

BINDURA UNIVERSITY OF SCIENCE EDUCATION



FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT OF SPORTS SCIENCE

**Developing a Coaching Framework for Beginner Bowling Techniques in Zimbabwe
Women's Cricket to Improve Bowling Performance.**

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**A DISSERTATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR A
BACHELOR OF SCIENCE HONOURS DEGREE IN SPORT SCIENCE AND
MANAGEMENT.**

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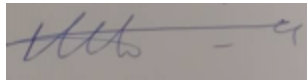
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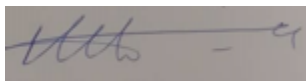
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DEDICATION

Special dedication to my wife, Sandra Mupariwa; my sister, Hazvinei Kurisa; my children; and my friends for their unwavering support during the writing of this dissertation.

ACKNOWLEDGEMENT

The researcher would like to acknowledge the guidance from my supervisor, Mr P Sizara, for the guidance and support. Your efforts throughout the process of preparing the dissertation are going to be forever cherished and treasured.

Special thanks will also go to my fellow colleagues at Bindura University for the support and motivation they are giving me.

ABSTRACT

The purpose of the study was to provide a framework for implementing effective bowling techniques in Zimbabwean women's cricket by examining performance-influencing factors. The problem originated from poor performance of the Zimbabwe women's cricket bowlers both domestically and internationally. The research was done using a qualitative approach. The data was collected through semi-structured interviews. The data was analysed with NVivo software. The findings revealed that intentional variation in bowling techniques enhanced performance, while poorly executed lengths and widths, particularly short and wide deliveries, led to high economy rates. Although targeted drills were found to improve technical precision and awareness, existing coaching frameworks were perceived as disjointed and lacking resources. The study highlighted the need for consistent support to translate these improvements into match performance. The insights offered are valuable for advancing cricket coaching, particularly in under-represented areas like Zimbabwe.

LIST OF TABLE

Table 3.1:	Summary of Main Study.....	31
Table 3.2:	Trustworthiness.....	31
Table 4.1:	Response Rate.....	34
Table 4.2:	Presentation of Objective 1.....	36
Table 4.3:	Presentation of objective 2.....	41
Table 4.4:	Presentation of objective 3.....	44
Table 4.5	Presentation of Objective 4.....	48

LIST OF FIGURES

Figure 4.1	Coaching Experience in Women's Cricket by level.....	34
Figure 4.2	Playing Experience in Women's Cricket by Team Level.....	35

LIST OF APPENDICES

Appendix 1:	Interview Questions.....	62
Appendix 2:	Letter of Approval	64

LIST OF ABBREVIATIONS

BUSE	Bindura University of Science Education
ICC	International Cricket Council
LTAD	Long Term Athlete Development
ODI	One Day International
T20I	Twenty20 International
ZC	Zimbabwe Cricket

CONTENTS PAGE

RELEASE FORM.....	i
COPYRIGHT DECLARATION.....	ii
DECLARATION ON PLAGARISM	iii
DEDICATION.....	iv
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vi
LIST OF TABLE	vii
LIST OF FIGURES	viii
LIST OF APPENDICES	ix
LIST OF ABBREVIATIONS	x
CHAPTER 1: THE PROBLEM AND ITS SETTING	1
1.1 INTRODUCTION.....	1
1.2 BACKGROUND TO THE STUDY.....	1
1.3 STATEMENT OF THE PROBLEM	3
1.4 SIGNIFICANCE OF THE STUDY.....	3
1.5 RESEARCH QUESTIONS	4
1.5.1 Primary Research Question	4
1.5.2 Subsidiary Research Questions.....	4
1.6 RESEARCH OBJECTIVES	4
1.6.1 Main Objective	4
1.6.2 Specific Objectives	4
1.7 DELIMITATION OF THE STUDY	5
1.8 STUDY OUTLINE.....	5
1.9 CHAPTER SUMMARY	6
CHAPTER TWO: LITERATURE REVIEW	7
2.1 INTRODUCTION.....	7
2.2 CONCEPTUAL REVIEWS.....	7
2.2.1 Bowling Performance	7
2.2.2 Economy rate.....	7

