

AFRICA UNIVERSITY  
(A United Methodist-Related Institution)

ADOPTION OF BIG DATA ANALYTICS FOR ZIMPAPERS  
TELEVISION NETWORK BROADCAST PROGRAMMING

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
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## Abstract

The aim of the study was to assess the level of BDA adoption in the Zimpapers Television Network, to determine the factors influencing BDA adoption levels, and to provide suggestions on how to improve and expedite the BDA integration in the programming activities of ZTN. An explanatory convergent mixed-methods design was used in the study to evaluate the extent to which BDA was adopted in ZTN, with a sample size of 50 respondents selected through a targeted sampling frame of all ZTN employees, using a structured questionnaire and a semi-structured interview schedule to gather both quantitative and qualitative data. Thematic analysis was used to analyze the qualitative findings, with Braun & Clarke's six-step thematic analysis framework being used to analyze the qualitative findings from key informant interviews with 12 respondents. The findings showed that 62% of the respondents identified the BDA activities in ZTN as being in the Data Processing & Management Information Systems stage of the six stages in the technology maturity continuum. The ZTN was classified as a Late Majority adopter, characterized by partial departmental adoption owing to structural unpreparedness. The main enabling factors were Top Management Support (mean = 3.74), Competitive Pressure (mean = 3.68), and Perceived Usefulness (mean = 3.66), whereas the most significant barriers were Facilitating Conditions (mean = 2.58), Training and Capacity Building (mean = 2.60), and ICT Infrastructure Reliability (mean = 2.72). The operational challenges facing ZTN were a lack of adequate ICT infrastructure (78%), skills gaps (72%), high costs of implementation (68%), and poor data quality (56%), which collectively formed a compound structural barrier that characterized the intent-capability gap for ZTN. The research recommends a phased approach to a structural investment plan by ZTN in the areas of ICT infrastructure, multi-level capacity building, formalization of data governance, establishment of a dedicated analytics unit, and the integration of BDA into performance management systems. A further recommendation is the development of a broadcasting data analytics governance framework by the Broadcasting Authority of Zimbabwe and the introduction of fiscal incentives by the relevant government agencies.

**Keywords:** Big Data Analytics, technology adoption, broadcasting, Zimpapers Television Network

## Declaration Page

I declare that this dissertation is my original work except where sources have been cited and acknowledged. The work has never been submitted, nor will it ever be submitted to another university for the award of a degree.

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## **Dedication**

This research is dedicated to those in the data analytics field in Zimbabwe and the Africa University EMBA MAR25 cohort. To my family and friends for their assistance, support, encouragement and patience during the entire period of my graduate study.

## **List of Acronyms and Abbreviations**

BAZ Broadcasting Authority of Zimbabwe

BDA Big Data Analytics

POTRAZ Postal & Telecommunications Regulatory Authority of Zimbabwe

ZTN Zimbabwe Television Network.

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## **CHAPTER 1: INTRODUCTION**

### **1.1 Introduction**

This chapter introduces the study on the adoption of Big Data Analytics (BDA) within Zimbabwe's broadcasting sector, with a particular focus on Zimpapers Television Network (ZTN). The chapter outlines the background of the study, identifies the research problem, and presents the objectives, research questions, assumptions, and significance of the research. It also delineates the study's scope, delimitations, and limitations.

### **1.2 Background of the Study**

Big Data Analytics (BDA) refers to the process of collecting, processing, and analyzing large volumes of complex and dynamic unstructured data using computational techniques to generate patterns, predictions, and insights that can be used to make organizational decisions (Gandomi & Haider, 2015; McAfee & Brynjolfsson, 2012). The conceptualization of big data was first conceptualized by Laney (2001) in the form of the three-dimensional representation of big data, also referred to as the 3Vs: Volume (the sheer volume of unstructured data generated through digital interactions), Velocity (the rate at which the generated data can be processed), and Variety (the different forms in which unstructured data can take) (Laney, 2001). Later, other authors have added other Vs to the conceptualization, including Veracity (the quality of the generated data) (Gandomi & Haider, 2015) and Value (the idea that raw volume of unstructured data can only have economic value when transformed into usable information) (IBM, 2013). There have been numerous theoretical debates in the field of BDA. For example, there have been debates over whether BDA represents a new paradigm in organizational decision-making

or an extension of existing management information systems (MIS) (McAfee & Brynjolfsson, 2012; Kitchin, 2014). There have also been debates over the implications of BDA in the collection of audience data under new regulations, such as the Cyber and Data Protection Act in Zimbabwe (2021) (Masinde, 2025).

BDA is significant because it helps organizations make a transition from retrospective and experience-based decision-making to prospective and evidence-based decision-making based on empirical evidence (McAfee & Brynjolfsson, 2012). In the broadcasting industry, the importance of BDA can be seen in three key areas that are critical to business strategies. In the first place, BDA helps in audience intelligence. BDA helps in understanding audience preferences, audience engagement, and audience demographics to a level that cannot be achieved through traditional audience surveys. This helps in providing the audience with the right type of content that can meet their needs to a higher degree of precision (Veglis, 2022; Murschetz & Schlütz, 2018). Secondly, BDA helps in commercial optimization. BDA helps in targeting advertising audiences, setting prices for advertising space, and evaluating advertising effectiveness. This results in an improvement in revenues (Fernández-Sande & Rodríguez-Pallares, 2022). Thirdly, BDA helps in operational efficiency. BDA helps in improving scheduling accuracy, reducing waste in commissioning content, and improving predictive decision-making in broadcasting (Murschetz & Schlütz, 2018). The importance of BDA to business can also be seen in market research. The global big data analytics market was estimated at USD 271.83 billion in 2022. It is estimated that the market will grow to USD 745.15 billion by the year 2030 at a CAGR of 13.5% (Grand View Research, 2023). Netflix makes use of BDA to generate approximately 80% of the viewed content (Zhang & Li, 2020). A survey

done in 2024 by Broadcast Media Africa revealed that media organizations in Africa that used BDA to analyze their business saw their revenues grow at a rate that was 2.4 times higher compared to those that did not use BDA (Broadcast Media Africa, 2024).

Adoption of BDA by organizations is not an isolated process, but it is a complex multi-stage process, and it requires coordination among various activities related to technology, humans, and governance. It is a multi-stage process, and an organization generally goes through five distinct phases, such as Awareness and Knowledge, Evaluation and Persuasion, Decision and Piloting, Implementation, and Institutionalization and Confirmation, as described by Rogers (2003) and Burstein & Holsapple (2008). The process involved in each phase includes procedural requirements such as the assessment of analytics requirements, procurement of platforms, deployment of data infrastructure, staff training, development of data governance policies, and integration of analytics outputs into operational cycles, as described by Maroufkhani et al. (2020) and Walker & Brown (2019).

BDA adoption in broadcasting organizations involves a complex ecosystem of stakeholders with unique roles and influences in BDA adoption and usage. The senior management in broadcasting organizations offer strategic direction and approval for allocating resources (Baker, 2012). The information technology and data experts develop and maintain BDA infrastructures (Walker & Brown, 2019). The programme managers, schedulers, and editors are the primary users of BDA in broadcasting organizations and are likely to adopt and utilize BDA information in scheduling and commissioning programmes, and their willingness to adopt BDA information in decision-making is likely to determine the overall value of BDA in broadcasting organizations (Holton & Belair-

Gagnon, 2020). The advertising and marketing teams in broadcasting organizations convert BDA information about audiences into monetary benefits (Fernández-Sande & Rodríguez-Pallares, 2022). The vendors provide BDA tools and expertise in implementation, while the broadcasting authority in Zimbabwe, BAZ, and POTRAZ regulate broadcasting in Zimbabwe and determine the broadcasting regulations that govern BDA usage and audience data collection and analytics (Veglis, 2022; Masinde, 2025). The audiences provide data that BDA systems analyze and process, and their trust in data usage by broadcasting organizations is a significant asset in BDA usage (Veglis, 2022; Masinde, 2025).

The contextual triggers for the study can be established at the global, continental, and Zimbabwean levels. Global contextual triggers can be established in view of the fact that, according to a survey published in 2024 by Broadcast Media Africa, and presented at the 2024 Africa Media Summit in Nairobi, Kenya, only 9% of media organizations in Africa were found to have adopted and actively used analytics tools at a significant operational level, compared to over 60% in the United States and European countries. Continent-wide, the African Union Commission published the Digital Transformation Strategy for Africa (2020-2030), which identified data analytics capabilities as a strategic priority for the digital economy in Africa, thus providing a framework within which broadcasting sectors in Africa, including Zimbabwe, are expected to develop data analytics capabilities. In Zimbabwe, the Cyber and Data Protection Act (Chapter 12:07), enacted in 2021, established a legislative framework that governs the collection and processing of data, thus having a direct consequence for broadcasting organizations that need to collect audience data, as discussed in the Zimbabwe Independent (2021) and NewsDay (2022).

In addition, the country's National Development Strategy 1 (2021-2025) identified the digital economy and information communication technology (ICT)-driven transformation as key national priorities (Government of Zimbabwe, 2020). Furthermore, ZTN's strategic ambitions to expand its digital footprint and compete with other streaming platforms create organizational-level contextual triggers that necessitate BDA capabilities, thus justifying the study at the master's level.

### **1.3 Statement of the Problem**

The body of academic literature pertaining to the adoption of Big Data Analytics (BDA) is significant. McAfee and Brynjolfsson (2012) have already established the commercial viability of BDA, while Murschetz and Schlütz (2018) have explored BDA adoption in European television, while Fernandez-Sande and Rodriguez-Pallares (2022) have researched BDA strategies in commercial television, while Walker and Brown (2019) have researched BDA adoption in a telecommunication organization in South Africa, while Maroufkhani et al. (2020) have developed an analytical framework for the study of BDA determinants in resource-constrained enterprises, while Wessels and Jokonya (2022) have researched BDA adoption challenges in organizations in developing countries, while Ngwendere and Mlitwa (2025) have researched BDA adoption using the TOE framework in Zimbabwe's telecommunication sector. The aforementioned body of academic literature defines the overall parameters for the study of technology adoption, identifies the overall challenges in BDA adoption across industries, and provides analytical frameworks for the study of BDA adoption. What has not been researched by the aforementioned authors, however, is the gap that this study aims to fill, as none have researched BDA adoption in a Zimbabwean television broadcasting organization, none

have applied Burstein and Holsapple's (2008) six-stage maturity continuum for BDA adoption in an African television broadcasting context, and none have produced organizational-specific, contextually grounded, measurement-based research findings that can guide Zimbabwe Television Network (ZTN)'s specific investment decisions, Zimbabwean television broadcasting data governance policy, and the policy guidelines for the Zimbabwean television broadcasting sector developed by the Broadcasting Authority of Zimbabwe (BAZ) and POTRAZ. It is precisely the lack of these three dimensions in the aforementioned body of academic research that this study aims to address.

#### **1.4 Research Objectives**

1. To assess the current extent of Big Data Analytics adoption at Zimpapers Television Network (ZTN).
2. To examine the factors influencing the adoption levels of Big Data Analytics at Zimpapers Television Network (ZTN).
3. To recommend strategies for improving and accelerating the adoption and integration of Big Data Analytics in ZTN's programming operations.

#### **1.5 Research Questions**

1. To what extent has Zimpapers Television Network (ZTN) adopted Big Data Analytics?
2. What factors influence the adoption of Big Data Analytics at Zimpapers Television Network (ZTN)?

3. What strategies can be recommended to enhance and accelerate the adoption and integration of Big Data Analytics in ZTN's programming operations?

## **1.6 Assumptions**

1. ZTN had adopted Big Data Analytics to a moderate extent, but its use was still evolving and not fully optimised across all operational areas.
2. The level of BDA adoption at ZTN was significantly influenced by both internal organisational capabilities and external environmental factors.
3. Ethical and regulatory concerns arising from Zimbabwe's Cyber and Data Protection Act (2021) limited the extent to which ZTN could fully utilise big data technologies.

## **1.7 Significance of the Study**

### **1.7.1 To Academia**

The study contributes to scholarly knowledge in three distinct ways. Firstly, the study offers the inaugural empirical study of BDA adoption in the Zimbabwean television broadcasting industry, thus addressing a geographic and sectoral literature gap. Secondly, the study empirically validates the applicability of the six-stage maturity continuum model proposed by Burstein and Holsapple (2008) as a measurement framework for BDA adoption in the Zimbabwean television broadcasting industry, thus providing a methodological framework that can inform future studies. Thirdly, the study empirically illustrates the enhanced explanatory ability of the proposed integrated framework

compared to single-theory approaches in technology adoption studies in complex, developing market environments.

### **1.7.2 To Industry**

The study provides ZTN's leadership with a diagnostic tool to understand the organization's adoption status in the field of business analytics and data (BDA), including maturity, adopter, enabling, and structural readiness gaps. For the broadcasting industry in Zimbabwe, the study offers a sector-level analytics readiness assessment, along with guidance, to facilitate collective digital transformation initiatives.

### **1.7.3 To Policy and Regulation**

The study provides BAZ, POTRAZ, and the Government of Zimbabwe with empirical evidence to guide policy formulation on broadcasting data governance, incentives for BDA investment, and regulatory clarity on the application of the Cyber and Data Protection Act (2021) to broadcasting audience analytics. The PESTEL environmental analysis identifies the policy gaps that are currently limiting BDA investment in the broadcasting sector of Zimbabwe.

### **1.7.4 To the Researcher**

The study offered an opportunity to develop advanced skills in the application of mixed-methods research design and analysis, as well as the cultivation of professional expertise in the area of media management, digital transformation, and technology adoption within the developing economy context.

## **1.8 Delimitations of the Study**

The scope of this study is limited to the adoption of BDA technology by ZTN television broadcasting operations in Zimbabwe, with specific reference to programme scheduling, programme strategy, and audience analytics. It does not cover other divisions of Zimpapers Group, namely print media, online media, international operations, and outcome variables of BDA adoption, which might be avenues for future study.

### **1.9 Limitations of the Study**

Given that it is a single-case study, it is only applicable to ZTN and not easily generalized to the broadcasting industry in Zimbabwe. The access to sensitive business information was affected by ZTN's competitive environment. The imposition of an academic timeframe was a limitation in terms of scope in the data collection period. The use of qualitative data analysis was subject to an inherent risk of interpretation bias by the researcher, which was reduced by using triangulation in data sources and member checking.

## **CHAPTER 2: REVIEW OF RELATED LITERATURE**

### **2.1 Introduction**

The purpose of this chapter is to review theoretical, conceptual, and empirical literature relevant to the adoption of Big Data Analytics (BDA) in broadcasting. The chapter first presents the theoretical frameworks that underpin the study, followed by a discussion of their relevance to the current research context. It then reviews the literature on levels of BDA adoption and the factors that influence adoption, before concluding with a conceptual framework that integrates these insights to guide the investigation of BDA adoption at Zimpapers Television Network (ZTN).

### **2.2 Theoretical Framework**

This study is grounded in four complementary theoretical frameworks: the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), the Diffusion of Innovation (DOI) theory, and the Technology-Organisation-Environment (TOE) framework. Each framework contributes a distinct analytical lens to the study of technology adoption, and together they provide a comprehensive basis for identifying the variables that influence BDA adoption at ZTN.

#### **2.2.1 Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM), first conceptualized by Fred Davis (1989) at the Massachusetts Institute of Technology, is one of the most frequently cited individual-level technology adoption models in the information systems literature. TAM was derived from the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1980), which

proposes that an individual's behavior can be predicted by their behavioral intention, which in turn is shaped by their attitudes and subjective norms about the behavior. Davis (1989) adapted TRA for information technology adoption by focusing on two salient cognitive beliefs: Perceived Usefulness (PU), defined as the degree to which a person believes that using a system would enhance their job performance, and Perceived Ease of Use (PEOU), defined as the degree to which a person believes that using a system would be free of effort. Davis (1989) further postulates that PEOU positively influences PU, and that both beliefs predict Behavioral Intention (BI) to use the technology. Venkatesh and Davis (2000) and Venkatesh et al. (2003) have validated TAM across a range of technology types including enterprise resource planning systems and analytics platforms.

