within”*. However, a significant challenge lies in sustaining long-term engagement and addressing cultural resistance within the organisation. Strategic change management initiatives must, therefore, balance immediate goals with long-term cultural transformation to fully embed data-driven practices.

4.2.5. Ethical and regulatory considerations in data monetisation

The fifth theme explores the ethical and regulatory considerations in data monetisation, focusing on the interplay between internal and external stakeholders. Internal stakeholders, such as leadership, employees and governance teams, drive ethical practices, compliance, and operational execution. External stakeholders, including customers, regulators and partners, ensure trust, regulatory adherence, and ecosystem alignment. The findings highlight the importance of fostering transparency, accountability, and collaboration to navigate the complexities of legal frameworks and ethical responsibilities in data-driven strategies

- **Compliance with legal and regulatory frameworks:** Adhering to legal and regulatory frameworks is the cornerstone of responsible data monetisation. Regulations such as POPIA govern how data is collected, processed, and shared, ensuring the protection of sensitive information. Participant three expressed, *“Robust data governance, including data encryption, anonymisation, and obtaining explicit consent, is essential to comply with POPIA and protect sensitive customer data.”* Participant six supported this perspective, noting, *“Financial institutions must actively participate in regulatory discussions to shape regulations that balance customer protection with business profitability.”* However, participants also recognised the challenges posed by evolving regulations, particularly as financial institutions navigate complex and fast-changing technological landscapes. Participant eight noted, *“While regions like the European Union are advancing formal ethical AI policies, other jurisdictions, including Africa, are still in early stages.”* This highlights the importance of anticipating regulatory changes and integrating adaptive governance mechanisms.
- **Ethical data usage and fairness:** Embedding ethical principles into data practices is critical to maintaining fairness, inclusivity, and societal trust. Ethical concerns arise not only in how data is collected, but also in how it is utilised to influence decisions such as credit scoring or targeted marketing. Participant nine warned of the dangers of biases in machine learning models: *“Data scientists must eliminate biases to prevent discrimination, particularly in sensitive areas like credit scoring.”* Similarly, participant 10 emphasised, *“AI models must be free of inherent biases that could lead to unethical decisions, such as limiting access to financial products based on arbitrary criteria.”* Participant 10 reinforced

the importance of prioritising the customer in all data-related activities, noting, *“Ethical data monetisation ensures services remain affordable and inclusive, putting the customer first.”* Institutions are encouraged to develop internal frameworks for responsible AI and ethical governance.

- **Building trust through transparency and accountability:** Transparency and accountability are fundamental to fostering trust in data monetisation initiatives. Customers must clearly understand how their data is used, and institutions must demonstrate accountability in their practices. Participant nine highlighted the importance of *“obtaining explicit customer consent and ensuring customers benefit directly or indirectly from data monetisation efforts”*. Participants stressed that customers should retain data ownership, with financial institutions acting as custodians rather than proprietors. Participant five emphasised that *“operating on the edge of ethical boundaries poses significant reputational risks, undermining customer trust and long-term viability”*. Institutions should implement oversight mechanisms such as ethical committees and structured “check and challenge” frameworks to mitigate such risks.

Furthermore, transparency must extend beyond customer interactions to include external stakeholders such as regulators and partners. Participant eight highlighted that *“transparent communication of data usage policies ensures alignment with regulatory expectations while reinforcing customer confidence”*.

4.2.6. Solutions to overcome challenges and adopt data monetisation strategies

The sixth theme examines the strategies and solutions necessary to address the challenges hindering the effective implementation of data monetisation in financial institutions. The findings reveal a multi-faceted approach focused on improving organisational capabilities, fostering collaboration, enhancing technological infrastructure, and integrating ethical and regulatory compliance into data practices. By addressing these areas, financial institutions can overcome systemic barriers and unlock the full potential of data monetisation

- **Modernising infrastructure and overcoming legacy systems:** Outdated systems and legacy infrastructure present significant barriers to data monetisation. Participant two expressed that *“integration issues between outdated and modern systems hinder efficiency*

and create missed opportunities for data monetisation". Participant 11 agreed, suggesting that *"leveraging APIs and modern tools like data catalogues enables disparate systems to connect seamlessly, creating a unified and efficient ecosystem"*. These highlight the need for financial institutions to modernise infrastructure to ensure scalability and agility.