2.2.3 Bowling Length	8
2.2.4 Bowling Width.....	8
2.3 THEORETICAL REVIEW	9
2.3.1 Performance Analysis Theory in Sport.....	9
2.3.2 Motor Learning Theory.....	9
2.3.3 Constraints-Led Theory	9
2.3.4 Effectiveness Theories key theories	10
2.4 THEMATIC REVIEW	10
2.4.1 Theme 1: To explore the perceptions of Zimbabwean women cricketers regarding their current economy rates, bowling lengths, and widths based on their experiences and observations.	10
2.4.2 Theme 2: To investigate how bowling length and economy rate influence the overall bowling performance of Zimbabwean women cricketers.	11
2.4.3 Theme 3: To evaluate the effectiveness of current coaching frameworks in developing accurate bowling lengths and widths, as well as achieving low economy rates.	11
2.4.4 To identify the key elements that should be included in a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers.	11
2.5 CHAPTER SUMMARY.....	12
CHAPTER 3: MATERIALS AND METHODS	13
3.1 INTRODUCTION.....	13
3.2 METHODOLOGICAL APPROACH.....	13
3.3 TIME HORIZONS	13
3.4 RESEARCH STRATEGY	14
3.5 POPULATION AND SAMPLING.....	14
3.5.1 Population.....	14
3.5.2 Sampling Procedures	14
3.5.3 Sample Size Determination	15
3.6 DATA COLLECTION PROCEDURES.....	15
3.6.1 Pilot Study/Pre-test	15
3.6.2 Main Study	16
Table 3.1.....	16
3.7 DATA ANALYSIS AND PRESENTATION.....	16
3.7.1 Qualitative Data Analysis.....	16
3.8 TRUSTWORTHINESS (QUALITATIVE RESEARCH).....	17
Table 3.2.....	17

3.9 ETHICAL CONSIDERATIONS.....	17
3.10 CHAPTER SUMMARY.....	18
CHAPTER 4: DATA ANALYSIS AND PRESENTATION	19
4.1 INTRODUCTION.....	19
4.2 RESPONSE RATE	19
Table 4.1:	19
4.3 DEMOGRAPHIC DATA.....	20
Figure 4.1:	20
Figure 4.2	21
4.4 PRESENTATION AND ANALYSIS OF DATA LINKED TO THE RESEARCH OBJECTIVES	21
4.4.1 1. What are the perceptions of Zimbabwean women cricketers regarding their current economic rates, bowling lengths, and widths based on their experiences and observations?	22
Table: 4.2	22
What are the perceptions of Zimbabwean women cricketers regarding their current economic rates, bowling lengths, and widths based on their experiences and observations?	22
4.4.2 2. How does bowling length and economic rate influence overall bowling performance of Zimbabwe women’s cricketers?	27
Table 4.3:	27
How does bowling length and economic rate influence overall bowling performance of Zimbabwe women’s cricketers?	27
4.4.3 3. How effective are current coaching frameworks in developing accurate bowling length, and widths and low economic rates?	30
Table 4.4:	30
4.4.4 How can a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers be developed?	34
4.5 DISCUSSION	38
4.6 CHAPTER SUMMARY.....	40
CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	41
5.1 INTRODUCTION.....	41
5.2 SUMMARY OF MAJOR FINDINGS.....	41
5.2.1 Major Findings on the Objective 1: 1. To explore the perceptions of Zimbabwean women cricketers regarding their current economy rates, bowling lengths, and widths based on their experiences and observations.	41
5.2.2 Major Findings on the Objective 2: 2. To investigate how bowling length and economy rate influence the overall bowling performance of Zimbabwean women cricketers.	41

5.2.3 Major Findings on the Objective 3: 3. To evaluate the effectiveness of current coaching frameworks in developing accurate bowling lengths and widths, as well as achieving low economy rates.	42
5.2.4 Major Findings on the Objective 4: 4. To identify the key elements that should be included in a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers.	42
5.3 CONCLUSIONS	42
5.3.1 Research Question 1.....	42
5.3.2 Research Question 2.....	43
5.3.3 Research Question 3.....	43
5.3.4 Research Question 4.....	44
5.4 LIMITATION TO THE STUDY.....	44
5.5 IMPLICATIONS/RECOMMENDATIONS	44
5.5.1 Implications for Practice	44
5.5.2 Implication for Theory	45
5.5.3 Implications for Research	45
REFERENCES.....	47
APPENDIX 1.....	49
INTERVIEW QUESTIONS.....	49
APPENDIX 2.....	51
APPROVAL LETTER.....	51

CHAPTER 1: THE PROBLEM AND ITS SETTING

1.1 INTRODUCTION

The purpose of the study was to provide a framework for implementing effective bowling techniques in Zimbabwean women's cricket by examining performance-influencing factors. This chapter focused on the study background of the study, problem statement, research questions, research objectives, study boundaries, and finally study outline.