### **2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT)**

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh, Morris, Davis, and Davis (2003), was constructed by synthesizing eight prior technology adoption theories and models, including TAM, the Theory of Planned Behavior, the Motivational Model, and Social Cognitive Theory, with the objective of producing a more comprehensive and predictive model. Venkatesh et al. (2003) validated UTAUT through four longitudinal field studies, finding that it accounted for 70% of the variance in behavioral intention to use technology, significantly outperforming individual prior models. UTAUT identifies four core determinants of adoption: Performance Expectancy, defined as the degree to which an individual believes that using the system will help attain gains in job performance; Effort Expectancy, defined as the degree of ease associated with using the system; Social Influence, defined as the extent to which an individual perceives that important others believe they should use the system; and

Facilitating Conditions, defined as the degree to which an individual believes that organizational and technical infrastructure exists to support system use. The model also identifies four moderating variables: gender, age, experience, and voluntariness of use.

### **2.2.3 Diffusion of Innovation (DOI) Theory**

The Diffusion of Innovation (DOI) theory, developed by Everett Rogers across five editions between 1962 and 2003, is the most extensively cited process-based model of technology adoption in the social sciences. Rogers (2003) defines diffusion as the process in which an innovation is communicated through certain channels over time among the members of a social system. The DOI theory operates at three levels simultaneously, examining the innovation itself, the adopters of the innovation, and the social system within which diffusion occurs. At the level of the innovation, Rogers (2003) identifies five characteristics that determine the rate of adoption: Relative Advantage, Compatibility, Complexity, Trialability, and Observability. At the level of adopters, the theory classifies individuals or organizations into five adopter categories based on their relative time of adoption: Innovators, Early Adopters, Early Majority, Late Majority, and Laggards. At the level of the social system, the theory identifies three organizational attributes that shape diffusion: Tension for Change, Innovation-System Fit, and Assessment of Implications. DOI also describes a five-stage innovation-decision process through which individuals and organizations progress: Knowledge, Persuasion, Decision, Implementation, and Confirmation.

### **2.2.4 Technology-Organisation-Environment (TOE) Framework**

The Technology-Organisation-Environment (TOE) framework, developed by Tornatzky and Fleischer (1990) with support from the US National Science Foundation, provides an organizational-level model for understanding technology adoption decisions. Unlike TAM and UTAUT, which focus primarily on individual-level adoption, the TOE framework examines how three contextual dimensions shape organizational adoption: the technological context, which encompasses both technologies internal to the organization and those available in the market; the organizational context, which includes the internal characteristics of the organization such as its human resources, leadership, culture, and financial capacity; and the environmental context, which encompasses the external industry and regulatory environment in which the organization operates. Baker (2012), in a review of 70 empirical TOE studies, confirmed that all three dimensions consistently explain a significant proportion of variance in organizational technology adoption decisions. In this study, the environmental dimension of the TOE framework is operationalized using the PESTEL framework, which provides a structured taxonomy of Political, Economic, Social, Technological, Environmental, and Legal factors.

### **2.3 Relevance of the Theoretical Framework to this Study**

The four theoretical frameworks reviewed in Section 2.2 are collectively relevant to this study because BDA adoption at ZTN is a multi-level phenomenon that cannot be fully explained by any single theory. TAM is relevant because BDA adoption at ZTN is ultimately enacted by individual employees, whose adoption decisions will be shaped by their perceptions of BDA's usefulness to their work and the ease with which they can use BDA tools. The three TAM constructs of Perceived Usefulness, Perceived Ease of Use,

and Behavioral Intention to Use provide the attitudinal variables through which individual-level adoption readiness at ZTN will be assessed.

UTAUT extends TAM's explanatory power by incorporating organizational and social dimensions of individual adoption. Performance Expectancy and Effort Expectancy refine the TAM constructs of PU and PEOU into broader, validated scales applicable to organizational technology contexts. Social Influence is particularly relevant at ZTN given the hierarchical nature of broadcasting organizations, where management directives and peer adoption patterns significantly shape employees' technology adoption decisions. Facilitating Conditions is relevant because ZTN, as an organization in a developing economy context, may face significant infrastructure constraints that limit the translation of adoption intention into actual adoption behavior.

DOI theory is relevant to this study at both the individual and organizational levels. At the individual level, the five innovation characteristics of Relative Advantage, Compatibility, Complexity, Trialability, and Observability provide a framework for understanding how ZTN employees perceive BDA as an innovation and the extent to which those perceptions facilitate or impede adoption. At the organizational level, the adopter category classification provides a means of situating ZTN's current level of BDA adoption within the broader diffusion curve, while the five-stage innovation-decision process provides a behavioral framework for describing the organization's current adoption trajectory.

The TOE framework is relevant because BDA adoption at ZTN is fundamentally an organizational decision that is shaped by contextual factors beyond individual attitudes. The technological dimension of TOE provides variables for assessing ZTN's existing ICT

infrastructure and strategic alignment, which are preconditions for BDA adoption. The organizational dimension provides variables for assessing the human, financial, cultural, and leadership factors within ZTN that enable or constrain adoption. The environmental dimension, operationalized through PESTEL, provides variables for assessing the external regulatory, economic, and competitive pressures that shape ZTN's adoption decision. Collectively, the four frameworks provide a comprehensive, multi-level analytical basis for achieving all three research objectives of this study.

## **2.4 Levels of Adoption of Technology**

Measuring the level of BDA adoption achieved by an organisation requires a framework that can capture the progressive, staged nature of technology maturity. This study employs the six-stage technology maturity continuum developed by Burstein and Holsapple (2008), which defines an organisation's technology maturity across six progressively advanced stages, covering the entire range from basic data management to fully embedded advanced analytics. The six stages are described as follows.

- Stage 1 - Data Processing (DP): The technology is used only for basic clerical data management, such as data entry, record-keeping, and basic batch processing. No analytical capability is available, and the technology functions solely in an administrative capacity.
- Stage 2 - Management Information Systems (MIS): Data is processed to produce structured, periodic management reports for decision support. The information is standardised and retrospective, providing summaries of past performance but offering little insight into current or future performance.

- Stage 3 - Decision Support Systems (DSS): Interactive analytical tools are used for semi-structured decision support, enabling users to query data in response to specific operational questions. Organisations at this stage begin using data proactively rather than retrospectively.
- Stage 4 - Organisational Computing (OC): Technology use is fully integrated across departments, enabling cross-functional cooperation, shared information, and joint decision-making through integrated data systems.
- Stage 5 - E-Commerce / Digital Engagement: Technology is used to engage with external entities such as audiences, advertisers, and partners, and to broaden the organisation's analytics capabilities beyond internal data sources.
- Stage 6 - Pervasive Computing / Advanced Analytics: Analytics, artificial intelligence, and predictive technologies are fully embedded within the organisation's operations, providing automated, real-time insights that drive strategic and operational decision-making.

Advancement through these stages demands the overcoming of specific barriers at each transition point. Infrastructure limitations constrain advancement through Stages 1 and 2, skills deficits constrain advancement through Stages 2 and 3, and governance limitations constrain advancement through Stages 3 and 4. This staged progression aligns directly with the enabling and limiting factors identified in the TOE framework and the independent variables operationalized in this study, thus qualifying the Burstein and Holsapple (2008) continuum as the appropriate instrument for measuring the dependent variable. In addition to the maturity continuum, the Rogers (2003) five-stage innovation-

decision process and adopter category classifications are used as secondary behavioral measures of ZTN's current adoption level.

## **2.5 Factors Influencing the Adoption of Technology**

The literature reviewed in Section 2.2 identifies twenty-five factors that influence the level of BDA adoption in organisations. These factors are organized into three categories: individual factors, which relate to the perceptions and attitudes of the employees who use BDA; organisational factors, which relate to the internal characteristics of the organisation that enable or constrain adoption; and environmental factors, which relate to the external context within which the adoption decision is made. Each factor is discussed below as a subheading.

### **2.5.1 Individual Factors**

Individual factors are those that operate at the level of the employee and shape their personal disposition toward adopting BDA. These factors are drawn primarily from the TAM and UTAUT frameworks and include the following.

#### **2.5.1.1 Perceived Usefulness**

Perceived Usefulness refers to the extent to which an individual believes that using a specific technology will improve their job performance (Davis, 1989). In the technology acceptance model, Perceived Usefulness has been recognized as the most dominant predictor of technology adoption across different contexts and technology types (Venkatesh & Davis, 2000). Gangwar, Date, and Ramaswamy (2019) found that individuals who perceived high usefulness in enterprise analytics technology adopted it at rates more than three times higher than those with low perceived usefulness. In the context

of this study, Perceived Usefulness captures whether ZTN employees perceive BDA as genuinely improving their programming, scheduling, and audience analytics work.

#### **2.5.1.2 Perceived Ease of Use**

Perceived Ease of Use (PEOU) measures the degree to which an individual expects that using the technology system will be free of effort (Davis, 1989). PEOU influences adoption both directly through behavioral intention and indirectly through its positive effect on Perceived Usefulness. Venkatesh and Davis (2000) found that PEOU has stronger predictive power for non-specialized users who face higher adoption costs, making it particularly relevant at ZTN where many potential BDA users are programme makers rather than data specialists.

#### **2.5.1.3 Behavioural Intention to Use**

Behavioral Intention to Use (BI) refers to the degree to which a person is consciously intent on using a particular technology in the future (Davis, Bagozzi, & Warshaw, 1989). In the TAM model, BI is the primary driver of actual technology usage and acts as the bridge between attitudinal constructs and actual adoption behavior. The importance of BI as a research construct lies in its measurability prior to actual usage, making it a significant predictor of adoption patterns in organisations that are in the evaluation stage of BDA investment.

#### **2.5.1.4 Performance Expectancy**

Performance Expectancy is defined as the degree to which an individual believes that using the system will help attain gains in job performance (Venkatesh et al., 2003). It is the UTAUT equivalent of Perceived Usefulness and encompasses constructs such as

extrinsic motivation, job fit, and relative advantage from prior models. Venkatesh et al. (2003) found Performance Expectancy to be the strongest predictor of behavioral intention across all four organisations in their field study and across gender and age groups, establishing its primacy as an individual-level adoption predictor.

#### **2.5.1.5 Effort Expectancy**

Effort Expectancy is defined as the degree of ease associated with using a system (Venkatesh et al., 2003). It combines Perceived Ease of Use from TAM and the Complexity dimension from DOI into a broader validated scale. Venkatesh et al. (2003) found that Effort Expectancy has particular importance in the early stages of technology use and among older workers and female workers, suggesting its relevance in organisations such as ZTN where BDA adoption is still at an early stage and the workforce is heterogeneous in terms of digital skills.

#### **2.5.1.6 Social Influence**

Social Influence is defined as the extent to which an individual perceives that important others think they should use the new system (Venkatesh et al., 2003). It subsumes social and normative influence from supervisors, colleagues, and peers. Social Influence is particularly relevant in hierarchical organisations, where management directives carry strong adoption implications, and in organisations with strong professional communities, where peer adoption creates social pressure. Venkatesh et al. (2003) found Social Influence to have a significant impact particularly in mandatory adoption contexts, which is relevant to ZTN where BDA adoption may be driven by strategic directives from senior management.

## **2.5.2 Organisational Factors**

Organisational factors are those internal to the organisation that shape its structural capacity and cultural disposition to adopt BDA. These factors are drawn primarily from the UTAUT and TOE frameworks.

### **2.5.2.1 Facilitating Conditions**

Facilitating Conditions refer to the degree to which an individual believes that an organisational and technical infrastructure exists to support system use (Venkatesh et al., 2003). Unlike other UTAUT constructs, Facilitating Conditions capture the objective reality of infrastructure availability rather than individual perception alone. Venkatesh et al. (2003) demonstrated that Facilitating Conditions have significant predictive capability for actual usage, emphasizing the distinction between the intention to adopt and the structural capability to do so. This is particularly significant for ZTN in a resource-constrained developing economy context where infrastructure availability may not match adoption motivation.

### **2.5.2.2 Top Management Support**

Top Management Support refers to the extent to which the organisational leadership supports, endorses, and enables technology adoption through commitment of resources, redesign of organisational boundaries, and signaling of organisational priority (Baker, 2012; Tornatzky & Fleischer, 1990). Baker (2012) found Top Management Support to be the most consistently significant predictor of technology adoption in the TOE model, emerging as a statistically significant predictor in 54 of 70 studies. Without Top

Management Support, BDA adoption at ZTN is likely to remain peripheral and vulnerable to deprioritisation when organisational pressures change.

### **2.5.2.3 Human Resources and Staff Competencies**

Human Resources and Staff Competencies relates to the availability of personnel with the competencies required to use, manage, and derive value from BDA technology (Tornatzky & Fleischer, 1990). These competencies range from data literacy and technical skills to analytical judgment. Baker (2012) identified Human Resources as a highly significant factor in technology adoption, a finding corroborated by Wessels and Jokonya (2022), who identified it as the most cited organisational barrier to technology adoption in developing country contexts, making it a critical variable for ZTN.

### **2.5.2.4 Resource Availability**

Resource Availability refers to the availability of financial, human, and technological resources that can be committed to the BDA adoption programme (Tornatzky & Fleischer, 1990; Baker, 2012). Maroufkhani, Ismail, and Ghobakhloo (2020) found that in resource-constrained environments, Resource Availability was the dominant adoption factor, imposing a direct structural barrier to technology adoption regardless of the motivation or willingness of management and employees. Given Zimbabwe's challenging macroeconomic environment, this variable has particular salience for ZTN.

### **2.5.2.5 Organisational Culture**

Organisational culture refers to the values, norms, and practices that shape collective decision-making and adaptation to change within an organisation (DiMaggio & Powell, 1983; Baker, 2012). An innovative, evidence-based organisational culture facilitates

technology adoption by normalising change and reducing social resistance, while a traditionalist and risk-averse culture imposes additional barriers by elevating the social cost of deviating from established practice. DiMaggio and Powell (1983) demonstrated that organisations are inclined to adopt the cultural norms of the industry they operate in, suggesting that ZTN's adoption culture will be shaped in part by broader patterns in the Zimbabwean broadcasting sector.

### **2.5.2.6 Training and Capacity Building**

Training and Capacity Building refers to the provision of programmes, resources, and mechanisms to develop the skills and knowledge that employees need to adopt and use BDA effectively (Baker, 2012). Training availability is analytically distinct from current staff competency levels, as it reflects the organisation's capacity to close skills gaps over time rather than the current size of those gaps. Jensen (2024) found Training Availability to be the most important predictor of adoption stage progression for African organisations adopting data analytics technology, establishing its particular relevance for this study.

### **2.5.2.7 ICT Infrastructure Reliability**

ICT Infrastructure Reliability is defined as the quality, stability, capacity, and scalability of existing hardware, networking, storage, and software systems on which new technology must be implemented (Tornatzky & Fleischer, 1990; Baker, 2012). Analytics technologies require substantial infrastructure support including storage, computing power, and high-speed connectivity. Baker (2012) found infrastructure readiness to be a statistically significant predictor of technology adoption in 41 of 70 TOE studies, establishing it as a critical precondition for BDA adoption at ZTN.

### **2.5.2.8 ICT Strategy Alignment**

ICT Strategy Alignment refers to the extent to which BDA adoption is formally incorporated into the organisation's overall information technology strategy (Baker, 2012). Where analytics adoption is embedded in a formal technology strategy, it benefits from budget protections, planned infrastructure investments, and governance structures that ensure accountability. Jensen (2024) demonstrated that organisations with formal ICT strategies that include analytics adoption achieve significantly higher adoption rates than those without, underscoring the strategic dimension of BDA adoption at ZTN.

### **2.5.3 Environmental Factors**

Environmental factors are those external to the organisation that shape the context within which BDA adoption decisions are made. In this study, the environmental dimension of the TOE framework is operationalized through the PESTEL framework, which provides six categories of external factors.

#### **2.5.3.1 Political Factors**

Political factors include government policies, regulatory systems, and public sector strategies that shape the environment for technology investment in broadcasting. Zimbabwe's National Development Strategy 1 (2021-2025) identified digital economy and ICT-driven transformation as key national priorities (Government of Zimbabwe, 2020), while the African Union Commission's Digital Transformation Strategy for Africa (2020-2030) identified data analytics as a strategic priority for the continent. Baker (2012) found that government and regulatory support was a significant positive predictor of

technology adoption, with organisations in supportive political environments adopting technology at significantly higher rates.