- **Establishing robust governance and addressing data silos:** Data silos and fragmentation restrict the ability to create a unified view of customer data, limiting actionable insights. Participant three highlighted the critical need for governance, stating that *"source-to-target mapping and centralised repositories are essential to improve data accessibility and enable advanced analytics"*. Similarly, participant 10 emphasised that *"a synchronised and centralised approach eliminates inefficiencies and ensures that data flows seamlessly across departments"*. While consensus exists on the importance of governance frameworks, there is divergence regarding whether centralisation or decentralisation offers the most effective solution, suggesting that institutional structures and operational needs should guide the choice.
- **Enhancing workforce skills and data literacy:** Low data literacy and insufficient workforce skills are critical barriers to effective data monetisation. Participant four outlined the success of a data literacy programme categorising employees into foundational, consumer, power, and executive levels, enabling tailored upskilling. Participant three noted, *"Building a data-literate workforce ensures better collaboration between technical and business teams."* Participant six supported this view, emphasising that *"data must be treated as an asset, starting at the executive level. Without senior leadership adopting this perspective, upskilling efforts at lower levels will lack strategic alignment."*
- **Navigating regulatory constraints and embedding ethical compliance:** Regulatory frameworks such as POPIA create both opportunities and constraints in data monetisation. Participant nine stressed that *"transparent consent frameworks and privacy-by-design principles are essential for aligning monetisation strategies with ethical standards and compliance"*. Participant three echoed this, highlighting the importance of *"anonymising data and ensuring all stakeholders understand their regulatory obligations to build trust and mitigate risks"*. Participant eight, meanwhile, pointed out the challenges of navigating underdeveloped ethical AI policies, stating that *"while internal frameworks provide*

guidance, the absence of enforceable national policies complicates compliance". This divergence illustrates the need for institutions to balance adherence to existing laws with proactive engagement in shaping future regulatory frameworks, ensuring alignment with both local and international standards.

- **Fostering a data-driven and agile culture:** Cultural resistance to innovation often undermines the adoption of data monetisation practices. Participant 13 noted that *"large institutions operate like big ships, resistant to change and slow to adopt new strategies due to their risk-averse nature"*. Participant six, meanwhile, emphasised that leadership plays a critical role in overcoming cultural inertia, explaining that *"visible advocacy from executives, combined with cross-departmental collaboration, eliminates siloed thinking and fosters innovation"*. While both perspectives align on the importance of leadership, participant eight argued that *"demonstrating quick wins through small-scale pilots is more effective than relying solely on leadership advocacy"*. This suggests that combining leadership-driven strategies with incremental, outcome-based initiatives may offer the most effective pathway to cultural transformation.
- **Transitioning from static to proactive data monetisation:** Static and reactive practices hinder innovation in data monetisation. Participant eight highlighted the need for actionable, real-time data. Participant four further emphasised the role of advanced analytics, noting that *"predictive and prescriptive models offer opportunities to address challenges proactively, moving beyond descriptive insights"*. Participant six added, *"Treating data as an asset from the outset ensures that monetisation efforts are proactive and integrated into strategic initiatives."* Advanced analytics enable institutions to unlock the full potential of data monetisation. There was strong agreement among participants that investing in advanced analytics capabilities is critical for transitioning from reactive to proactive data strategies, driving innovation and operational efficiency.
- **Improving collaboration between business and technical teams:** Collaboration between business and technical teams is vital for aligning data strategies with organisational goals. Participant 11 indicated, *"Business teams must actively define data requirements, while governance frameworks ensure alignment with ethical and operational standards."* Participant seven noted that *"broad consultation across teams generates realistic and effective solutions, fostering engagement and ownership."* However, participant three

pointed out a common pitfall, stating that “*technical teams often work in isolation, leading to gaps in understanding business needs and priorities*”. This highlights the need for joint accountability and structured collaboration frameworks to bridge gaps between business and technical functions, ensuring cohesive execution of data strategies.