1.2 BACKGROUND TO THE STUDY

The purpose of the study is to provide a framework for introducing bowling techniques among female cricketers in Zimbabwe. According to the International Cricket Council (2023), there has been a recurring problem in Zimbabwean women's cricket teams failing to progress beyond the qualifier stages for ICC Women's Cricket World Cup tournaments since their inclusion in the global event. Consequently, this raised concerns for the researcher regarding the effectiveness of current coaching methodologies applied specifically to women's teams. The study focused on performance challenges within women's teams across provincial teams and clubs at developmental or grassroots levels.

Notably, in 2022, the Zimbabwe senior women's team failed to qualify for the ICC T20 World Cup. This unsuccessful attempt was largely attributed to the bowling unit, which conceded an average of over 7.5 runs per over. The researcher statistically observed that this poor economy rate was a result of ineffective bowling lengths and widths by national team bowlers. A similar trend was observed in the 2023 Africa Women's T20 Cup, where the team lost matches to Namibia and Rwanda, again due to challenges in bowling line and width (ICC, 2023). Additionally, the under-19 women's squad was eliminated during the group stages of the 2023 ICC Women's Under-19 T20 World Cup. Match reports indicated that Zimbabwe's bowlers "looked off rhythm, delivering too many extras and missing length in the power play overs" (Mugabe, 2024, p. p.14). Ndlovu (2024) echoed similar sentiments, stating, "Batters gave us a fighting chance, but the bowling was a let down again. "Same story, different tournament" (The Herald, p. 10). This body of evidence underscored the urgent need to refine the country's bowling, justifying the development of a coaching framework specifically tailored to women bowlers.

The researcher's interest in this issue stemmed from direct involvement in high school, provincial, and national women's teams, particularly within emerging and developmental squads. Experience within Zimbabwe Cricket's development programmes for women highlighted noticeable gaps in coaching methodologies. It was observed that many coaches neglected bowling during cricket initiation, resulting in players reaching national levels with technically flawed bowling actions. National team bowling coaches often had to realign players' techniques, and some bowlers were even called off at international tournaments for illegal bowling actions. In contrast, elite cricketing nations like England, Australia, and India identified and corrected such flaws early due to robust initiation frameworks and advanced assessment tools.

Mccue et al. (2021) emphasized that current trends in bowling required integration of performance analytics; however, Zimbabwe's adoption of such advancements was hampered by financial constraints and limited access to resources, creating a significant gap in coaching practices compared to developed cricketing nations. Addressing inconsistencies in bowling length and width, which directly affected economy rates and wicket-taking potential, required a personalized initiation framework suited to women athletes. A critical gap existed within Zimbabwe Cricket's structures, as there was no dedicated framework for developing and refining women's bowling, with many coaches' merely adapting men's coaching frameworks (Sibanda, 2024).

The study aimed to address these inconsistencies by designing a data-driven framework for initiating bowling techniques among Zimbabwean women cricketers. A quasi-experimental design incorporating pre-test and post-test assessments was employed to focus on the relationship between bowling length, width, and economy rate. This formed the foundation for a Long-Term Athlete Development (LTAD) approach. Key components included measurements of bowling width and length and an intervention strategy involving front-arm alignment and length-width drills. The researcher hoped this would strengthen the bowling capabilities of Zimbabwe's women's squads and improve their overall performance.

In conclusion, the study evaluated baseline performance metrics, explored cause-effect relationships between technique and economy rate, and sought to bridge the gap between traditional coaching frameworks and evidence-based coaching practices through a quantitative

approach. The research aspired to contribute meaningfully to both Zimbabwe's sporting landscape and its academic scholarship.