### **2.5.3.2 Economic Factors**

Economic factors include the macroeconomic environment, advertising revenue conditions, capital availability, exchange rate dynamics, and the relative cost of BDA technology. In the Zimbabwean context, currency instability and constrained advertising markets directly affect ZTN's capacity to invest in analytics technology. Alalawneh (2021) identified economic cost as a powerful inhibitor of technology investment in African organisational settings, noting that enterprise analytics technology is often priced beyond the financial capacity of organisations with genuine adoption motivation.

### **2.5.3.3 Social Factors**

Social factors include the sociocultural environment, educational attainment levels of the available workforce, and cultural attitudes toward data-driven decision-making in the broadcasting industry. Holton and Belair-Gagnon (2020) established that cultural resistance to data-driven decision-making is particularly pronounced in organisations with a strong tradition of experiential or intuitive professional judgment, a characteristic of many legacy broadcasting organisations including those in Zimbabwe.

### **2.5.3.4 Technological Factors**

Technological environmental factors include the pace of technological change in the broadcasting industry, the maturity and availability of analytics platforms, and the technology adoption patterns of peer and competitor organisations. DiMaggio and Powell (1983) identified mimetic isomorphism as a driver of technology adoption, whereby

organisations adopt technologies in response to competitive pressure from peer organisations that have already adopted. Baker (2012) confirmed that industry technology trends and vendor ecosystems are significant positive predictors of adoption in the environmental context.

#### **2.5.3.5 Environmental / Competitive Factors**

Competitive pressure refers to the pressure exerted by the industry competitive environment on organisations to adopt new technology in order to maintain or improve their competitive position. Maroufkhani et al. (2020) found competitive pressure to be one of the strongest environmental predictors of technology adoption in emerging markets. For ZTN, the growing presence of digital streaming platforms and international broadcasters in the Zimbabwean market creates a tangible competitive trigger for BDA adoption.

#### **2.5.3.6 Legal Factors**

Legal factors include data protection laws, broadcasting licensing regulations, intellectual property laws, and advertising regulations that define the boundaries of permissible data collection and analytics practice. Zimbabwe's Cyber and Data Protection Act (Chapter 12:07), enacted in 2021, established a legislative framework governing the collection and processing of personal data, creating both compliance obligations and regulatory uncertainty for broadcasting organisations seeking to collect and analyze audience data. Alalawneh (2021) found that regulatory ambiguity in data privacy was a significant inhibitor of analytics investment in African organisational contexts, a finding directly applicable to ZTN's operating environment.

## **2.6 Conceptual Framework**

The conceptual framework for this study was developed systematically from the review of the four theoretical frameworks and their associated empirical literatures discussed in sections 2.2 to 2.5. It presents the hypothesised relationships between the twenty-five independent variables identified in the literature and the dependent variable, being the level of BDA adoption at ZTN. The level of BDA adoption is measured using three instruments: the Burstein and Holsapple (2008) six-stage maturity continuum as the primary measure, and the Rogers (2003) adopter category classification and five-stage innovation-decision process as secondary behavioral measures.

The framework is presented diagrammatically below, with independent variables grouped by category on the left and the dependent variable on the right. All variables are theoretically grounded in one or more of the four frameworks reviewed in this chapter and will be operationally defined in the research instruments developed in Chapter 3 and empirically measured in Chapter 4.

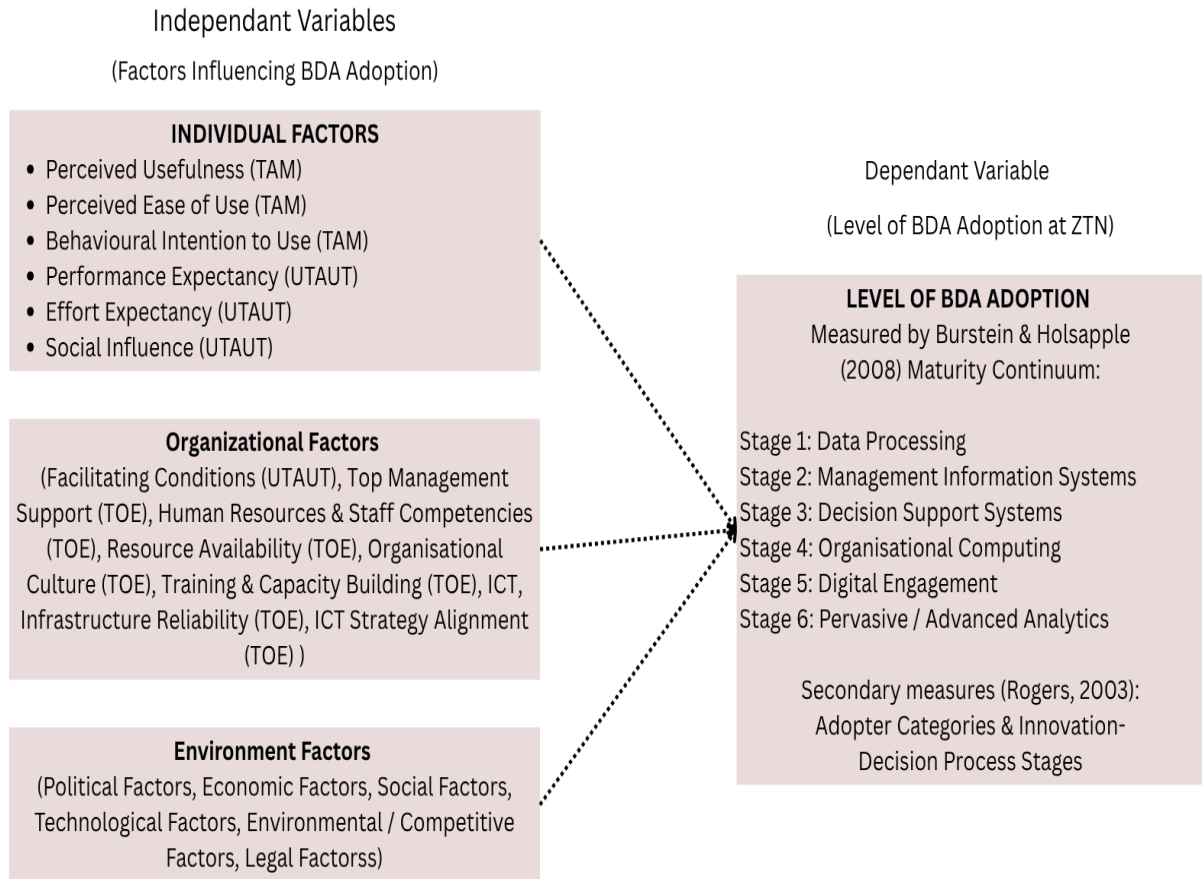


Figure 1 Conceptual Framework - Factors Influencing the Level of BDA Adoption at ZTN

*Source: Researcher's own, adapted from Davis (1989); Venkatesh et al. (2003); Rogers (2003); Tornatzky and Fleischer (1990); and Burstein and Holsapple (2008)*

## 2.7 Chapter Summary

This chapter has presented the theoretical and empirical foundation for the study of BDA adoption at ZTN. Four theoretical frameworks were reviewed: TAM, which provides three individual-level attitudinal variables (Perceived Usefulness, Perceived Ease of Use, and

Behavioral Intention to Use); UTAUT, which provides four organizational and social adoption determinants (Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions); DOI theory, which provides five innovation characteristics (Relative Advantage, Compatibility, Complexity, Trialability, and Observability), five adopter categories, three social system attributes, and a five-stage innovation-decision process; and the TOE framework, which provides two technological factors, five organisational factors, and six environmental factors organized through the PESTEL taxonomy. The relevance of these frameworks to the ZTN context was established, and the Burstein and Holsapple (2008) six-stage maturity continuum was identified as the primary instrument for measuring the dependent variable. The twenty-five research variables were organized into individual, organisational, and environmental factor categories, and a conceptual framework was presented. Chapter 3 describes the research methodology that will be used to empirically investigate these variables in the ZTN context.

## **CHAPTER 3: METHODOLOGY**

### **3.1 Introduction**

This chapter presents and justifies the research methodology employed to investigate the adoption of Big Data Analytics (BDA) at Zimpapers Television Network (ZTN). Section 3.2 describes and justifies the research design. Section 3.3 presents the target population and sampling procedures. Section 3.4 describes the data collection instruments used. Section 3.5 outlines the data collection procedure. Section 3.6 describes the approach to data analysis and organisation. Section 3.7 presents the ethical considerations guiding the study. All methodological choices are justified with direct reference to the study's research objectives and the conceptual framework developed in Chapter 2.

### **3.2 Research Design**

The research design used in this study is a convergent mixed-methods case study design, combining quantitative and qualitative data collection and analysis within a single bounded unit of analysis, which is Zimpapers Television Network (ZTN). According to Yin (2018), a case study is an empirical investigation that undertakes an in-depth examination of a contemporary phenomenon in a real-life setting, particularly when the boundaries between the phenomenon and its context are not clearly defined. This design was chosen on three grounds: first, BDA adoption at ZTN is a contemporary organizational phenomenon that cannot be interpreted meaningfully without considering ZTN's specific operational context; second, the research requires an in-depth examination of the complex interactions between the twenty-five independent variables identified in Chapter 2 and the dependent variable; and third, the case study design accommodates

methodological triangulation across quantitative and qualitative data sources, thereby improving the validity and comprehensiveness of the findings (Yin, 2018).

The research design is further classified as explanatory. An explanatory research design aims to determine associative relationships between variables and to explain why a particular phenomenon occurs in a certain way, rather than simply describing its existence (Saunders, Lewis, & Thornhill, 2019). This classification is directly informed by the nature of the second research objective, which requires not merely a description of BDA adoption levels at ZTN, but an examination of the relationships between the adoption-influencing factors identified in Chapter 2 and the observed adoption outcomes. The explanatory design is therefore the appropriate choice for achieving this objective.

The convergent mixed-methods approach combined a structured questionnaire administered to 50 participants, which provided quantitative descriptive and comparative data for Research Objectives 1 and 2, with semi-structured interviews conducted with 12 key informants, which provided explanatory depth and contextual richness for Research Objective 2. The combination of the two data strands through methodological triangulation strengthened the validity and comprehensiveness of the findings (Creswell & Plano Clark, 2018).

### **3.3 Population and Sampling**

#### **3.3.1 Target Population**

The target population was all employees of Zimpapers Television Network (ZTN) who were directly or indirectly involved in the adoption, implementation, use, or governance of information technology and data systems. This included employees in the departments

of Programming and Production, Information Technology, Digital Content and Marketing, Data and Analytics, and Management and Administration. These employees were selected because of their direct connection to the research objectives: they are the agents who adopt BDA tools, create the conditions under which adoption is possible, or are influenced by the adoption decisions of others. The estimated total population of relevant ZTN employees across the five departmental categories was 80 people.

### **3.3.2 Sampling Technique**

Purposive sampling was used as the primary sampling method, together with a stratified purposive design to ensure proportionate representation across the five departmental categories. Purposive sampling is a form of non-probability sampling where participants are selected based on their specific knowledge, experience, and relevance to the research objectives (Patton, 2015). This approach was appropriate for the current study because the research objectives required participants with direct knowledge of BDA adoption processes, challenges, and decisions at ZTN, a characteristic that applied to a specific subset of the workforce rather than the entire organisation. Stratification by department ensured that the sample included perspectives from both the technical workforce with direct responsibility for BDA infrastructure and the operational workforce who used or were impacted by BDA outputs, reflecting the multi-stakeholder nature of the adoption process.

For the qualitative component of the research, 12 key informants were purposively selected from among the questionnaire respondents. The key informants were selected to represent the three stakeholder groups with the most direct knowledge of BDA adoption

decisions, challenges, and strategic context at ZTN: senior management, IT management, and operational programme management.

### 3.3.3 Sample Size

The quantitative sample size was determined using Slovin's formula, which provides a mathematically grounded sample size estimate for a known population given an acceptable margin of error:

$$n = N / (1 + Ne^2)$$

Where n is the required sample size, N is the total population (80 ZTN employees relevant to the study), and e is the margin of error set at 0.05, representing a 95% confidence level.

Applying the formula:

$$n = 80 / (1 + 80 \times (0.05)^2) = 80 / (1 + 0.20) = 80 / 1.20 \approx 67$$

The result indicated a recommended sample size of approximately 67 participants. A sample size of 50 participants was used, based on constraints of availability and willingness to participate among ZTN staff. The sample size of 50 is considered adequate for a mixed-methods case study of this nature (Saunders et al., 2019). For the qualitative component, 12 key informant interviews were conducted. Table 1 shows the distribution of the sample by department.

Table 1: ZTN Sample Distribution (N = 50)

| Department / Category | Estimated Population | Sample Size | Sampling Method |
|-----------------------|----------------------|-------------|-----------------|
| Executive Management  | 10                   | 5           | Purposive       |

|                             |           |           |                      |
|-----------------------------|-----------|-----------|----------------------|
| Information Technology (IT) | 20        | 15        | Stratified Purposive |
| Programming & Production    | 25        | 15        | Stratified Purposive |
| Digital Content & Marketing | 15        | 10        | Purposive            |
| Data & Analytics Unit       | 10        | 5         | Purposive            |
| <b>Total</b>                | <b>80</b> | <b>50</b> | --                   |

*Source: Researcher's Design (2025)*

The allocation in Table 1 ensured proportional representation across the five departments, with the largest allocations made to Information Technology (15 participants) and Programming and Production (15 participants), reflecting the centrality of these two departments to BDA adoption at ZTN. Smaller but targeted allocations were made to Executive Management (5 participants) and the Data and Analytics Unit (5 participants).

### **3.4 Data Collection Instruments**

Two primary data collection instruments were used in this research: a structured questionnaire for gathering quantitative data and a semi-structured interview guide for gathering qualitative data. A third instrument, document analysis, was employed as a supplementary method to triangulate the primary data. All instruments were designed to operationalize the variables identified in the conceptual framework in Chapter 2.

#### **3.4.1 Questionnaire**

A structured questionnaire was designed to gather quantitative data from the entire sample of 50 participants. The questionnaire operationalized all twenty-five research variables identified in the conceptual framework of Chapter 2 and was organised into five sections.

Section A gathered demographic data including gender, age group, department, job title, and length of service at ZTN, enabling the creation of the sample profile presented in Chapter 4.

Section B operationalized the dependent variable, being the extent of BDA adoption, using two complementary measurement methods. The first part asked respondents to rate the degree to which ZTN had adopted each of the six Burstein and Holsapple (2008) stages of technology maturity on a five-point scale ranging from 1 (Not adopted) to 5 (Fully adopted). The second part asked respondents to identify which of the five innovation-decision stages best described their current level of BDA use in their department.

Section C operationalized the individual-level independent variables drawn from TAM and UTAUT, namely Perceived Usefulness, Perceived Ease of Use, Behavioral Intention, Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions, using five-point Likert scales ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Section D operationalized the organisational-level independent variables including the DOI innovation characteristics and the TOE organisational factors, namely Relative Advantage, Compatibility, Complexity, Trialability, Observability, Management Support, Human Resources, Resource Availability, Organisational Culture, and Training, using five-point Likert scales ranging from 1 (Not Important) to 5 (Very Important).

Section E operationalized the TOE environmental factors structured as PESTEL, namely Political, Economic, Social, Technological, Competitive, and Legal factors, using five-point Likert scales ranging from 1 (Not Important) to 5 (Very Important).

Questionnaire items were adapted from previously validated scales used in technology adoption research, specifically the instruments developed by Gangwar, Date, and Ramaswamy (2019) and Oliveira, Thomas, Baptista, and Campos (2020), to ensure content validity and measurement reliability. The instrument was administered via Google Forms to facilitate efficient distribution and data capture across all five departments. A pilot test was conducted with five ZTN staff members not included in the final sample to assess clarity, completeness, and approximate completion time, resulting in minor wording adjustments before final administration.

### **3.4.2 Interview Guide**

A semi-structured interview guide was designed to collect qualitative data from 12 purposively selected key informants. The guide was intended to provide in-depth, contextually informed data on the themes operationalized in the questionnaire and to capture the experiential and interpretive dimensions of BDA adoption that could not be fully expressed through structured Likert ratings. The qualitative data collected included audio recordings of the interview sessions, which were subsequently transcribed verbatim to create written text transcripts forming the qualitative dataset for analysis.