4.2.7. Innovations and the future of data monetisation in South Africa’s financial sector

The seventh theme examines the innovations driving the future of data monetisation in South Africa’s financial sector. Key advancements include hyper-personalisation through AI and ML, open banking frameworks underpinned by API monetisation, and the evolving expectations of a digitally native customer base. By leveraging advanced technologies and creating seamless, data-driven ecosystems, financial institutions can deliver personalised solutions, foster innovation, and remain competitive in an increasingly dynamic market.

- **Hyper-personalisation enabled by AI and ML:** Hyper-personalisation, driven by AI and ML, represents a transformative innovation within the financial services sector. Participant three explained, “*AI and machine learning enable banks to understand customers at an individual level, or the ‘segment of one’, tailoring offerings such as pre-approved loans based on financial behaviour.*” This approach allows financial institutions to deliver highly relevant, individualised solutions, thereby increasing customer engagement and loyalty. Participant five reinforced this view, stressing that “*with well-organised data, AI can generate real-time insights, driving faster decision-making and enhancing customer experiences*”.

These perspectives highlight the dual requirements for achieving effective hyper-personalisation: Advanced AI capabilities and a robust, clean, and accessible data infrastructure. Participant 10 expanded on this argument by emphasising the importance of centralised data systems to eliminate silos and enable the seamless integration of insights across departments. Together, these contributions affirm the need to not only leverage AI but also invest in governance frameworks and data quality to maximise the potential of hyper-personalisation. This convergence reflects a shared understanding among

participants that the future of financial services lies in the integration of technology and data to deliver bespoke customer experiences.

- **Open banking and API monetisation:** Open banking frameworks, underpinned by API monetisation, are positioned to redefine revenue generation and foster innovation in financial services. Participant nine observed, *“By sharing aggregated data with third parties like fintechs and retailers, banks can foster innovation while creating new income streams.”* This aligns with participant six’s assertion that *“the sooner banks open access to data, particularly on open-source platforms, the better positioned they’ll be to drive innovation in customer interactions”*. Both perspectives emphasise the importance of secure, API-driven ecosystems in enabling collaborations that were previously unattainable. These systems allow third parties to leverage aggregated financial data and create opportunities for co-innovation and mutual value creation. Collectively, these insights articulate a roadmap for transforming open banking into a platform for innovation, collaboration, and enhanced customer experiences.
- **Evolving customer expectations:** The shift toward a digitally native customer base is reshaping financial institutions’ operational strategies. Participant two highlighted, *“The market is increasingly driven by a generation accustomed to digital platforms, requiring banks to adapt to their preferences and offer virtual, seamless experiences.”* Participant three expanded on this argument by emphasising the role of real-time data in enhancing customer interactions, stating that *“real-time data can enhance personalised customer interactions, such as suggesting rewards programs immediately after a transactional event”*. These insights point to the need to create seamless, data-driven ecosystems that enable real-time engagement and innovation.

4.3. Discussion

This research critically explored the business models and strategies employed for data monetisation within South Africa’s financial sector, highlighting prevailing practices, systemic barriers, and emerging opportunities. While the findings demonstrate significant efforts to integrate data monetisation into institutional operations, they reveal important gaps in scalability, data governance, and organisational culture that must be addressed to unlock its full potential.

4.3.1. Impact evaluation of data monetisation models

The study finds that South African Financial institutions predominantly adopt internal data monetisation strategies aimed at enhancing operational efficiency mitigating risk and improving customer acquisition. This trend aligns with global practices, where initial efforts prioritise internal cost reductions and operational efficiencies before progressing to external revenue generating models (Ofulue & Benyoucef, 2022; Wixom & Ross, 2018). These efforts are largely characterised as “*static and reactive*” reflecting limited maturity in the strategic deployment of data for dynamic value creation (Moyikwa, 2023).