1.3 STATEMENT OF THE PROBLEM

The study investigated the persistent inconsistencies in bowling performance among Zimbabwe women's cricket teams, which have led to ineffective deliveries, lack of variation, and an overall imbalance between batting and bowling performances. During the 2023 Women's Under-19 T20 World Cup and the 2024 Africa Qualifier, both the Under-19 and senior teams struggled defensively despite strong batting displays, largely due to bowlers' inability to maintain line and length (Mugabe, 2024; Ndlovu, 2024). Although Zimbabwe Cricket introduced improved coaching structures, international tours, and video analysis systems, these initiatives failed to address the root causes of technical inconsistency, particularly among young and emerging players. Studies revealed that many coaches relied on men's coaching frameworks without adapting them to the physiological needs of female athletes, while training sessions often prioritized general fitness and batting over bowling, and lacked specialized bowling coaches at provincial and grassroots levels (Sibanda, 2024). Consistent with findings by Portus et al. (2020) and Petersen et al. (2018), the absence of biomechanically informed and context-specific coaching frameworks was identified as a major limitation in skill development. To address this, the researcher proposed developing a data-driven bowling initiation framework using a quasi-experimental pre-test and post-test design, targeting female cricketers aged 14–19 in Harare and Bulawayo to build a solid technical foundation for long-term performance improvement.

1.4 SIGNIFICANCE OF THE STUDY

This study aimed to provide both practical and theoretical solutions to the persistent inconsistencies in bowling line and length among Zimbabwean female bowlers by equipping coaches and technical staff with insights on how best to work with female athletes. The establishment of an organized coaching framework was intended to highlight technical drills and performance evaluation strategies aimed at improving bowling accuracy, lowering economy rates,

and enhancing overall performance across all levels of female cricket participation. Designed with low-resourced environments in mind, the framework sought to offer accessible and adaptable coaching tools for schools, grassroots programs, and provincial teams in Zimbabwe. Furthermore, the study emphasized the development of a gender-specific coaching model to enable coaches to better address the physiological and developmental needs of female athletes, ultimately reducing challenges in coaching and fostering more effective skill development.

1.5 RESEARCH QUESTIONS

1.5.1 Primary Research Question

What framework can be developed to initiate and enhance bowling techniques in Zimbabwe women's cricket to improve bowling performance?

1.5.2 Subsidiary Research Questions

- What are the perceptions of Zimbabwean women cricketers regarding their current economic rates, bowling lengths, and widths based on their experiences and observations?
- How does bowling length and economic rate influence overall bowling performance of Zimbabwe women's cricketers?
- How effective are current coaching frameworks in developing accurate bowling length, and widths and low economic rates?
- How can a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers be developed?

1.6 RESEARCH OBJECTIVES

1.6.1 Main Objective

To develop a framework that initiates and enhances bowling techniques in Zimbabwe women's cricket to improve overall bowling performance.

1.6.2 Specific Objectives

- To explore the perceptions of Zimbabwean women cricketers regarding their current economy rates, bowling lengths and widths based on their experiences and observations.

- To investigate how bowling length and economy rate influence the overall bowling performance of Zimbabwean women cricketers.
- To evaluate the effectiveness of current coaching frameworks in developing accurate bowling lengths and widths, as well as achieving low economy rates.
- To identify the key elements that should be included in a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers.

1.7 DELIMITATION OF THE STUDY

Harare and Bulawayo, two of Zimbabwe's major cricket hubs, were the study's geographic boundaries because of their accessibility and high concentration of pertinent participants. Only Zimbabwean women's cricket, and more especially bowling technique, was the subject. A qualitative approach was used to explore coaching methods and skill development. Bowling performance indicators, including economy rate, length, and width, were the only focus of the study. It did not include other cricket skills like fielding or batting. Long-term developments were not tracked; instead, insights were collected at a particular moment in time.

1.8 STUDY OUTLINE

This research was structured into five chapters. Chapter 1 presented the introduction by outlining the study's focus and providing a clear justification for the research problem through the background, problem statement, research questions, and objectives. It also addressed the significance and delimitations of the study. Chapter 2 reviewed relevant literature to establish a theoretical and empirical foundation for the research. Chapter 3 detailed the research methodology, including the design, sampling techniques, data collection, and analysis procedures. Chapter 4 focused on the presentation, analysis, and discussion of the research findings in relation to the set objectives. Finally, Chapter 5 concluded the study by summarizing the key findings and offering recommendations for future research.