The interview guide was structured around five thematic areas aligned with the conceptual framework of the study.

Theme 1 - Adoption Extent: Respondents were asked to describe the current level of data analytics use within ZTN's departments and to position ZTN on the adoption continuum based on their own assessment.

Theme 2 - Individual Factors: Questions addressed staff views on the perceived usefulness and ease of use of BDA tools, the impact of social factors on adoption attitudes, and the extent to which organisational facilitating conditions supported actual use.

Theme 3 - Innovation Characteristics: Questions examined the perceived relative advantage of BDA over traditional approaches, the degree of compatibility with existing work practices, the perceived complexity for various categories of personnel, the availability of opportunities to pilot tools before widespread adoption, and the visibility of BDA outcomes within the organisation.

Theme 4 - Organisational Factors: Questions examined management commitment, the skills and training of personnel, the availability of resources, and the degree of organisational cultural support for data-informed decision-making.

Theme 5 - Environmental Factors: Questions examined competitive pressures, economic constraints, social and cultural considerations, industry technology trends, and the legal and regulatory framework governing BDA adoption.

Interviews were conducted either in-person at ZTN's offices or via video conferencing, depending on respondent availability. Each interview lasted between 30 and 45 minutes.

With the informed consent of each respondent, interviews were audio-recorded to facilitate accurate transcription. Transcription was completed by the researcher within 48 hours of each interview to minimise recall bias and enhance transcription accuracy.

### **3.4.3 Document Analysis**

Document analysis was used as a supplementary data collection instrument to triangulate the findings from the questionnaire and interview data. According to Bowen (2009), document analysis is a systematic approach to reviewing and analyzing documents as a data source, providing historical, organisational, and contextual information that may not be accessible through primary data collection methods alone.

The documents analyzed in this study included publicly available and in-house strategic planning documents, ICT policy statements, departmental operational reports, annual reports, and relevant external documents such as the regulatory guidelines of the Broadcasting Authority of Zimbabwe (BAZ) and the Cyber and Data Protection Act of Zimbabwe (2021).

Document analysis served three purposes in this study. First, it was used for contextual validation, comparing self-reported adoption levels and factor ratings from the questionnaire with recorded evidence of ZTN's ICT investments, strategic plans, and operational systems to assess consistency. Second, it was used for historical contextualisation, placing the current adoption levels within the context of ZTN's digital transformation history as recorded in available documents. Third, it was used for institutional grounding, identifying the regulatory, policy, and strategic documents that

define the environmental context in which ZTN makes its BDA adoption decisions, thereby informing the environmental analysis in Chapter 4.

### **3.5 Data Collection Procedure**

Data collection was conducted in two sequential phases during 2025. Prior to commencing any data collection activities, formal ethics clearance was obtained from the Research Ethics Committee of Africa University, and written organisational access approval was obtained from ZTN's management. Information sheets outlining the purpose of the study, the rights of participants, and the measures taken to ensure confidentiality were provided to all participants, and each participant provided written informed consent before participating.

Phase One involved the administration of the structured questionnaire to the 50 participants in the study sample. The Google Forms link was distributed through the heads of the five sampled departments, who shared it with the designated participants in their respective departments. A two-week completion window was provided, with a reminder sent at the midpoint. All 50 questionnaires were completed by the end of the data collection period, achieving a 100% response rate.

Phase Two involved the conduct of 12 semi-structured key informant interviews. Interviews were scheduled only after the questionnaire data had been analyzed, so that the qualitative phase could be used to expand and clarify thematic areas, apparent inconsistencies, or unexpected findings emerging from the quantitative data. This sequencing ensured that the qualitative interviews added analytical depth rather than

simply replicating the quantitative findings. All 12 interviews were completed, achieving a 100% response rate.

### **3.6 Analysis and Organisation of Data**

A convergent parallel mixed-methods analysis approach was employed, in which the quantitative and qualitative data were analyzed separately using appropriate methods and subsequently integrated during the interpretation phase to provide a comprehensive explanation of BDA adoption at ZTN (Creswell & Plano Clark, 2018). Three methods of analysis were applied.

#### **3.6.1 Quantitative Data Analysis**

The quantitative data collected from the structured questionnaire were processed and analyzed using the Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics, specifically frequencies, percentages, and means, were calculated for all variables. Frequencies and percentages were used to describe the demographic composition of the sample and to present adoption level distributions for the Burstein and Holsapple (2008) maturity stages. Means were calculated for all factor items measured on Likert scales to assess the relative weight assigned to each of the twenty-five independent variables. Results are presented in tabular form in Chapter 4 to enable comparisons among variable categories and to identify the most significant enabling and constraining factors.

#### **3.6.2 Qualitative Data Analysis: Thematic Analysis**

The twelve interview transcripts were analyzed using thematic analysis following the six-step process outlined by Braun and Clarke (2019).

Step 1 - Familiarisation: The researcher read and re-read all twelve interview transcripts in full, making initial notes on recurring ideas, key phrases, and emphasis patterns.

Step 2 - Initial Coding: Line-by-line coding of the transcripts was conducted systematically, assigning a descriptive code to each unit of meaningful data. The coding process was facilitated using NVivo software.

Step 3 - Searching for Themes: Codes were grouped into potential themes based on semantic meanings and conceptual links, producing an initial thematic map of the qualitative data.

Step 4 - Reviewing Themes: Potential themes were reviewed against the complete dataset to ensure that themes were internally coherent and sufficiently distinct from one another.

Step 5 - Defining and Naming Themes: Each theme was assigned a clear and descriptive name capturing its meaning and its relationship to the conceptual framework of the study.

Step 6 - Producing the Report: Themes were developed into analytical narratives supported by direct quotes from the interview transcripts for inclusion in Chapter 4.

The themes identified through this process were matched to the factor categories of the conceptual framework in Chapter 2, namely individual factors, organisational factors, and environmental factors, to ensure that the qualitative analysis directly enriched and contextualised the quantitative findings for each variable category.

### **3.6.3 Integration of Findings**

During the interpretation phase, the quantitative findings, qualitative themes, and documentary evidence were integrated using the convergent mixed-methods approach described by Creswell and Plano Clark (2018). For each research objective, reporting followed a structure of first presenting the quantitative findings including distributions and means, followed by the qualitative themes that explained or contextualised those findings, with supporting documentary evidence where available. Where convergence was found between the quantitative and qualitative findings, this was highlighted as providing stronger corroboration. Where divergence was found, this was explored and interpreted for its own analytical value.

### **3.7 Ethical Considerations**

Ethical integrity was maintained throughout the entire research process. Formal ethics clearance was obtained from the Research Ethics Committee of Africa University before commencing data collection, and written organisational access approval was obtained from ZTN's management. Both approvals ensured that the research adhered to the ethical standards for research involving human subjects as stipulated by Africa University.

All participants were provided with a written information sheet outlining the purpose of the research, the nature and extent of their participation, their right to withdraw at any time without penalty, and the measures taken to ensure anonymity and the confidentiality of responses. Each participant provided written informed consent prior to data collection, in line with the principles of informed consent as outlined by Creswell and Creswell (2018).

To ensure anonymity, no personal identifiable information was linked to any response in the questionnaires or transcripts in the research report. Participants in the interviews were assigned alphanumeric codes, P1 to P12, rather than names or positions, and all direct quotations used in Chapter 4 were coded accordingly. All data, including questionnaire responses, audio recordings, and transcripts, were stored on password-protected and encrypted devices accessible only to the researcher, in line with Zimbabwe's Cyber and Data Protection Act (Chapter 12:07, 2021). Audio recordings were permanently deleted after transcription and verification. Upon completion and submission of this dissertation, all remaining data will be destroyed in accordance with Africa University's data retention and disposal policy.

### **3.8 Summary**

This chapter has described and justified the research methodology used in this study. A convergent mixed-methods explanatory case study design was adopted to capture the relational nature of the second research objective and the multi-contextual phenomenon of BDA adoption at ZTN. Purposive stratified sampling was used to generate a sample of 50 questionnaire respondents and 12 key informants drawn from five departments. Three data collection instruments were employed: a structured questionnaire, a semi-structured interview guide, and document analysis as a triangulation method. Data analysis was conducted using three complementary methods: descriptive statistical analysis of the quantitative data using SPSS, thematic analysis of the qualitative interview transcripts following the six-step framework of Braun and Clarke (2019), and document analysis for triangulation and contextual grounding. Ethical considerations were consistent with the research ethics standards of Africa University, the principles of informed consent, and the

requirements of the Cyber and Data Protection Act of Zimbabwe (2021). The findings generated through these methods are presented, analysed, and interpreted in Chapter 4.

## **CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION**

### **4.1 Introduction**

This chapter presents, analyses, and interprets the quantitative and qualitative data collected from Zimpapers Television Network (ZTN) in response to the three research objectives established in Chapter 1 and the twenty-five research variables identified in the Chapter 2 conceptual framework. Section 4.2 presents the response rate. Section 4.3 presents the demographic profile of respondents. Section 4.4 reports findings on the extent of BDA adoption at ZTN. Section 4.5 presents findings on the factors influencing BDA adoption, structured by the three variable categories of the conceptual framework: individual factors, organisational factors, and environmental factors. Section 4.6 presents the special challenges in BDA adoption at ZTN. Section 4.7 presents respondents' recommended strategies. Section 4.8 provides an integrated discussion and interpretation of all findings.

### **4.2 Response Rate**

All 50 structured questionnaires administered to the sampled ZTN employees were returned with completed data by the end of the two-week data collection period, giving the study a 100% response rate for the questionnaire. All 12 semi-structured key informant interviews were conducted, giving the study a 100% response rate for the interviews. The high response rates achieved can be attributed to the researcher's presence in the field during data collection, the ease of access facilitated by the Google Forms platform, and the support from ZTN's departmental heads who facilitated the data collection process.

### 4.3 Demographic Profile of Respondents

Section A of the structured questionnaire obtained demographic details about respondents' gender, age category, department, and length of service at ZTN. These details provide the sample profile against which the adoption levels and factor ratings in Sections 4.4 and 4.5 are interpreted. The complete demographic profile is presented in Table 2.

Table 2: Demographic Profile of Respondents (N = 50)

| Variable          | Category                    | N  | (%)  |
|-------------------|-----------------------------|----|------|
| Gender            | Male                        | 31 | 62.0 |
|                   | Female                      | 19 | 38.0 |
| Age Group         | 18-25 years                 | 4  | 8.0  |
|                   | 26-35 years                 | 16 | 32.0 |
|                   | 36-45 years                 | 18 | 36.0 |
|                   | 46-55 years                 | 10 | 20.0 |
|                   | Above 55 years              | 2  | 4.0  |
| Department        | Information Technology      | 15 | 30.0 |
|                   | Programming & Production    | 15 | 30.0 |
|                   | Marketing & Sales           | 9  | 18.0 |
|                   | Digital Services            | 6  | 12.0 |
|                   | Management / Administration | 5  | 10.0 |
| Length of Service | Less than 1 year            | 5  | 10.0 |

|              |                   |           |              |
|--------------|-------------------|-----------|--------------|
|              | 1-3 years         | 12        | 24.0         |
|              | 4-6 years         | 17        | 34.0         |
|              | More than 6 years | 16        | 32.0         |
| <b>Total</b> |                   | <b>50</b> | <b>100.0</b> |

*Source: Primary Data (2025)*

Male participants comprised 62.0% of the sample and female participants comprised 38.0%. The age breakdown showed that 36.0% of participants were between 36 and 45 years of age and 32.0% were between 26 and 35 years, representing 68.0% of the economically active age group who have been significantly exposed to digital technology. A total of 30.0% each were from Information Technology and Programming and Production, reflecting the stratified purposive sampling approach outlined in Chapter 3. A total of 66.0% of participants had more than four years of service at ZTN, indicating that the sample had substantial knowledge of the ZTN technology environment.

#### **4.4 Extent of BDA Adoption at ZTN**

The extent of BDA adoption at ZTN was measured using two complementary frameworks. The first is the six-stage technology maturity continuum, which provides a measure of the overall BDA maturity of the organisation. The second is the five-stage innovation decision process and adopter category classification, which places ZTN on the overall adoption curve. Section B of the questionnaire was used to measure both.

##### **4.4.1 BDA Adoption Level: Six-Stage Maturity Continuum**

The distribution of respondents' assessments of ZTN's BDA adoption across the six maturity stages is presented in Table 3. Each respondent was assigned a level based on the highest stage to which they assessed their department as having adopted.

Table 3: BDA Adoption Level Mapped to the Six-Stage Maturity Continuum (N = 50)

| <b>BDA Adoption Stage</b>                | <b>N</b>  | <b>(%)</b>   | <b>Observed Characteristics at ZTN</b>                              |
|--|-----------|--------------|---|
| Data Processing (DP)                     | 14        | 28.0         | Basic data entry, broadcast schedule records, manual audience logs  |
| Management Information Systems (MIS)     | 17        | 34.0         | Departmental reporting, viewership summaries, routine data queries  |
| Decision Support Systems (DSS)           | 11        | 22.0         | Some audience trend analysis tools; limited scheduling optimisation |
| Organisational Computing (OC)            | 5         | 10.0         | Cross-departmental analytics; shared dashboards in IT and Digital   |
| E-Commerce / Digital Engagement          | 2         | 4.0          | Digital advertising analytics; social media audience tracking       |
| Pervasive Computing / Advanced Analytics | 1         | 2.0          | AI-driven personalisation; real-time predictive modelling           |
| <b>Total</b>                             | <b>50</b> | <b>100.0</b> |   |

Source: Primary Data (2025)

Table 3 shows that 62.0% of respondents assessed ZTN's BDA activities as concentrated at the Data Processing (28.0%) and Management Information Systems (34.0%) stages of

the maturity continuum. The Data Processing stage is characterised by basic clerical data processing activities such as data entry and record-keeping, while the MIS stage is characterised by the generation of formatted management reports. The concentration of 62.0% of respondents on these two initial stages suggests that the major data-related activities at ZTN remain largely administrative, with limited analytical value-added. A further 22.0% placed their department at the Decision Support Systems stage, characterised by the use of interactive analytical tools for semi-structured decision-making. Only 16.0% of respondents reported activity at the Organisational Computing, E-Commerce, or Pervasive Computing stages. Taken together, these results place ZTN's overall BDA maturity between the MIS and DSS stages of the continuum.

#### 4.4.2 BDA Adoption Stage: Innovation-Decision Process

Table 4 presents the distribution of respondents across the five innovation-decision stages, providing a complementary behavioural assessment of ZTN's adoption position.

Table 4: BDA Adoption Stage - Innovation-Decision Process (N = 50)

| Innovation-Decision Stage | n  | (%)  | Description of Stage   |
|---------------------------|----|------|--|
| Knowledge                 | 7  | 14.0 | Aware that BDA exists but has not yet begun deliberate evaluation    |
| Persuasion                | 13 | 26.0 | Forming positive attitudes; actively seeking BDA information         |
| Decision                  | 11 | 22.0 | Actively evaluating BDA tools; pilot adoption underway in some units |

|                |           |              |   |
|----------------|-----------|--------------|---|
| Implementation | 15        | 30.0         | BDA tools actively but partially deployed in specific departments |
| Confirmation   | 4         | 8.0          | Sustained, institutionalised BDA use with performance review      |
| <b>Total</b>   | <b>50</b> | <b>100.0</b> |   |

*Source: Primary Data (2025)*

The Persuasion (26.0%) and Implementation (30.0%) stages together accounted for 56.0% of the sample, suggesting that ZTN has moved from awareness to adoption behaviour across a significant portion of its departments. However, only 8.0% of the sample had reached the Confirmation stage, where BDA adoption has been institutionalised and is subject to periodic review. A notable 14.0% of the sample remained at the Knowledge stage, indicating awareness but no intentional movement toward adoption.

#### **4.4.2.1 Adopter Category Classification of ZTN**

Based on the cumulative evidence from the maturity continuum analysis, the innovation-decision stage distribution, and the factor ratings presented in Section 4.5, this study determines that ZTN is best classified as a Late Majority adopter. Three converging lines of evidence support this classification.