From the perspective of RBV, this stagnation highlights the inability to convert raw data into rare, valuable and non-substitutable capabilities that enable sustained competitive advantage (Barney, 1991). Financial institutions must move beyond data accumulation to the creation of data monetisation models that are embedded, dynamic and strategically aligned. Limited scalability and resource integration in the financial sector signal missed opportunities to leverage data to generate revenue, as suggested by Grassi et al. (2022), who advocate for embedding data strategy within broader strategic objectives.

4.3.2. Challenges and barriers in implementing effective data monetisation strategies

Implementation challenges remain significant, comprising data silos, legacy infrastructure, organisational inertia, skills shortage and regulatory constraints. The challenges are consistent with international patterns in digital transformation (Grassi et al., 2022; Parvinen et al., 2020).

DOI theory (Dearing & Cox, 2018) further contextualises the challenges identified, particularly cultural resistance and technological readiness. Despite recognising data as a strategic asset, data monetisation efforts have not progressed as anticipated due to structural and cultural barriers. These barriers reflect high perceived complexity and low compatibility with existing systems and culture. Such factors hinder the adoption of new technologies and practices, explaining the relatively slow adoption or uptake of advanced monetisation models.

In examining challenges through the lens of DOI, two critical elements of social system norms and tolerance of deviance emerge.

- **Social system norms** refer to the established behaviours and expectations that guide individuals within a system, shaping their openness to new ideas. Participants highlighted that South African financial institution remains constrained by entrenched social system norm that prioritise legacy operational structures and systems, risk aversion, regulatory compliance. Financial institutions continue to operate in siloed framework where data is fragmented across departments and inherent risk aversion and outdated infrastructure fosters the culture of proactive analytics than real time data driven decision making. Participant five remarked, *“Legacy systems produce fragmented and inconsistent data, which hinders innovation and creates inefficiencies.”* The risk aversion culture limits the ability of financial institutions to capture market opportunities utilising data. Lack of strategic positioning of data within organisation structure relegate data function to operational roles rather than being integrated into executive level decision making process. Participant three highlighted *“Historically, data has not always been positioned at the strategic level; it has often been relegated to lower tiers of the organisation”*. The structural misalignment diminishes the influence of data functions and limits data driven innovations. Regulatory constraints further contribute to cautious approach in adopting effective data monetisation strategies due to consumer privacy concerns.
- **Tolerance of deviancy** relates to the degree to which a social system permits behaviours that diverge from established norm. Larger financial institution often exhibits low tolerance of deviance due to their size and deeply entrenched practices. Participant 13 explained, *“Major banks face challenges due to their scale. The problem with larger banks is that they operate like large ships, where making any significant changes is a slow process.”* Their cautious approach and reluctance to explore uncharted territories hinder the diffusion of innovative practices within the financial sector as these banks are traditionally risk-averse and reliant on established models that have previously ensured success.

4.3.3. Stakeholder engagement

The study illustrates that stakeholder's engagement is not peripheral but central to the effectiveness of data monetisation strategies. Maintaining trust with customers ensuring compliance with regulators and achieving internal alignment are all critical elements of stakeholder management (Freeman, 1984). Proactive stakeholder engagement, particularly with regulators not only mitigates risk but also creates opportunities for collaborative innovation in evolving regulatory environments.

4.3.4. Emerging opportunities

Emerging opportunities such as hyper-personalisation, open banking, and API monetisation offer promising pathways for innovation. Participant three explained, *“In financial institutions, hyper-personalisation could involve integrating behavioural economics with customer insights to predict and recommend the next best product or service for a specific customer.”* Grassi et al. (2022) corroborate this, demonstrating how personalisation enhances customer satisfaction and revenue growth.