1.9 CHAPTER SUMMARY

This chapter presented the background information, defined the research problem, and outlined its significance, along with the research questions and objectives. The next chapter (Chapter 2) will review relevant literature, focusing on existing research, theoretical perspectives, and best practices related to the development of bowling techniques and the coaching of women's cricket.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

This section provided key concepts, theories, and themes aligned with the objectives of the research. It simplified the problem under investigation and outlined the gaps and inconsistencies in existing literature by organizing the review into conceptual, theoretical, and thematic components.

2.2 CONCEPTUAL REVIEWS

2.2.1 Bowling Performance

According to Petersen et al. (2020), bowling performance refers to a bowler's effectiveness, typically evaluated through key metrics such as wickets taken, economy rate, and accuracy in line and length. This concept was highly valued in the present study as it formed the foundation for evaluating bowling effectiveness within the context of Zimbabwean women's cricket, where consistent length and line are critically needed to improve performance. The researcher also observed that best practices in high-performance environments involve the use of data analytics, where analysts assess bowlers using biomechanical and tactical variables. However, a significant gap exists in Zimbabwe's cricket structures, as such practices are primarily limited to national teams, with minimal or no application at grassroots and developmental levels. The researcher contended that this lack of early-stage refinement contributes to poor bowling performance at international level. Furthermore, recent coaching and analytical trends now include advanced metrics such as dot ball percentages, variations in pace, and control over line and length indicators that were acknowledged in this study. To address the performance gaps, this study assessed bowling performance using economy rate, bowling length, and width as key indicators, forming an objective evaluation basis both before and after the implementation of targeted interventions.

2.2.2 Economy rate

According to Lemmer (2021), economy rate is defined as the average number of runs conceded per over—is a crucial indicator of a bowler's ability to restrict scoring and build pressure on batters. This study incorporated economy rate as a central metric for evaluating bowling

performance, particularly because, as highlighted in the background, current coaching frameworks in Zimbabwean women's cricket have not effectively addressed this aspect. While modern coaching trends increasingly recognize economy rate as a key measure of consistency and tactical control, the researcher noted that it alone might not fully capture the overall quality of bowling. Nonetheless, in this study, economy rate was treated as a primary variable directly linked to the bowling initiation framework, and its assessment before and after the implementation of targeted interventions served to evaluate the coaching impact of the proposed framework.

2.2.3 Bowling Length

According to Portus et al. (2022), bowling length refers to the point on the pitch where the ball lands before reaching the batter, with deliveries landing in the good length zone being particularly effective in disrupting the batter's rhythm and limiting scoring opportunities. Contemporary practices have begun to incorporate technologies such as Hawk-Eye to analyse and refine bowling length, offering biomechanical insights into precision and tactical execution. However, in the Zimbabwean women's cricket context, such technologies are rarely utilized, and when they are, it is primarily at national team level and inconsistently applied. This has highlighted a significant gap in the integration of biomechanical metrics and advanced analysis at developmental levels. The researcher also noted that bowling length should not be treated as static, as it is often situational and responsive to a batter's movements and intent. In this study, bowling length was treated as both a technical and tactical skill essential to any bowling initiation framework. To evaluate its impact on performance, the study quantified bowling length and analysed its relationship with economy rate. For analytical purposes, bowling length was categorised into four classifications: good length, full pitch, bouncer, and short ball.

2.2.4 Bowling Width

According to Mukherjere (2020), bowling width referred to how the ball was delivered from the batter's stumps, normally measured in relation to the off-stump and leg-stump lines. Additionally, bowling length was considered the same as the line of bowling and was used interchangeably in this study. The researcher observed that poor bowling led to the conceding of extras, especially when the bowler delivered balls that went down the leg-side or wide outside the off-stump. These deliveries, commonly known as wide balls, indicated a poor line of bowling, resulting in the batting side being awarded an extra run while the ball was bowled again. The evidence provided in Chapter

1 showed that Zimbabwean female bowlers struggled with this aspect, hence the need to intervene and correct the inconsistencies.

2.3 THEORETICAL REVIEW

2.3.1 Performance Analysis Theory in Sport

According to Hughes and Bartlett (2002), who founded this theory, they suggested that evaluating athlete performance was only possible through the gathering of notational data and statistical data. This study adopted this theory by gathering data on economy rate during match simulations, and line and length bowling through target bowling drills using match logs and observation checklists. Thus, many scholars agreed that this theory provided data-driven decision-making and evaluation of athletes. The researcher observed that current trends were increasingly making use of match analysis technologies and sport-specific analytics, predominantly influenced by the Performance Analysis Theory in Sport. Conclusively, this theory strengthened the researcher's data collection and evaluation of economy rate, bowling length and width, and the intervention strategy results.