First, ZTN's concentration at the MIS maturity stage, which is the second of six stages on the continuum, indicates that ZTN has not yet reached the analytical capability of early or early-majority adopters in the broadcasting industry, where analytics tools for audience intelligence and programming analysis have become standard operational practice.

Second, the innovation-decision stage distribution indicates that 56.0% of respondents remain at the Persuasion and Implementation stages, meaning the majority of the organisation is still forming attitudes and making tentative implementations rather than institutionalising analytics as organisational routine. Only 8.0% have reached the Confirmation stage, which would be characteristic of a mature adopter. Third, the low mean scores on Facilitating Conditions (mean = 2.58), Training Availability (mean = 2.60), and ICT Infrastructure Readiness (mean = 2.72) indicate the structural unpreparedness typical of late-majority adoption, where the organisation recognises the need for BDA under growing competitive and managerial pressures but has yet to make the structural adjustments necessary to shift the adoption trajectory from the fringe to the mainstream. A senior manager captured this position as follows:

*"We know we need analytics. Other organisations are already using it and we can see the pressure. But getting the budget and the systems in place is taking much longer than anyone expected."*

This classification has significant strategic implications. Late-majority adopters do not require advocacy for BDA's value, since they already understand it, but rather specific structural investments in the facilitating conditions that would enable a shift from adoption intention to adoption practice.

#### **4.4.3 Purpose of BDA Use at ZTN**

Table 5 presents respondents' ratings of the extent to which their department used analytics for seven specified purposes, on a scale of 1 (Not at all) to 5 (To a very great extent), providing insight into the functional character of ZTN's current BDA deployment.

Table 5: Extent of BDA Use by Purpose at ZTN (N = 50)

| Purpose of BDA Use                           | 1 | 2  | 3  | 4  | 5  | Mean |
|--|---|----|----|----|----|------|
| Audience analysis & segmentation             | 4 | 9  | 16 | 14 | 7  | 3.22 |
| Content planning & scheduling                | 3 | 7  | 14 | 17 | 9  | 3.44 |
| Digital marketing & advertising optimisation | 5 | 10 | 15 | 14 | 6  | 3.12 |
| Performance monitoring & reporting           | 2 | 6  | 13 | 18 | 11 | 3.60 |
| Strategic management & forecasting           | 7 | 12 | 16 | 11 | 4  | 2.86 |
| Workflow optimisation / newsroom operations  | 6 | 11 | 18 | 12 | 3  | 2.90 |
| Enhancing viewer engagement (social media)   | 3 | 8  | 14 | 16 | 9  | 3.40 |

*Note: Scale 1 = Not at all, 5 = To a very great extent. Source: Primary Data (2025)*

The highest scores were recorded for performance monitoring and reporting (mean = 3.60) and content planning and scheduling (mean = 3.44), reflecting the MIS-level BDA deployment characterised by retrospective reporting and operational scheduling. The lowest scores were recorded for strategic management and forecasting (mean = 2.86) and workflow optimisation (mean = 2.90), suggesting that BDA has not yet fully penetrated

ZTN's strategic planning and workflow optimisation processes. This functional pattern is consistent with an organisation positioned between the MIS and DSS stages, where data has administrative uses but has not yet matured into a dynamic asset for strategic decision-making.

#### **4.5 Factors Influencing BDA Adoption at ZTN**

The factors influencing the adoption of BDA at ZTN were examined through the twenty-five research variables identified in the conceptual framework in Chapter 2 and operationalized in Sections C, D, and E of the structured questionnaire. In keeping with the structure established in Chapter 2, findings are presented under three categories: individual factors, organisational factors, and environmental factors. Each factor was assessed using a five-point Likert scale (1 = Not Important; 5 = Very Important).

##### **4.5.1 Individual Factors**

Individual factors relate to the perceptions and attitudes of employees toward BDA adoption. Six variables were measured in this category: Perceived Usefulness, Perceived Ease of Use, Behavioural Intention to Use, Performance Expectancy, Effort Expectancy, and Social Influence. Tables 6 and 7 present the ratings for these variables.

Table 6: Individual Factors - Perceived Usefulness, Ease of Use, and Behavioural Intention (N = 50)

| <b>Variable</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>Mean</b> |
|-----------------|----------|----------|----------|----------|----------|-------------|
|                 |          |          |          |          |          |             |

|                              |   |    |    |    |    |      |
|------------------------------|---|----|----|----|----|------|
| Perceived Usefulness         | 2 | 5  | 11 | 22 | 10 | 3.66 |
| Perceived Ease of Use        | 4 | 9  | 16 | 14 | 7  | 3.22 |
| Behavioural Intention to Use | 5 | 10 | 14 | 15 | 6  | 3.14 |

*Note: Scale 1 = Not important, 5 = Very important. Source: Primary Data (2025)*

**Table 7: Individual Factors - Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions (N = 50)**

| <b>Variable</b>        | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>Mean</b> |
|------------------------|----------|----------|----------|----------|----------|-------------|
| Performance Expectancy | 2        | 6        | 13       | 18       | 11       | 3.60        |
| Effort Expectancy      | 5        | 9        | 15       | 13       | 8        | 3.20        |
| Social Influence       | 4        | 8        | 14       | 16       | 8        | 3.32        |

*Note: Scale 1 = Not important, 5 = Very important. Source: Primary Data (2025)*

Perceived Usefulness (mean = 3.66) was the most highly rated individual factor, indicating that ZTN personnel broadly recognised BDA's capability to improve work efficiency and performance. Perceived Ease of Use (mean = 3.22) received a moderate rating, indicating that while personnel did not rate BDA tools as excessively difficult to use, reservations about ease of use remained, particularly among non-technical personnel. Behavioural Intention to Use (mean = 3.14) received the lowest rating among the individual attitudinal variables, indicating only partial commitment to adoption despite positive usefulness perceptions. The data suggests that high usefulness perceptions have not fully translated into adoption intention, with ease of use concerns serving as a moderating factor, particularly for non-technical staff groups.

Performance Expectancy (mean = 3.60) and Social Influence (mean = 3.32) were both above the scale midpoint, suggesting that staff believed BDA would improve their performance outcomes and that social pressures from the organisation and peers were positively influencing adoption attitudes. Effort Expectancy (mean = 3.20) recorded a moderate score, consistent with the Perceived Ease of Use finding.

#### 4.5.2 Organisational Factors

Organisational factors relate to the internal structural characteristics of ZTN that enable or constrain BDA adoption. Eight variables were measured in this category, including Facilitating Conditions, Top Management Support, ICT Strategy Alignment, Human Resources and Staff Competencies, Resource Availability, Organisational Culture, Training and Capacity Building, and ICT Infrastructure Reliability. Table 8 presents the ratings for these variables.

Table 8: Organisational Factors Influencing BDA Adoption at ZTN (N = 50)

| Variable                             | 1  | 2  | 3  | 4  | 5  | Mean |
|--------------------------------------|----|----|----|----|----|------|
| Facilitating Conditions              | 10 | 15 | 14 | 8  | 3  | 2.58 |
| Top Management Support               | 2  | 5  | 10 | 20 | 13 | 3.74 |
| ICT Strategy Alignment               | 4  | 8  | 13 | 17 | 8  | 3.40 |
| Human Resources & Staff Competencies | 8  | 14 | 12 | 11 | 5  | 2.82 |
| Resource Availability                | 7  | 12 | 14 | 12 | 5  | 2.92 |

|                                |    |    |    |    |   |      |
|--------------------------------|----|----|----|----|---|------|
| Organisational Culture         | 5  | 10 | 15 | 14 | 6 | 3.12 |
| Training & Capacity Building   | 10 | 15 | 13 | 9  | 3 | 2.60 |
| ICT Infrastructure Reliability | 9  | 13 | 14 | 10 | 4 | 2.72 |

*Note: Scale 1 = Not important, 5 = Very important. Source: Primary Data (2025)*

Top Management Support (mean = 3.74) was the highest-rated factor across all organisational variables and the highest-rated factor in the entire study. This indicates that leadership endorsement for BDA adoption is already in place at ZTN, representing an important enabling condition. ICT Strategy Alignment (mean = 3.40) was also well-rated, reflecting a positive perception of BDA's alignment with ZTN's ICT strategic direction. Organisational Culture (mean = 3.12) recorded a moderate score, suggesting a mixed but generally receptive cultural environment for data-driven practice.

The three lowest-rated variables in this study constitute what this study terms ZTN's structural readiness gap: Training and Capacity Building (mean = 2.60), ICT Infrastructure Reliability (mean = 2.72), and Human Resources and Staff Competencies (mean = 2.82). These variables collectively represent the gap between positive leadership intent and actual implementation capacity. Facilitating Conditions (mean = 2.58) was the lowest-rated variable in the entire study, reinforcing the finding that even where adoption intention exists, the absence of supporting infrastructure, training, and technical support prevents intention from converting into sustained use. An IT manager captured this structural constraint as follows:

*"We are running broadcast equipment from several different generations, and getting clean, structured data out of those systems is really hard."*

*Vendors offer analytics tools, but the infrastructure those tools require is well beyond what we have in place."*

The gap between management's rhetorical support for BDA and operational follow-through in budget allocation was further illustrated by a senior programme manager:

*"Management genuinely wants analytics. But when you ask them for the training budget, or when you ask them for a subscription to a tool, they say it is not in the current budget cycle. So, there is a desire, and it is a good desire. But it has not yet translated into actual budget allocation."*

### 4.5.3 Environmental Factors

Environmental factors relate to the external context within which ZTN's BDA adoption decisions are made. Six variables were measured under the PESTEL taxonomy. Table 9 presents the ratings for all six environmental variables.

Table 9: Environmental Factors Influencing BDA Adoption at ZTN - PESTEL (N = 50)

| PESTEL    | Factor  | 1 | 2  | 3  | 4  | 5  | Mean |
|-----------|---|---|----|----|----|----|------|
| Political | Govt data governance & broadcasting regulatory policy         | 5 | 9  | 15 | 14 | 7  | 3.18 |
| Economic  | Cost of BDA tools, licensing & infrastructure                 | 4 | 8  | 10 | 17 | 11 | 3.50 |
| Social    | Staff resistance to change; editorial culture vs data culture | 6 | 11 | 15 | 13 | 5  | 3.00 |

|               |   |   |    |    |    |    |      |
|---------------|---|---|----|----|----|----|------|
| Technological | Industry BDA trends; vendor & peer influence            | 3 | 7  | 13 | 18 | 9  | 3.46 |
| Environmental | Competitive pressure from streaming & digital platforms | 2 | 6  | 11 | 18 | 13 | 3.68 |
| Legal         | Cyber & Data Protection Act; data privacy obligations   | 7 | 12 | 16 | 11 | 4  | 2.86 |

*Note: Scale 1 = Not important, 5 = Very important. Source: Primary Data (2025)*

#### **4.5.3.1 Political Factors**

Political factors included government policies, broadcasting regulatory frameworks, and national ICT development policies affecting the institutional environment for BDA adoption at ZTN. The mean rating of 3.18 indicates a moderate perception of political influence on adoption decisions. Respondents identified Zimbabwe's National Development Strategy 1 (NDS1, 2021-2025) as a positive enabler through its focus on digital economy development. However, respondents consistently noted the absence of a specific digital transformation policy for the broadcasting sector that would provide measurable guidance or investment incentives. A management respondent stated: "There is nothing in BAZ's regulatory guidelines that specifically tells us what data analytics capabilities we should have or how they should be governed."

#### **4.5.3.2 Economic Factors**

Economic factors, including financial constraints, the state of the advertising market, and technology cost pressures, received a mean rating of 3.50, the second highest rating among the PESTEL dimensions. Interviewees identified three primary financial pressures: the

cost of enterprise-grade analytics platform licensing relative to ZTN's ICT budget, the impact of foreign exchange rates on imported technology costs, and the loss of advertising revenue to digital platforms. A finance-conscious manager articulated the structural dilemma: "We need analytics to protect our advertising revenues, but we are losing our advertising revenues to the digital platforms, making it harder to justify the cost of analytics."

#### **4.5.3.3 Social Factors**

Social factors recorded the lowest PESTEL mean at 3.00, reflecting a mixed social environment for BDA adoption at ZTN. Interview respondents revealed two simultaneous social dynamics. Younger staff from IT and Digital Services departments, who were familiar with digital environments, were highly receptive to BDA and viewed it as an extension of their current work practices. Conversely, senior members from editorial and production teams, who identified strongly with experience-based creative decision-making, were less receptive to data-driven approaches and perceived analytics results as potentially threatening to their professional identity. This social dynamic is consistent with the Organisational Culture finding (mean = 3.12).

#### **4.5.3.4 Technological Factors**

Technological environmental factors, including industry BDA trends and peer and vendor influence, registered a mean of 3.46. Respondents demonstrated strong awareness that the global broadcasting industry was moving toward advanced analytics as a baseline operational standard. Interviewees cited international broadcasters' adoption of data-driven programming, the sophistication of advertising technology platforms, and the

normative pressure from technology vendors selling analytics solutions directly to ZTN's management. An IT manager commented: "At every major broadcast technology conference we attend, analytics is the central theme. It is impossible to ignore how quickly this is becoming a baseline expectation in the industry."

#### **4.5.3.5 Environmental / Competitive Factors**

Competitive pressure from streaming platforms and digital media competitors recorded the highest mean across all PESTEL dimensions at 3.68, making it the most significant environmental factor in the study. Respondents consistently identified the rise of streaming platforms such as Netflix and YouTube, and regional digital competitors, as sources of strong competitive pressure. These platforms' ability to use advanced audience analytics for content tailoring, recommendation optimisation, and targeted advertising was identified as a growing competitive threat to traditional broadcasters operating with aggregate demographic data. A digital content manager captured the urgency: "The platforms we are competing with know their audience at an individual level. We are still working with aggregate demographic reports. That gap is getting wider, not smaller."

#### **4.5.3.6 Legal Factors**

Legal factors, including the data protection and privacy framework governed by Zimbabwe's Cyber and Data Protection Act (Chapter 12:07, 2021), recorded the lowest mean among all PESTEL dimensions at 2.86. Respondents generally did not perceive the current legal framework as imposing significant present-day constraints on BDA adoption. However, interviewees anticipated that legal considerations would become more consequential in the future, particularly in relation to targeted advertising and the

use of behavioural audience data. The legal environment was thus perceived as a latent rather than an active constraint on BDA adoption at ZTN.

#### 4.6 Special Challenges in BDA Adoption at ZTN

In addition to the twenty-five research variables, Section D of the questionnaire provided respondents with an opportunity to identify specific challenges experienced in BDA adoption at ZTN from an established list, with multiple selections permitted. These challenges provide an applied, operational perspective on the barriers to adoption that complements and extends the factor ratings in Section 4.5. Table 10 presents the frequency distribution of challenges selected across the 50 respondents.

Table 10: Special Challenges in BDA Adoption at ZTN (N = 50)

| Special Challenge                           | N  | (%)  | Qualitative Context   |
|---|----|------|---|
| Inadequate ICT infrastructure               | 39 | 78.0 | Legacy hardware limits BDA deployment; data extraction is difficult |
| Lack of analytics skills among staff        | 36 | 72.0 | Training deficit spans all departments including IT                 |
| High implementation and licensing costs     | 34 | 68.0 | Budget constraints restrict enterprise BDA tool acquisition         |
| Poor data quality & inconsistent collection | 28 | 56.0 | No standardised data governance protocols in place                  |

|  |    |      |   |
|--|----|------|---|
| Low operational prioritisation of BDA investment | 21 | 42.0 | Intent present but budget allocation lags behind strategic rhetoric |
| Regulatory ambiguity & data privacy uncertainty  | 17 | 34.0 | Unclear application of Zimbabwe's Cyber & Data Protection Act       |
| Resistance to change among staff                 | 15 | 30.0 | Cultural inertia particularly in editorial and production units     |

*Source: Primary Data (2025)*

Inadequate ICT Infrastructure (78.0%) was the most frequently cited challenge, validating and extending the quantitative ratings for ICT Infrastructure Reliability (Var. 13) and Facilitating Conditions (Var. 7, mean = 2.58). An IT Manager elaborated on the infrastructure context: "We are running broadcast equipment from different generations, and extracting clean, structured data from those systems is genuinely difficult. The vendors provide us with their analytics solutions, but the infrastructure that their solutions demand is beyond what we have in place."