Open banking frameworks and API monetisation enable collaboration and the creation of new revenue streams by facilitating data-sharing partnerships. Participant nine noted, *“By sharing aggregated data with third parties like fintechs and retailers, banks can foster innovation while creating new income streams.”* However, these opportunities require foundational improvements, including infrastructure modernisation, enhanced data quality, and workforce upskilling.

4.3.5. Ethical and stakeholder considerations

Ethical governance remains a cornerstone of effective data monetisation strategies. Participants highlighted the risks of algorithmic bias and the need for transparency in AI-driven decision-making. Participant nine declared, *“AI models must be free of inherent biases that could lead to unethical decisions, such as limiting access to financial products based on illogical criteria.”* Saltz and Dewar (2019) reinforce the importance of fairness and transparency in maintaining customer trust and regulatory compliance.

Stakeholder engagement, encompassing regulators, employees and customers, is equally critical. Proactive collaboration ensures alignment with legal frameworks and mitigates cultural resistance within organisations. Participant four noted that “*effective change management reduces resistance and secures alignment across the organisation*”, a sentiment supported in Freeman’s (1984) Stakeholder Theory.

4.4. Conclusion on discussion

Existing data monetisation models in South Africa’s financial sector have proven impactful in internal operational efficiency and customer retention but there is limited or no clear case studies of successful external data monetisation initiatives. While these existing internal models lay a strong foundation, they require significant enhancements to achieve strategic integration of leveraging data to generate new revenue streams. The transition from reactive to proactive data monetisation necessitates advanced technologies such as AI and open banking frameworks. Leadership commitment, ethical governance, adoption of innovative data monetisation models and cross-sector collaboration are essential to addressing systemic barriers. By aligning technological, organisational, and ethical dimensions, financial institutions can unlock data’s transformative potential as a strategic asset, driving sustainable growth and competitiveness.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter consolidates the findings of the study, offering a conclusive overview of its methodology, results, and implications. Recommendations for practical applications and future research are presented, with an emphasis on addressing systemic challenges and leveraging opportunities for data monetisation within the South African financial sector.

5.2. Conclusions

5.2.1. Conclusion pertaining to findings

The study sought to explore data monetisation in the South African financial sector, with a particular focus on business models and strategies for generating revenue from data assets. Guided by interpretivist paradigm, qualitative interview provides in-depth insights into the challenges and opportunities associated with leveraging data for financial gain

The findings reveal that South African financial institutions face significant systemic and organisational barriers to effective data monetisation. Outdated infrastructure, fragmented data silos, low levels of data literacy, and cultural resistance to change are among the primary challenges identified. Despite these barriers, leadership commitment, stakeholder engagement, and technical capabilities emerged as critical enablers for successful data monetisation.

Currently South Africa financial institutions predominantly employ internal monetisation models which include:

- **Operational efficiency models**, whereby data is leveraged to optimise internal process, reduce costs and enhance strategic decision making.
- **Customer analytics models**, which utilise transactional and behavioural data to improve cross-selling, upselling and targeted marketing initiatives
- **Risk Management models**, involving predictive analytics for credit scoring, fraud detection and regulatory compliance

Opportunities such as hyper-personalisation, open banking, and API monetisation offer pathways for innovation and growth. However, these require foundational improvements, including investments in scalable infrastructure, robust data quality frameworks, and ethical governance mechanisms. Additionally, assessing the impact of data monetisation on financial performance and customer experience remains an area in need of further development. The findings highlight that, while the potential for data monetisation is recognised, fully realising it will depend on overcoming these systemic challenges and cultivating a data-driven organisational culture.

5.3. Recommendations

5.3.1. Recommendations for practice

- **Modernising infrastructure:** Financial institutions must prioritise investment in scalable, interoperable data platforms to enable real-time analytics and support advanced technologies such as AI and ML. Upgrading infrastructure is essential for transitioning from descriptive to predictive and prescriptive analytics, improving operational efficiency and driving innovation.
- **Leadership advocacy and workforce upskilling:** Executive leadership should actively promote data monetisation initiatives, integrating these into organisational strategies to foster a data-driven culture. At the same time, institutions should introduce comprehensive training programmes to enhance data literacy and technical expertise at all workforce levels. This dual approach would equip employees to leverage data effectively and reduce organisational resistance to change.
- **Data quality initiatives and outcome measurement frameworks:** Institutions should establish robust frameworks to manage and improve data quality, ensuring accuracy, consistency, and reliability. Additionally, implementing structured frameworks to measure financial gains and enhancements in customer experience (e.g., revenue growth, cost savings, and satisfaction rates) would allow organisations to assess and refine their data monetisation strategies effectively.