2.3.2 Motor Learning Theory

According to Schmidt's Schema Theory (1975), skills were acquired through cognitive, associative, and autonomous stages. This theory was going to be handy in this study, as the researcher aimed to gain insight into how athletes psychologically processed instructions and utilized this understanding when drafting coaching points in the framework to be developed. However, traditional theories emphasized repetitive practice and contrasted with current theories that treated the athlete as the sole driver of their skill acquisition process, rather than adopting a coach knows-it-all mentality.

2.3.3 Constraints-Led Theory

According to Renshaw et al. (2019), the Constraints-Led Theory stressed that athletes should adjust to varying situations, and that the coaching framework, if adopted, needed to be adapted to the specific settings in which it was applied. Therefore, this study used the insights of this theory when adopting best practices from developed nations and tailoring them to fit Zimbabwe.

Additionally, the researcher also adopted and adapted the men's cricket coaching framework to suit women's cricket by considering the physiological differences between men and women. However, fully adopting this theory had its weaknesses, as it was less effective in limited-resource settings, and Zimbabwe women's cricket was operating under such constraints.

2.3.4 Effectiveness Theories key theories

According to Lyle and Cushion (2017) and Light (2021), these theories categorized coaching approaches into three types: behaviorist (drill-based coaching), cognitive (feedback-driven coaching), and constructivist (athlete-led coaching). The researcher observed that recent trends were slowly shifting from coach-led coaching to athlete-based coaching models. Therefore, this study adopted all three approaches drill-based, feedback-driven, and athlete-led coaching into the targeted intervention, specifically through front-arm alignment and target drills. The framework produced considered these aspects of coaching, designed specifically for female cricketers within the Zimbabwean context. The Performance Analysis Theory was adopted to produce baseline outcomes and intervention outcomes during pre-test and post-test assessments. Additionally, the Motor Learning Theory helped in skill acquisition and in understanding how athletes synthesized coaching points. Moreover, the Constraints-Led Theory assisted in adapting the coaching environment to suit the best conditions for athlete development, considering factors such as available resources and environmental conditions.

2.4 THEMATIC REVIEW

2.4.1 Theme 1: To explore the perceptions of Zimbabwean women cricketers regarding their current economy rates, bowling lengths and widths based on their experiences and observations.

According to Petersen et al. (2021), the assessment of economy rates, bowling length and widths was critical because these three indicators provided a true reflection of the quality of an athlete is bowling. The researcher assessed economy rates through match simulation logs, which demonstrated the bowler's ability to contain game pressure, particularly considering the behaviour of batters and the target scores chased by the batting side. Therefore, the assessment of bowling length and width was essential, as these factors determined the economy rate. The researcher

assessed economy rates, bowling line, and length both before and after the targeted intervention of front-arm alignment drills and target drills.

2.4.2 Theme 2: To investigate how bowling length and economy rate influence the overall bowling performance of Zimbabwean women cricketers.

According to Ferdinands and Woolmer (2017), bowlers who landed deliveries in the good length zone tended to have a low economy rate and thus applied pressure on batters, causing them to make mistakes and get out. Therefore, the researcher grounded the study on this theme so that bowlers could build consistency in hitting the good length zone, resulting in fewer runs conceded and more wickets taken. However, the full application of this theme required video analysis feedback, which was not widely available at the grassroots level in the Zimbabwean setting. Coaches primarily relied on general observation, meaning bowlers could progress to higher performance levels without refinement of basic skills.

2.4.3 Theme 3: To evaluate the effectiveness of current coaching frameworks in developing accurate bowling lengths and widths, as well as achieving low economy rates.

According to Knight et al. (2018), coaching practices that provide evidence-based guidance through biomechanical feedback and deliberate practice were gaining popularity in sport. Therefore, the study aimed to adopt less costly methods for gathering data, recognizing that coaching in the Zimbabwean setup especially in women's cricket operated with limited coaches who often had to improvise. It was worth noting that the study acknowledged Zimbabwe as an under-resourced country facing challenges in applying some of the best coaching practices. However, the researcher intended to adopt and adapt these best practices within the targeted interventions of front-arm alignment and target drills, using the limited resources available.