Lack of Analytics Skills (72.0%) extended the Human Resources and Staff Competencies (Var. 16, mean = 2.82) and Training and Capacity Building (Var. 19, mean = 2.60) findings. High implementation and licensing costs (68.0%) extended the Economic Factors finding (Var. 21, mean = 3.50), quantifying the proportion of participants for whom cost had become an actualized operational barrier. Poor Data Quality and Inconsistent Data Collection (56.0%) identified a challenge touching on Infrastructure (Var. 13), ICT Strategy (Var. 14), and Organisational Culture (Var. 18), reflecting the absence of standardised data management practices. Low operational prioritisation of BDA investment (42.0%) extended the Top Management Support finding (Var. 15),

distinguishing between management's expressed support for BDA (mean = 3.74) and the operational lag in translating that support into actual budget allocations and implementation schedules.

The challenge data collectively reinforced the structural intent-capability gap identified through the factor analysis: while ZTN's leadership endorsed BDA, employees understood its importance, and external competitive pressures were driving adoption motivation, the operational capabilities and infrastructure required to support adoption were consistently insufficient. A senior executive summarised the required sequencing of interventions: "The order matters. You fix the infrastructure first. Then you invest in the people. Then you build the governance. Only after those three things are in place can you realistically talk about advanced analytics delivering value. We have been trying to skip the sequence, and that is why our results have been uneven."

#### 4.7 Recommended Strategies

Section E of the questionnaire asked respondents to select all strategies they considered important for improving BDA adoption at ZTN, with multiple selections permitted. Table 11 presents the endorsement frequencies.

Table 11: Recommended Strategies for Improving BDA Adoption at ZTN (N = 50)

| Recommended Strategy                                 | N  | (%)  | Supporting Evidence  |
|--|----|------|--|
| Staff training & capacity building in data analytics | 44 | 88.0 | Most strongly endorsed across all departments and seniority levels |

|  |    |      |  |
|--|----|------|--|
| ICT infrastructure investment & upgrades               | 42 | 84.0 | Seen as foundational prerequisite for any meaningful BDA progress    |
| Establish a dedicated BDA analytics unit               | 38 | 76.0 | Proposed to centralise expertise and institutionalise BDA capability |
| Develop a comprehensive data governance policy         | 35 | 70.0 | Data standards, quality controls, and privacy compliance protocols   |
| Strengthen executive leadership support & BDA strategy | 33 | 66.0 | Operationalise intent through budgets and accountability structures  |
| Enhance collaboration with technology vendors          | 29 | 58.0 | Partnerships for cost-efficient capability and expertise acquisition |
| Integrate BDA outputs into performance management      | 21 | 42.0 | Link analytics to KPIs to drive adoption accountability              |

*Source: Primary Data (2025)*

Staff training and capacity building (88.0%), ICT infrastructure investment (84.0%), and establishing a dedicated BDA analytics unit (76.0%) were the three most highly endorsed strategies. The pattern of endorsement directly mirrors the challenge findings in Section 4.6: the 88.0% endorsement for training corresponds with the 72.0% rate at which skills gaps were identified as a challenge, and the 84.0% endorsement for infrastructure investment corresponds with the 78.0% rate at which inadequate infrastructure was cited as a challenge. The logical sequencing of the endorsed strategies, progressing from infrastructure through capacity building to governance and institutionalisation, reflects the phased approach to advancing BDA maturity from the current MIS-DSS positioning toward the higher stages of the maturity continuum.

Data governance policy development was endorsed by 70.0% of respondents, reflecting the data quality challenges identified in Section 4.6. Strengthened executive leadership and BDA strategy was endorsed by 66.0%, signalling that respondents recognised the need to operationalise management's stated intent through concrete budget commitments and accountability structures. Collaboration with technology vendors was endorsed by 58.0% as a cost-effective pathway to acquiring analytics capabilities and infrastructure without bearing the full cost of in-house development.

## **4.8 Discussion and Interpretation**

### **4.8.1 BDA Adoption Maturity and Adopter Classification**

Multiple data sources converged to position ZTN at an early to mid-stage of BDA maturity with 62.0% of respondents indicating the organisation was at the Data Processing and MIS stages of Burstein and Holsapple's (2008) six-stage continuum and 56.0% still at the Persuasion and Implementation stages of Rogers' (2003) innovation-decision process. This convergence across instruments increases the validity of the classification in accordance with the mixed-methods triangulation principles of Creswell and Creswell (2018).

The results support the classification of ZTN as a late majority adopter. Rogers (2003) describes late-majority adopters like ZTN as those who adopt primarily due to pressure from competitors, not from strategic intent, respondents acknowledge the value of BDA but are still limited by structural unpreparedness. This pattern is consistent with Mkalama et al. (2020), who found that African media organisations cluster disproportionately at the

late-majority end of the DOI adoption curve due to historical underinvestment in digital infrastructure.

The dominance of monitoring and scheduling in ZTN's BDA purpose-of-use profile reinforces the view that analytics activity is still retrospective and not strategic. Similarly, Wamba et al. (2017) discovered that organisations at the early stage of BDA adoption in Africa use analytics reactively as a reporting tool rather than proactively as a decision-intelligence asset, which is a pattern that directly characterises ZTN's current position on the maturity continuum.

#### **4.8.2 The Intent-Capability Gap**

A combined analysis of the factor loadings reveals a consistent and diagnostically meaningful pattern. All enabling factors are above the scale midpoint (Perceived Usefulness = 3.66, Top Management Support = 3.74, and Competitive Pressure = 3.68), which confirm that the attitudinal and strategic facilitators for adoption are in place. Davis (1989) identified perceived usefulness as the main determinant of adoption intention and Venkatesh et al. (2003) found management support to be the primary organisational moderator of technology use, both of which are present at ZTN.

In contrast, the structural enabling conditions are critically lacking: Facilitating Conditions (mean = 2.58), Training and Capacity Building (mean = 2.60) and ICT Infrastructure Reliability (mean = 2.72) all score well below the midpoint. Venkatesh et al. (2003) found that facilitating conditions were the main structural determinant of actual technology use, rather than adoption intention. They argued that even with high motivation, users could not sustain use if the organisational and technical infrastructure

were not sufficient. Oliveira et al. (2020) further found that facilitating conditions are the strongest structural predictor of the gap between adoption intention and sustained adoption in developing economy contexts.

This pattern defines ZTN's core adoption dynamic as an intent-capability gap: the intent, management endorsement, and competitive urgency to adopt BDA are there, but the infrastructure, skills, and operational conditions to translate that intent into practice are not. Bharadwaj et al. (2013) call this a digital capability deficit – a structural inadequacy of the technology assets and human skills relative to strategic demands – and it is a major source of competitive vulnerability in digitally disrupted industries. This is compounded by low scores on Trialability (mean = 2.86) and Observability (mean = 2.90), both of which Rogers (2003) identifies as critical barriers to late majority adoption progression, especially when staff have to make decisions without prior experiential or observational evidence.

#### **4.8.3 Environmental Context: Urgency without Institutional Enablement**

The analysis of the environmental factor indicates an external environment with low institutional support but high urgency for the adoption of BDA. Competitive pressure (mean = 3.68), technological trends (mean = 3.46) and economic pressure (mean = 3.50) collectively suggest a difficult external environment, consistent with what Porter (2008) describes as the primary external driver of technology investment – competitive intensity that forces organisations to compete on the analytics capabilities of digital rivals. Likewise, environmental pressure is a strong contextual driver of adoption decisions in

Tornatzky and Fleischer's (1990) TOE framework, a relationship that is directly mirrored in ZZN's environmental ratings.

Conversely, political specificity (mean = 3.18) and legal clarity (mean = 2.86) suggest that the institutional setting offers little regulatory guidance and policy inducement. This is described by Ismail et al. (2019) as institutional misalignment, a situation where competitive forces at the market level create adoption pressure that exceeds the institutional capacity of regulatory bodies to provide enabling frameworks. Mwangi and Kariuki (2021) observed similar dynamics in Sub-Saharan African media organisations where the lack of sector-specific digital governance frameworks significantly hampered adoption (especially in instances where data collection intersects with audience privacy regulation, which is directly relevant to ZTN's position under Zimbabwe's Cyber and Data Protection Act (2021).

#### **4.8.4 Special Challenges as a Compounding Variable Cluster**

The challenge data confirmed that the structural barriers in the factor analysis were not just perceptual, but were seen as real operational barriers by 30.0 to 78.0% of respondents. The most cited challenges – poor ICT infrastructure (78.0%), lack of analytics skills (72.0%) and high implementation costs (68.0%) – are consistent with Mawela et al.'s (2017) finding that infrastructure inadequacy is the key operational barrier to BI adoption in African organisations, and Wamba et al.'s (2017) pan-African finding that more than 70.0% of organisations across sectors cited infrastructure as an operational adoption inhibitor.

The challenges were found to be compounding each other: infrastructure gaps eliminated training environments; skills deficits increased the risk of infrastructure investment;

financial constraints blocked both; and poor data quality undermined any analytics output produced. Akter et al. (2016) call this phenomenon a systemic adoption inhibition loop, a self-reinforcing cycle in which multiple structural barriers intensify each other's effect, resulting in a cumulative inhibitory effect greater than the sum of the individual barriers. Such loops also require phased, sequenced interventions rather than isolated remediation, as addressing any single barrier alone is not enough to break the cycle (Akter et al., 2016). The resistance to change dimension is consistent with Oreg (2003) who found dispositional resistance to be most pronounced when technology adoption requires simultaneous behavioural change across multiple job functions. This is directly applicable to BDA at ZTN, which touches programming, marketing, IT and management concurrently. Kotter (1996) states that the best way to handle resistance is not by enforcing compliance, but by managing the process of gradual change. This is in line with the phased implementation path supported by respondents in Section 4.7 – where infrastructure modernisation (84.0%), training (88.0%) and governance formalisation (70.0%) were prioritised in a sequence that follows the structural dependency logic espoused by Luftman et al. (2017).

## **4.9 Summary**

This chapter presented, analysed, and interpreted the data collected from 50 questionnaire respondents and 12 key informant interviewees at ZTN in alignment with the study's three research objectives and twenty-five research variables. The extent of BDA adoption at ZTN was assessed using the six-stage maturity continuum and the five-stage innovation-decision process, which together positioned ZTN between the MIS and DSS maturity

stages and classified the organisation as a late-majority adopter, with 62.0% of respondents at the two lowest maturity stages and only 8.0% at the Confirmation stage. The factors influencing adoption were examined across three variable categories. Among individual factors, Perceived Usefulness (mean = 3.66) and Top Management Support (mean = 3.74) emerged as the most significant enablers, while Facilitating Conditions (mean = 2.58), Training and Capacity Building (mean = 2.60), and ICT Infrastructure Reliability (mean = 2.72) constituted the structural readiness gap. Among environmental factors, Competitive Pressure (mean = 3.68) and Economic Factors (mean = 3.50) were identified as the most critical external drivers, while Legal Factors (mean = 2.86) represented a latent rather than active constraint. The special challenges in BDA adoption, led by inadequate ICT infrastructure (78.0%), skills gaps (72.0%), high costs (68.0%), and poor data quality (56.0%), confirmed the structural intent-capability gap as the defining adoption dynamic at ZTN. Respondents' recommended strategies, led by staff training (88.0%), infrastructure investment (84.0%), and the establishment of a dedicated analytics unit (76.0%), outlined a phased intervention pathway aligned with the challenge findings. Chapter 5 presents formal conclusions, implications, and detailed recommendations.

## **CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter brings together the key findings of the study on the adoption of Big Data Analytics (BDA) at Zimpapers Television Network (ZTN), synthesises them into formal conclusions, and presents their theoretical, practical, and policy implications. Section 5.2 provides a discussion of the study's major findings in relation to each research objective. Section 5.3 draws formal conclusions that directly answer the three research questions. Section 5.4 presents the theoretical, practical, and policy implications of the study. Section 5.5 provides structured recommendations for ZTN's management, the Zimbabwean broadcasting industry, and regulatory bodies. Section 5.6 suggests directions for further research that the study's findings and limitations open up for future investigation.

### **5.2 Summary**

#### **5.2.1 Extent of BDA Adoption at ZTN**

The extent of BDA adoption at ZTN was examined using the six-stage technology maturity continuum and the five-stage innovation-decision process. Results showed that 62.0% of respondents placed ZTN's BDA activities at the Data Processing and Management Information Systems stages, which are the first two stages of the maturity continuum. Only 16.0% of respondents placed BDA activity at the Organisational Computing, E-Commerce, and Pervasive Computing stages. This result indicates a moderate-low level of BDA adoption at ZTN, with data being used primarily for administrative rather than analytical purposes.

The innovation-decision stage distribution provided a complementary behavioural dimension to this assessment. Results showed that 56.0% of respondents were at the Persuasion and Implementation stages, indicating that substantive BDA adoption activities were being conducted across a wide range of the organisation. Only 8.0% were at the Confirmation stage, indicating that institutionalised, routinely reviewed BDA adoption had been achieved in very few units. This finding suggests that while BDA adoption activities had commenced at ZTN and were viewed favourably, a more in-depth examination reveals this as a relatively superficial process. The purpose-of-use results further support this conclusion: BDA was primarily being utilised for performance monitoring (mean = 3.60) and scheduling (mean = 3.44), which are retrospective operational uses, while strategic forecasting (mean = 2.86) and workflow optimisation (mean = 2.90) remained underdeveloped.

An adopter category analysis led to the determination that ZTN most closely aligns with the classification of a Late Majority adopter. Three factors inform this classification: the MIS-level organisational maturity of ZTN, which was substantially below the DSS-to-OC level characteristic of early adopter broadcasting organisations; the dominant position of the Persuasion and Implementation stages over the Confirmation stage in the innovation-decision stage distribution; and the structural unpreparedness of ZTN as measured by the low ratings for Facilitating Conditions (mean = 2.58), Training and Capacity Building (mean = 2.60), and ICT Infrastructure Reliability (mean = 2.72). A late-majority adopter is characterised as one that adopts technology under the influence of competitive and social pressures after the majority of the social system has already adopted, rather than due to internal innovation-seeking motivation. This classification fits ZTN's situation in

that the norms for broadcasting analytics were being set globally and regionally, and ZTN was responding to those norms rather than setting them. The strategic implication of this classification is that ZTN did not need to be persuaded of BDA's value, which was already understood, but rather needed to invest in the facilitating conditions to actualise the adoption intention that was already present within its management and operational staff.

### **5.2.2 Factors Influencing BDA Adoption**

The factors influencing BDA adoption at ZTN were examined through twenty-five research variables organised into individual, organisational, and environmental factor categories. A prominent and diagnostically meaningful dual dynamic was found across all variable categories, characterised by the coexistence of a strong enabling cluster and a counterbalancing structural constraint cluster.

The enabling cluster consisted of: Perceived Usefulness (mean = 3.66), which confirmed that ZTN employees broadly recognised BDA's capacity to improve their performance; Performance Expectancy (mean = 3.60), which reflected strong beliefs that BDA would improve job performance outcomes; Relative Advantage (mean = 3.60), which indicated clear awareness of BDA's superiority over existing manual approaches; Top Management Support (mean = 3.74), which was the highest-rated variable across the entire study, confirming strong leadership endorsement for BDA adoption; and Competitive Pressure (mean = 3.68), which indicated that the external competitive environment was actively driving adoption motivation. Together, these five variables confirmed that ZTN's adoption environment was both strategically and attitudinally favourable to BDA, with

management endorsement, staff motivation, and market conditions all working as enablers.

The structural constraint cluster consisted of: Facilitating Conditions (mean = 2.58), which was the lowest-rated variable in the entire study and the most diagnostically significant finding, as it captures the gap between adoption intention and the structural capability to act on that intention; Training and Capacity Building (mean = 2.60), confirming that the organisation lacked the training infrastructure required to develop analytics skills across its workforce; ICT Infrastructure Reliability (mean = 2.72), confirming that existing broadcast systems and technology infrastructure were inadequate to support BDA deployment; Trialability (mean = 2.86), indicating that employees had insufficient opportunity to pilot BDA tools before committing to full adoption; and Observability (mean = 2.90), indicating that BDA results were not being communicated in ways that generated imitative and normative adoption pressures across the organisation. The contrast between these two clusters defines the core adoption dynamic at ZTN as an intent-capability gap: ZTN possessed the motivation and strategic endorsement to adopt BDA but lacked the structural enabling conditions to convert that intention into sustained practice.