5.3.2. Recommendation for further research

The study is limited by its qualitative scope and focus on financial institutions operating with South Africa restricting generalisability. Future research should adopt an intricate approach to deepen understanding and improve the effectiveness of data monetisation strategies in financial institutions through experimentation. Quantitative validation is essential to objectively measure the financial and experiential outcomes of data monetisation practices. Future studies can enhance the validity and generalisability of findings by employing methodologies such as surveys, financial performance metrics, and customer satisfaction indices, enabling data-driven refinement of monetisation initiatives.

Broader stakeholder engagement is necessary to explore the roles of fintech and third-party providers in advancing collaborative data monetisation efforts. Future research should focus on how these stakeholders contribute to innovation, resource sharing, and ecosystem-wide value creation, addressing systemic barriers and enabling the development of sustainable and scalable data monetisation models.

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APPENDIX A: STRATEGIES FOR DATA MONETISATION

Table 2: Data Monetisation strategies

Data Monetisation Strategy	Short Description
1. Asset sale	Economic benefits result from additional revenue based on the provision/sale of data or from granted access to (own) data.
2. Business process improvement	Value from data is created through improvement or optimisation of internal business processes.
3. Product/service innovation	Extending the existing range of offerings to customers with new products or services based on data.
4. Product/service optimisation	Optimising existing products or services by utilising data.
5. Data insights sale	Selling information/knowledge derived through any processed step of insights making (analytics, visualisation, etc.) based on data.
6. Contextualisation	Using context-based data to generate economic benefits.
7. Individualisation	Customer-linked data is used to individualise certain aspects of a company's value proposition on an individual basis.
8. Build and strengthen customer relationship	Data is leveraged to create and maintain lasting relationships with customers.
9. Strategically opening data	Opening (internal) data to business partners or third parties for value co-creation, increased visibility or other advantages.
10. Data enrichment	Data enrichment means any aggregation of internal or external data sources and further processes of transformation or cleaning of data for economic benefits.
11. Data bartering	Data bartering occurs when (own) data is exchanged in return for valuable assets such as tools, services or data.
12. Data privacy and control guarantee	Data that is derived from the interaction with customers is monetised by guaranteeing not using them or providing control over the data to the customer.

Note: Adapted from Baecker et al. (2020).

APPENDIX B: ARCHETYPES FOR DATA-DRIVEN BUSINESS MODELS IN INDUSTRY 4.0

Table 3: Archetypes for Data-driven Business Models in Industry 4.0

Archetype	Value Creation	Value Offer	Value Capture
Platform-based business models	Data collection and analysis across entire value chains or ecosystems, serving multiple customers.	Sharing data allows multiple stakeholders to optimise existing or uncover unknown potentials.	Licence model, subscription model, pay-per-use
Use-based business models	Data collection and analysis is conducted constantly, but presentation and evaluation are specific.	Optimisation and insights regarding existing processes when needed for the customer.	Pay-per-use, pay-per-feature
Outcome-based business models	Data collection and analysis that is combined with specific, individual services and knowledge.	Services targeted for specific purposes, such as reducing downtime or improving quality, combined with services.	Pay-per-output, pay for guaranteed results

Note: Adapted from Müller & Buliga (2019).

APPENDIX C: RESEARCH INSTRUMENT

PARTICIPANT INFORMATION SHEET

Dear Sir / Madam

My name is Serole Onismus Kgadima. I am a Masters student in Business Administration at the University of the Witwatersrand, Johannesburg. My supervisor is Prof. Gregory Lee, and I am conducting a research study about data monetisation. The study title is Data Monetisation in the South African Financial Sector: Exploration of Business Models and Strategies for Revenue Generation from Data Assets.