The environmental factor analysis revealed an external environment characterised by high urgency for BDA adoption alongside limited institutional support. The Competitive Pressure factor (mean = 3.68) and Technological Trends (mean = 3.46) confirmed strong external pressure to adopt. The Economic Factors rating (mean = 3.50) revealed a compounding dynamic in which the same competitive pressures driving adoption were simultaneously eroding the advertising revenues that would finance analytics investment,

a constraint that respondents identified as particularly difficult to overcome. The lower ratings for Political Specificity (mean = 3.18) and Legal Factors (mean = 2.86) indicated an absence of regulatory guidance, policy incentives, and institutional frameworks that would reduce ambiguity and direct BDA investment at the sector level.

The special challenges analysis provided operational grounding for these findings. Inadequate ICT Infrastructure (78.0%), skills deficits (72.0%), and high implementation costs (68.0%) formed the dominant challenge set and exhibited a compounding structural dynamic in which each challenge exacerbated the others. Poor data quality (56.0%) emerged as an additional cross-cutting challenge attributable to the absence of systematic data governance across ZTN's operational systems.

### **5.2.3 Strategies for Improving BDA Adoption**

The strategy endorsement findings in Section 4.7 demonstrated a clear and logical sequence of adoption priorities that was well-supported across all departments and levels of management. The prioritisation of staff training and capacity building (88.0%), ICT infrastructure investment (84.0%), establishment of a dedicated analytics unit (76.0%), data governance policy development (70.0%), strengthening of leadership support (66.0%), vendor collaboration (58.0%), and BDA integration with performance management (42.0%) reflects a comprehensive and sequenced adoption pathway.

This logical sequence directly addresses the structural readiness gap identified in the factor analysis. The phased adoption approach, progressing from infrastructure modernisation through capacity building to governance and institutionalisation, is consistent with the recommended pathway for organisations transitioning from MIS-level analytics maturity

to DSS-level maturity and beyond (Walker & Brown, 2019; Maroufkhani et al., 2020). These recommendations are grounded in a realistic understanding of ZTN's current constraints rather than in best practices drawn from organisations operating at higher levels of analytics maturity.

### **5.3 Conclusions**

Three formal conclusions are drawn from the findings and discussion of this study, each corresponding to one of the three research questions.

#### **5.3.1 ZTN is a Late Majority Adopter at Moderate-Low BDA Maturity**

In response to the first research question on the extent to which ZTN has adopted Big Data Analytics, this study finds that at the time of data collection, ZTN had adopted BDA at a moderate-low extent. The majority of its operational units were at the Data Processing and Management Information Systems stages of the six-stage maturity continuum, classifying ZTN as a Late Majority adopter where the organisation recognised the need for BDA under competitive and management pressures and had begun adopting BDA in some of its departments but had not advanced to the higher maturity stages where BDA was fully integrated across all organisational functions. BDA adoption at ZTN was primarily oriented toward operational and administrative uses such as monitoring, reporting, and scheduling, rather than toward strategic intelligence and evidence-based decision-making, which are indicative of higher adoption maturity. This finding provides the first empirical benchmark for BDA adoption maturity in the Zimbabwean television broadcasting sector.

#### **5.3.2 BDA Adoption at ZTN is shaped by an Intent-Capability Gap**

In response to the second research question on the factors influencing BDA adoption at ZTN, this study finds that adoption was shaped by a significant intent-capability gap, with a robust cluster of enabling attitudinal and strategic factors coexisting with an equally robust cluster of structural operational deficits. Top Management Support (mean = 3.74), Perceived Usefulness (mean = 3.66), Competitive Pressure (mean = 3.68), Relative Advantage (mean = 3.60), and Performance Expectancy (mean = 3.60) confirmed that both adoption intent and motivation were genuinely in place. Facilitating Conditions (mean = 2.58), Training and Capacity Building (mean = 2.60), ICT Infrastructure Reliability (mean = 2.72), Trialability (mean = 2.86), and Observability (mean = 2.90) together defined the structural floor below which adoption could not advance regardless of the strength of strategic intent and adoption motivation. The environmental analysis identified an external environment characterised by increasing competitive urgency in the absence of corresponding institutional and regulatory enablement, adding an institutional dimension to the structural constraint profile. This finding confirms the applicability of an integrated multi-framework analytical approach as a comprehensive tool for investigating BDA adoption in resource-constrained and emerging market contexts, and identifies the specific variables that must be addressed to improve ZTN's adoption maturity.

### **5.3.3 A Phased Structural Investment Pathway Exists for ZTN**

In response to the third research question on strategies to enhance and accelerate BDA adoption at ZTN, this study finds that a clear, evidence-based, and practically feasible pathway forward exists. This pathway is structured as a phased programme of structural investment supported by respondents' strategy endorsements and consistent with the technology adoption literature. The pathway begins with ICT infrastructure

modernisation as the foundational prerequisite. This is followed by capacity building and skills training as the enabling investment. Data governance development follows as the quality and compliance component. The establishment of a dedicated analytics unit provides the institutional component. Integration of BDA with performance management provides the accountability and sustainability component. This phased pathway directly addresses all dimensions of the structural readiness gap identified in the second conclusion and leverages ZTN's existing enabling conditions, most notably its strong management support and staff motivation, without requiring a fundamental cultural or strategic transformation.

## **5.4 Implications**

### **5.4.1 Theoretical Implications**

This study makes contributions to the body of knowledge on technology adoption that extend beyond the specific findings at ZTN. First, the study demonstrates that an integrated analytical framework combining individual-level attitudinal variables, organisational and social adoption determinants, innovation characteristics, and contextual organisational and environmental factors maintains its explanatory power in an African broadcasting context, providing validation for the cross-contextual applicability of these analytical constructs outside of the Western organisational settings in which most prior validation was conducted. The integrated framework proved more analytically robust than any single framework applied in isolation, as the individual-level attitudinal variables captured adoption intention, the organisational structural variables explained why intention did not result in adoption, the innovation characteristics explained the pace

and pattern of adoption diffusion within the organisation, and the environmental and contextual variables explained the structural readiness gap.

Second, the study provides empirical support for the finding that Facilitating Conditions independently predicts actual technology use rather than merely adoption intention, which has significant implications for technology adoption research in resource-scarce organisational settings. The findings confirm that in such settings, structural deficits in infrastructure, skills, and governance override positive individual-level perceptions of usefulness and ease of use, suggesting that the relative weight of organisational structural factors in determining adoption outcomes is substantially higher in resource-constrained contexts than in resource-abundant ones.

Third, the use of the six-stage maturity continuum as an adoption measurement tool for BDA in an African broadcasting context represents a novel methodological contribution, as it provides the first empirical adoption benchmark for this organisational type in Africa, applied in an institutional context different from that in which the measurement instrument was originally conceived. The combined use of the maturity continuum and the adopter category classification as complementary measurement instruments represents an additional methodological contribution to technology adoption research in African broadcasting settings.

#### **5.4.2 Practical Implications**

For ZTN's management and leadership, the study offers an evidence-based diagnostic of the organisation's BDA adoption status that goes beyond generic advice by providing a detailed, variable-level understanding of where enabling conditions are strongest and

where readiness gaps are greatest. The finding that Top Management Support was the highest-rated variable confirms the presence of the primary enabling condition. The practical call to action for ZTN's management is therefore not to further advocate for BDA adoption, which is already endorsed, but rather to operationalise that endorsement through concrete budget allocations, protected implementation timelines, and accountability structures. The late-majority classification further implies that the next required intervention is structural investment in facilitating conditions rather than attitudinal change, which is largely already in place.

For the Zimbabwean broadcasting industry, the study offers insights into the potential for industry-level collective action in support of analytics adoption. Given that all industry players are likely to face similar structural barriers, including infrastructure deficits, skills gaps, cost constraints, and data governance challenges, industry-level consortia and shared analytics infrastructure arrangements may offer more economically viable solutions than individual organisations attempting to overcome these barriers independently. The Broadcasting Authority of Zimbabwe and the Zimbabwean broadcasting industry association should explore the potential for a shared audience measurement and analytics consortium, similar to industry-level audience measurement bodies that exist in more mature media markets globally.

### **5.4.3 Policy Implications**

The environmental factor analysis identified an institutional gap in broadcasting analytics governance in Zimbabwe that is having a measurable negative effect on BDA investment confidence. The absence of a broadcasting data analytics governance framework from

BAZ and POTRAZ, covering permitted audience data collection practices, privacy compliance requirements, and industry standards for analytics methodologies, creates regulatory ambiguity that suppresses investment in broadcasting analytics. The policy implication is clear: BAZ and POTRAZ should develop a specific broadcasting data analytics regulatory framework that minimises ambiguity, establishes industry standards for analytics methodologies, and clarifies the specific applicability of the Cyber and Data Protection Act (2021) to broadcasting audience data collection and analytics.

The Government of Zimbabwe, through successor planning processes following the National Development Strategy 1 (2021-2025), should specifically include broadcasting data analytics capability development within its digital economy investment and incentive framework, rather than treating it as a component of generic ICT development. This distinction is important because the barriers to BDA adoption in broadcasting are sector-specific and require targeted policy interventions rather than generic digital economy support measures.

## **5.5 Recommendations**

Based on the findings, discussion, and conclusions of this study, the following recommendations are presented to ZTN's management, the Zimbabwean broadcasting industry, and relevant policy and regulatory bodies. The recommendations are sequenced to reflect the phased adoption pathway endorsed by respondents in Chapter 4.

### **5.5.1 Recommendations to ZTN Management**

Recommendation 1: Implement a Phased ICT Infrastructure Modernisation Programme

ZTN should establish a dedicated fund for ICT infrastructure modernisation over a period of three to five years, with clear provisions for: modernising broadcast data capture technology to support structured, real-time capture of programming, audience, and advertising data; developing a cloud computing environment for data storage and processing; developing high-speed internal network infrastructure to facilitate cross-departmental data sharing; and developing a centralised data platform that aggregates audience measurement, viewership, advertising, and operational data streams into a single analytics environment. This programme should be prioritised within the organisation's capital budget rather than treated as discretionary IT expenditure. Given the capital-intensive nature of this undertaking, ZTN should explore vendor financing options, staggered investment models, and public-private partnership arrangements to spread costs over the project period.

#### Recommendation 2: Develop and Fund a Structured, Multi-Level BDA Capacity Building Programme

ZTN should develop a structured, multi-year training and capacity building programme for BDA delivered across three distinct staff groups. For senior management and leadership, the programme should cover data literacy training with a focus on interpreting analytics results, understanding statistical concepts, and incorporating data insights into strategic decision-making and resource allocation. For operational staff in programming, production, marketing, and digital services, the programme should cover applied analytics training including audience data interpretation, use of data dashboards, and the application of analytics to scheduling and content decisions. For IT and data science staff, the programme should cover advanced training in data engineering, analytics platform

management, SQL and Python data processing, and statistical modelling. Training content should be domain-specific rather than generic data science training, as domain-specific training produces substantially better adoption outcomes (Gangwar et al., 2019). The BDA training programme should be embedded in the organisation's operating budget as a recurring expense, with staff completion targets included in departmental performance management systems.

### Recommendation 3: Establish a Dedicated BDA Analytics Unit

ZTN should establish a dedicated BDA analytics unit within its organisational structure, properly resourced with data scientists, data engineers, audience measurement specialists, and business intelligence analysts. This unit should serve as the centre of all BDA-related activity within ZTN, including the conversion of raw data into programming insights, data governance, data quality assurance, technology vendor management, evaluation of new analytics tools and platforms, and the communication of analytics insights to operational decision-makers in formats accessible to non-technical staff. The unit should be positioned within the organisational hierarchy at a level that provides it with the authority to interact directly with programming and commercial leadership, avoiding the fragmentation and departmentalisation of BDA activity that currently characterises ZTN's analytics operations.

### Recommendation 4: Develop and Adopt a Comprehensive Data Governance Policy

ZTN should develop and formally adopt an organisational data governance policy establishing clear standards for the collection, classification, quality assurance, storage, privacy management, and access control of data across all departments and systems. The

policy should be aligned to Zimbabwe's Cyber and Data Protection Act (2021) and should incorporate specific provisions on audience data ethics, guidelines for the responsible use of analytics in programming and advertising decisions, and procedures for handling data subject access requests. A data stewardship structure should be established, comprising departmental data owners responsible for data quality within their respective units and a central data governance committee responsible for policy enforcement, quality auditing, and ongoing governance framework development. This recommendation directly addresses the data quality challenge identified by 56.0% of respondents and provides the foundational governance structure upon which all other BDA investments depend.

#### Recommendation 5: Embed BDA in Strategic Planning and Performance Management

ZTN should formalise BDA by incorporating analytics metrics and adoption indicators into the organisation's strategic planning process, editorial commissioning process, and departmental and individual performance management systems. This should include: establishing Key Performance Indicators for content performance, audience reach, advertising yield, and commercial efficiency with an analytics focus; regular audience intelligence briefings that integrate BDA findings into editorial planning and commissioning cycles; and including BDA adoption metrics such as staff training completion rates, data quality scores, and analytics tool usage rates in departmental and executive scorecards. Formalising BDA in this manner would institutionalise the organisation's commitment to analytics and provide the accountability structures necessary to drive sustained behavioural change at all levels of the organisation.

### **5.5.2 Recommendations to the Broadcasting Industry and Regulatory Bodies**

## Recommendation 6: Develop a Zimbabwe Broadcasting Data Analytics and Governance Policy Framework

The Broadcasting Authority of Zimbabwe (BAZ), with the assistance of POTRAZ and the Ministry of Information and Broadcasting Services, should establish a regulatory framework covering digital audience measurement standards, data privacy obligations applicable to broadcast audience analytics, and the use of audience data in advertising targeting and content decision-making. The framework should establish a standardised national audience measurement methodology, developed with input from broadcasters, advertisers, the Advertising Council of Zimbabwe, and relevant regulatory authorities, to resolve the data quality and measurement comparability challenges that currently limit the utility of audience data for decision-making. The framework should also clearly define the applicability of the Cyber and Data Protection Act (2021) to audience data collection and processing in broadcasting contexts, thereby reducing the legal ambiguity that was identified as an investment suppressor in the environmental analysis.

## Recommendation 7: Establish Industry-Level BDA Capacity Building and Collaboration Platforms

BAZ and the Zimbabwe Broadcasting Industry Association should establish platforms for BDA knowledge sharing and capability building across the industry. These should include: an annual Zimbabwe Broadcasting Analytics Forum providing a platform for sharing analytics experiences among industry practitioners; a shared industry-wide BDA training resources pool enabling cost-sharing across organisations; and a working group to assess the viability of a shared infrastructure consortium for audience analytics, which

would make enterprise-grade analytics financially accessible to smaller and public service broadcasters with constrained revenue models, consistent with shared infrastructure models operating in more mature media markets globally.

#### Recommendation 8: Introduce Fiscal Incentives for Broadcasting Digital Transformation Investment

The Government of Zimbabwe, through the Ministry of Finance and the Ministry of Information and Communication Technology, should introduce fiscal incentives for broadcasting organisations that invest in digital transformation technologies, including BDA infrastructure. These incentives should include exemption from import duty on BDA-related hardware and software, accelerated depreciation on capital expenditure related to digital transformation, tax credits on staff training investments in BDA-related skills, and preferential access to national ICT development funds for organisations with a structured BDA adoption strategy. These incentives would directly address the economic cost barriers to BDA adoption identified in the environmental analysis (mean = 3.50) and the challenge data (cost-related challenges cited by 68.0% of respondents), thereby improving the financial viability of analytics investment for organisations at ZTN's current adoption stage.

### **5.6 Suggestions for Further Research**

This study, while comprehensive within its defined scope and methodology, opens several productive avenues for further research that would deepen understanding of BDA adoption in Zimbabwean and African broadcasting contexts.