I am pleased to invite you to participate in our research study. The interview will last approximately 25 to 30 minutes and can be conducted at your convenience, either online or in person.

With your consent, I would like to audio/video record our interview to ensure the accuracy and integrity of the information collected. The recordings will be securely stored on a password-protected computer and in a password-protected folder for three years, after which they will be permanently deleted. Access to this data will be exclusively limited to Serole Onismus Kgadima. The recording will be used solely for this research and not for other purposes without your explicit consent. Please review and sign the attached consent form to proceed.

If you have any questions during or after this research study, please contact me at 2011231@students.wits.ac.za, or my supervisor can also be contacted at gregory.lee@wits.ac.za. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical) by telephone at +27(0) 11 717 1408 or email hrecnon-medical@wits.ac.za.

Kind regards,

Serole Onismus Kgadima

CONSENT FORM FOR PARTICIPATION IN THE RESEARCH STUDY.

I, _____, am honoured to be invited to participate in the above-mentioned research study. I understand that my participation is voluntary and that I can withdraw at any time without giving any reason or consequence.

Please read the following statements and circle 'Yes' or 'No' as your response:

1. The research study was explained to me, and I fully understand what this study involves.: **Yes / No**
2. I understand that I can volunteer to take part in the study and withdraw at any time without penalty.: **Yes / No**
3. I agree that the interview/focus group may be audio recorded.: **Yes / No**
4. I agree that the researcher may use direct quotations from my interview/focus group in publications such as research reports, manuscripts, or book chapters.: **Yes / No**
5. I agree that my participation will remain anonymous, and my identity will not be disclosed in any outputs.: **Yes / No**
6. I agree that other researchers may use the anonymised information I provide (subject to their ethical approvals), but my identity will not be disclosed or passed on.: **Yes / No**

Participant's Signature: _____

Print Name: _____

Date: _____

Researcher's Signature: _____

Print Name: _____

Date: _____

SEMI-STRUCTURED INTERVIEW GUIDE

Introduction

Thank you for agreeing to participate in this interview. Your expertise is crucial to our research on data monetisation models within the South African financial sector. This interview should take approximately 30-60 minutes. Please share your insights and experiences related to the broader industry and theoretical concepts.

Questions

1. **Impact evaluation of data monetisation models:** How fundamentally do the existing data monetisation models influence the financial landscape in South Africa, and what improvements are conceivable?
2. **Challenges and solutions in data monetisation:** What are the predominant barriers to effective data monetisation in the South African financial sector, and how could overcoming these barriers transform the industry?
3. **Innovations in data monetisation strategies:** What novel strategies and business models could disrupt traditional data monetisation practices in South African financial institutions, and why might they be successful?
4. **Role of internal capabilities in data monetisation:** To what extent do internal resources and capabilities determine the success of data monetisation efforts, and how can institutions enhance these assets?
5. **Critical success factors for new monetisation Strategies:** What critical elements must be in place to adopt innovative data monetisation strategies within financial institutions?
6. **Enhancing stakeholder engagement in data monetisation:** How critical is stakeholder engagement to the success of data monetisation strategies, and what methods maximise this involvement?
7. **Ethical considerations in data monetisation:** How can financial institutions ensure their data monetisation strategies comply with and champion ethical standards and privacy regulations?

8. **Actionable steps to address monetisation challenges:** What actionable steps can financial institutions undertake to navigate and overcome the challenges of monetising data assets?
9. **Forecasting the evolution of data monetisation in the South African financial sector:** What trends are expected to shape the future of data monetisation in the South African financial sector, and how can institutions proactively prepare for these changes?

Thank you for your time and insights. Your contributions are invaluable for enhancing our understanding of data monetisation in the financial sector. If you have any additional thoughts or observations, please share them.