A longitudinal study tracking ZTN's BDA adoption trajectory over five to ten years following this baseline study would provide causal evidence, unavailable in the current cross-sectional design, on how adoption dynamics evolved in response to infrastructure investment, capacity building programmes, regulatory reforms, and strategic restructuring. Longitudinal evidence would also allow observation of whether ZTN progressed from its current late-majority classification toward early-majority or confirmed adopter status, providing a test of the adoption pathway recommended in this study.

A comparative multi-broadcaster study encompassing the Zimbabwe Broadcasting Corporation (ZBC), private broadcasters, and community stations would enable cross-institutional analysis of BDA adoption levels, enabling and constraining factors, and strategic contexts. Such a study would provide a more representative picture of Zimbabwe's entire broadcasting sector analytics readiness and would allow comparison of adoption determinants across public service, commercial, and community broadcasting models.

Research investigating the quantifiable impact of BDA adoption on specific broadcasting performance outcomes at ZTN, including audience ratings, programme scheduling efficiency, advertising revenue yield, and content commissioning success rates, would establish empirical evidence of BDA's operational return on investment in the Zimbabwean context. This would provide the economic justification data that ZTN's leadership requires to secure sustained capital investment in analytics infrastructure and capability.

The application of the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model at the individual employee level within ZTN would provide more granular insights into the personal, generational, and role-specific factors moderating BDA adoption behaviour across different staff cohorts. This would complement the organisational-level focus of the current study and provide actionable guidance for targeted training and change management interventions.

A SADC regional benchmarking study comparing BDA adoption across television broadcasters in Zimbabwe, Zambia, Botswana, Mozambique, and Namibia would contribute context-sensitive adoption frameworks for Sub-Saharan African media environments and identify the specific institutional, regulatory, and market conditions that most differentiate high-adoption from low-adoption broadcasting organisations across the region.

Research specifically examining the operationalisation of Zimbabwe's Cyber and Data Protection Act (2021) in media sector data analytics contexts, including empirical assessment of how broadcasters are interpreting and complying with the Act's requirements for audience data, would provide policy-relevant insights into the legal-commercial interface of broadcasting analytics governance. Given the regulatory ambiguity cited by 34.0% of respondents as a challenge, this research would have direct implications for the regulatory framework development recommended in Section 5.5.2.

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## APPENDICES

### APPENDIX 1: Structured Questionnaire Survey Instrument

AFRICA UNIVERSITY

Researcher: Takudzwa Michael Tsuro | Year: 2026

Study: An Investigation into the Adoption of Big Data Analytics in Broadcast Programming Operations: A Case Study of ZTN

Participation is voluntary and all responses are strictly confidential. Duration: approximately 15–20 minutes.

#### SECTION A: Demographic Information

1. Gender:       Male       Female
  
2. Age Group:       18–25     26–35     36–45     46–55     Above 55
  
3. Department:     IT     Programming & Production     Marketing & Sales  
 Digital Services     Management/Administration     Other:  
\_\_\_\_\_
  
4. Position/Role: \_\_\_\_\_
  
5. Length of Service:  Less than 1 year     1–3 years     4–6 years     More than 6 years

## SECTION B: Extent of BDA Adoption

B1. Burstein & Holsapple (2008) Stages — Rate ZTN's adoption of each stage (1 = Not adopted; 5 = Fully adopted):

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Data Processing (DP):                     | 1 | 2 | 3 | 4 | 5 |
| Management Information Systems (MIS):     | 1 | 2 | 3 | 4 | 5 |
| Decision Support Systems (DSS):           | 1 | 2 | 3 | 4 | 5 |
| Organisational Computing (OC):            | 1 | 2 | 3 | 4 | 5 |
| E-Commerce / Digital Engagement:          | 1 | 2 | 3 | 4 | 5 |
| Pervasive Computing / Advanced Analytics: | 1 | 2 | 3 | 4 | 5 |

B2. DOI Innovation-Decision Stage — select the stage that best describes your department:

Knowledge  Persuasion  Decision  Implementation  Confirmation

B3. Purpose of BDA Use — rate the extent of use (1 = Not at all; 5 = To a very great extent):

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Audience analysis & segmentation:             | 1 | 2 | 3 | 4 | 5 |
| Content planning & scheduling:                | 1 | 2 | 3 | 4 | 5 |
| Digital marketing & advertising optimisation: | 1 | 2 | 3 | 4 | 5 |
| Performance monitoring & reporting:           | 1 | 2 | 3 | 4 | 5 |
| Strategic management & forecasting:           | 1 | 2 | 3 | 4 | 5 |

Workflow optimisation / newsroom operations: 1 2 3 4 5  
Enhancing viewer engagement (social media): 1 2 3 4 5

**SECTION C: TAM and UTAUT Factors (1 = Not important; 5 = Very important)**

Perceived Usefulness (PU): 1 2 3 4 5  
Perceived Ease of Use (PEOU) 2: 1 2 3 4 5  
Behavioural Intention to Use (BI): 1 2 3 4 5  
Performance Expectancy: 1 2 3 4 5  
Effort Expectancy: 1 2 3 4 5  
Social Influence: 1 2 3 4 5  
Facilitating Conditions: 1 2 3 4 5

**SECTION D: DOI Innovation Characteristics and TOE Organisational Factors (1 = Not important; 5 = Very important)**

Relative Advantage: 1 2 3 4 5  
Compatibility: 1 2 3 4 5  
Complexity / Simplicity: 1 2 3 4 5  
Trialability: 1 2 3 4 5  
Observability : 1 2 3 4 5  
ICT Infrastructure Reliability: 1 2 3 4 5  
ICT Strategy Alignment: 1 2 3 4 5

|                                       |   |   |   |   |   |
|---------------------------------------|---|---|---|---|---|
| Top Management Support:               | 1 | 2 | 3 | 4 | 5 |
| Human Resources & Staff Competencies: | 1 | 2 | 3 | 4 | 5 |
| Resource Availability:                | 1 | 2 | 3 | 4 | 5 |
| Organisational Culture:               | 1 | 2 | 3 | 4 | 5 |
| Training & Capacity Building:         | 1 | 2 | 3 | 4 | 5 |

**SECTION E: TOE Environmental Factors — PESTEL (1 = Not important; 5 = Very important)**

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| Political—Govt data governance & broadcasting policy:      | 1 | 2 | 3 | 4 | 5 |
| Economic—Cost of BDA tools & infrastructure:               | 1 | 2 | 3 | 4 | 5 |
| Social—Staff attitudes, culture, digital literacy:         | 1 | 2 | 3 | 4 | 5 |
| Technological—Industry trends, vendor influence:           | 1 | 2 | 3 | 4 | 5 |
| Environmental—Competitive pressure from digital platforms: | 1 | 2 | 3 | 4 | 5 |
| Legal—Cyber & Data Protection Act obligations:             | 1 | 2 | 3 | 4 | 5 |

**SECTION F: Special Challenges (select all that apply)**

- Inadequate ICT infrastructure
- Lack of analytics skills
- High implementation / licensing costs
- Poor data quality
- Low management prioritisation
- Regulatory ambiguity
- Resistance to change among staff
- Other: \_\_\_\_\_

**SECTION G: Recommended Strategies (select all that apply)**

- ICT infrastructure investment
- Staff training & capacity building
- Dedicated BDA analytics unit
- Data governance policy
- Strengthen leadership support
- Technology vendor collaboration
- Integrate BDA into performance management

## **APPENDIX 2: Semi-Structured Interview Guide — Managers and Key Informants**

Purpose: To collect qualitative data on BDA adoption determinants, challenges, and strategies at ZTN from key informants with senior operational or management knowledge.

Duration: 30–45 minutes. All responses are strictly confidential. With your permission, this interview will be audio-recorded for transcription purposes.

### **Theme 1: Extent of BDA Adoption**

1. How would you describe the current level of Big Data Analytics use at ZTN — across the organisation and specifically within your department?
2. On the Burstein and Holsapple (2008) maturity scale — from basic data processing through to advanced analytics — where would you place ZTN?
3. Using Rogers's adopter categories — innovators, early adopters, early majority, late majority, or laggards — where would you classify ZTN on the analytics adoption curve? Why?

### **Theme 2: TAM and UTAUT Factors**

4. Do staff at ZTN see BDA as genuinely useful for their work? What shapes those perceptions?
5. Do staff find BDA tools easy or difficult to use? What are the main ease-of-use barriers?

6. Does management actively encourage and visibly champion BDA use? How does that influence staff adoption behaviour?
7. What infrastructure, training, and technical support conditions exist to enable staff to use BDA? Where are the gaps?

### **Theme 3: DOI Innovation Characteristics**

8. In what specific ways does BDA offer advantages over how ZTN currently handles audience and operational data?
9. How compatible are BDA tools with ZTN's existing broadcast systems, workflows, and operational practices?
10. Do staff have any opportunity to try or pilot BDA tools before full adoption is required? What difference does that make?
11. Are BDA outputs and results shared visibly with staff who have not yet adopted? How does the visibility of results affect adoption?

### **Theme 4: TOE Organisational Factors**

12. Beyond verbal endorsement, how has management demonstrated its commitment to BDA — through budgets, restructuring, or accountability?
13. What is the current state of analytics skills and data literacy across ZTN's staff? Where are the most significant competency gaps?
14. How would you describe ZTN's organisational culture toward innovation and data-driven decision-making?

### **Theme 5: PESTEL Environmental Factors**

15. How has competition from streaming platforms and digital media influenced ZTN's approach to analytics?
16. What economic constraints most significantly limit ZTN's BDA investment capacity?
17. What regulatory guidance from BAZ, POTRAZ, or the government exists for broadcasting data analytics? Is it sufficient?
18. How does Zimbabwe's Cyber and Data Protection Act affect ZTN's audience data collection and analytics activities?

### **Theme 6: Strategies**

19. What are the most important steps ZTN should take over the next three years to advance its BDA adoption?
20. What role should BAZ, POTRAZ, and government play in supporting BDA adoption across Zimbabwe's broadcasting sector?

### **APPENDIX 3: Semi-Structured Interview Guide — External Stakeholders**

Purpose: To collect qualitative data from regulatory, industry, and policy stakeholders on the environmental factors shaping BDA adoption in Zimbabwe's broadcasting sector.

Duration: 20–30 minutes. All responses are strictly confidential.

#### **Section A: Industry Context**

1. How would you characterise the current state of digital transformation and data analytics adoption in Zimbabwe's broadcasting sector?
2. How does Zimbabwe's broadcasting sector compare to the regional SADC average on analytics readiness?

#### **Section B: PESTEL Environment**

3. What government policies and regulatory frameworks currently govern data analytics in Zimbabwe's broadcasting sector?
4. What economic conditions most significantly constrain BDA investment by Zimbabwean broadcasters?
5. How are competitive pressures from streaming platforms shaping broadcaster strategy on analytics?
6. What legal obligations does Zimbabwe's Cyber and Data Protection Act (2021) impose on broadcasters collecting audience data?

### **Section C: Gaps and Recommendations**

7. What regulatory, policy, or industry gaps most significantly impede BDA adoption in Zimbabwe's broadcasting sector?
8. What interventions — regulatory, fiscal, or collaborative — would most effectively accelerate responsible BDA adoption?
9. How do you envision data analytics transforming Zimbabwe's broadcasting sector over the next five to ten years?

## APPENDIX 4: AUREC approval letter



### AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 Website: [www.africau.edu](http://www.africau.edu)

Ref: AU4135/25

4 December, 2025

**TAKUDZWA MICHAEL TSURO**

C/O Africa University

Box 1320

**MUTARE**

**RE: ADOPTION OF BIG DATA ANALYTICS FOR ZIMPAPERS TELEVISION NETWORK BROADCAST PROGRAMMING**

Thank you for submitting the above-titled proposal to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

a) Research proposal

- **APPROVAL NUMBER** AUREC 4135/25  
This number should be used on all correspondence, consent forms, and appropriate documents
- **AUREC MEETING DATE** NA
- **APPROVAL DATE** December 4, 2025
- **EXPIRATION DATE** December 4, 2026
- **TYPE OF MEETING:** Expedited  
After the expiration date, this research may only continue upon renewal. A progress report on a standard AUREC form should be submitted a month before the expiration date for renewal purposes.
- **SERIOUS ADVERSE EVENTS** All serious problems concerning subject safety must be reported to AUREC within 3 working days on the standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.



Yours Faithfully

MARY CHINZOU

FOR CHAIRPERSON

**AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE**

## APPENDIX 5: Signed Consent Form

### INFORMED CONSENT GUIDE

#### Researcher Identification

My name is Takudzwa Michael Turo, a final-year Executive Master of Business Administration (EMBA) student at Africa University. I am conducting a study on the Adoption of Big Data Analytics for Zimpapers Television Network (ZTN) Broadcast Programming. I am inviting you to participate in this study by completing a questionnaire and/or participating in an interview.

#### Purpose of the Study

The study aims to investigate the adoption of Big Data Analytics (BDA) within Zimbabwe's broadcasting sector, focusing on ZTN. Specifically, the study seeks to:

1. Measure the current extent of BDA adoption at ZTN.
2. Identify factors influencing BDA adoption at ZTN.
3. Recommend strategies to enhance the adoption and integration of BDA in ZTN's programming operations.

You were selected because you are an employee at ZTN who contributes directly or indirectly to programming, data analysis, digital content design, marketing, or information management. Your insights are critical to understanding BDA adoption. Approximately 50–60 participants across departments, including Executive Management, IT, Programming & Production, Digital Content & Marketing, and Data & Analytics, are expected to participate.

#### Procedures and Duration

If you agree to participate, you will be asked to either:

- Complete a structured questionnaire: This will include questions about perceptions of BDA adoption, technological readiness, managerial support, employee competence, and environmental factors. The questionnaire will be administered online via Google Forms and will take 15–20 minutes.
- Participate in a semi-structured interview: If you are a key informant (e.g., senior manager, IT professional, content strategist), you may be invited to a 30–45 minute interview. Interviews will explore organizational motivations, success factors, barriers, and future opportunities regarding BDA adoption. With your consent, interviews will be audio-recorded for accurate transcription.

### **Risks and Discomforts**

There are minimal risks associated with participation. Some questions may prompt reflection on organizational practices or challenges, which could cause minor discomfort. You may skip any questions or discontinue participation at any time without penalty. All responses will remain confidential and will not be shared with your employer or third parties without your consent.

### **Benefits**

While there is no direct financial compensation, your participation will contribute to:

- Expanding academic knowledge on BDA adoption in African broadcasting.
- Providing practical insights for media leaders to align BDA adoption with organizational strategies and digital transformation goals.
- Informing recommendations to enhance operational efficiency, content personalization, and audience engagement at ZTN and other broadcasting organizations.

### **Confidentiality**

All information you provide will be strictly confidential. Responses will be anonymized, and participant names or identifying information will not appear in reports or publications. Pseudonyms or codes will be used.

Data, including audio recordings, transcripts, and electronic responses, will be securely stored on password-protected devices and encrypted cloud drives accessible only to the researcher. Data management will comply with the Data Protection Act of Zimbabwe (Chapter 11:12) and Africa University research guidelines. All data will be securely destroyed after the required retention period.

### **Voluntary Participation**

Participation is entirely voluntary. Refusal to participate or withdrawal at any time will not affect your employment at ZTN or your relationship with Africa University. You may also decline to answer specific questions during the questionnaire or interview.

### **Questions**

Before signing, you may ask any questions about this study. You may also contact:

GTM

**Researcher**

Takudzwa Michael Turo  
Department of Management &  
Entrepreneurship  
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+263775030331

**Consent**

By signing below, you indicate that you have read and understood the information above and agree to participate in this study.

ROADEN. T. MWERENGA

Name of Research Participant (please print)

26/11/2025

Date

[Handwritten Signature]

Signature of Research Participant or legally authorised representative

If you have any questions concerning this study or consent form beyond those answered by the researcher including questions about the research, your rights as a research participant, or if you feel that you have been treated unfairly and would like to talk to someone other than the researcher, please feel free to contact the Africa University Research Ethics Committee on telephone (020) 60075 or 60026 extension 1156 email [aurec@africau.edu](mailto:aurec@africau.edu)

Researcher:

Takudzwa Michael Turo