2.4.4 To identify the key elements that should be included in a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers.

It emphasized technical drills to establish correct biomechanics and included individualized coaching plans tailored to each player's unique needs. Continuous performance analysis using video and statistical data guided refinement, while structured progression models facilitated

systematic advancement. Mental training was incorporated to enhance concentration and resilience, and coach training ensured alignment with international standards. Additionally, the framework linked fitness training to the physical demands of bowling and promoted a continuous learning culture for both players and coaches, fostering lifelong development in women's cricket.

2.5 CHAPTER SUMMARY

This chapter reviewed related literature relevant to the study, drawing from various scholars in alignment with the research objectives. The next chapter will focus on the research methodology.

CHAPTER 3: MATERIALS AND METHODS

3.1 INTRODUCTION

This chapter covers the methodological approach, target population, sampling techniques, data collection methods, and data analysis tools used in the study. Additionally, ethical considerations are highlighted to ensure the integrity and legitimacy of the research.

3.2 METHODOLOGICAL APPROACH

This study investigated the effects of teaching methods and bowling tactics on Zimbabwean women cricket players' performance using a qualitative case study methodology. Through observations, interviews, and reflection techniques, this approach enabled a thorough understanding of changes in economy rate, bowling length, and width. It was selected for its ability to capture experiential, context-specific insights that quantitative data alone might miss. Qualitative research scholars such as Creswell and Poth (2018) emphasize the importance of comprehending meaning in action-based sports contexts. This method helped identify not only what changed during the intervention, but also how and why those changes occurred.

3.3 TIME HORIZONS

This study employed a cross-sectional time horizon within a qualitative framework to explore the perspectives of players and coaches on bowling performance metrics such as economy rate, bowling length, and width among Zimbabwean women cricketers. By capturing insights at a single point in time, the study enabled an in-depth understanding of current coaching practices, technical challenges, and contextual factors influencing bowling development. A cross-sectional design was chosen over a longitudinal approach due to practical constraints such as limited access and time availability, while still providing a meaningful opportunity to identify prevailing themes and experiences. As Bryman (2016) explains, cross-sectional qualitative studies are effective for examining associations and interpreting lived experiences within a fixed timeframe, making them suitable for exploratory research aimed at informing an initial coaching framework.

3.4 RESEARCH STRATEGY

A qualitative exploratory cross-sectional design was used in this study to provide a comprehensive picture of coaching frameworks, bowling tactics, and the perceived effects of these practices at a specific point in time. This method was ideal for examining current circumstances and relationships without needing to monitor changes over time, as it enabled the simultaneous collection of rich, contextual data from multiple stakeholders, including players, coaches, and analysts.

3.5 POPULATION AND SAMPLING

3.5.1 Population

The study population comprised 15 participants, including Zimbabwean women's cricket players, coaches, and performance analysts who worked directly with bowling performance and coaching. To obtain a thorough understanding of contemporary bowling methods, coaching frameworks, and their perceived effects, data were collected through semi-structured interviews within a qualitative cross-sectional approach.

3.5.2 Sampling Procedures

Fifteen participants, including 7 female bowlers, 5 coaches, and 3 performance analysts, were chosen for this study using purposive (judgmental) sampling because they were directly involved in Zimbabwe women's cricket and pertinent to the study's objectives. This non-probability sampling strategy was selected over snowball and quota sampling because it enables the intentional inclusion of information-rich individuals who can provide deep insights into bowling performance and coaching techniques (Palinkas et al., 2015; Creswell & Poth, 2018). Quota sampling was deemed inappropriate as the study emphasized expertise over demographic representation, while snowball sampling was avoided to reduce referral bias. Referrals from cricket networks and expert recommendations were used to identify participants, ensuring relevant and context-specific data collection.

3.5.3 Sample Size Determination

Using theoretical sampling techniques, which prioritize the breadth and significance of data over numerical representation, the sample size for this qualitative study was determined. According to Saunders and Townsend (2018), who emphasized data adequacy rather than quantity in exploratory research, and Guest et al. (2017), who found that 6–12 interviews often achieve thematic saturation within homogeneous groups, a total of 15 (7 female bowlers, 5 coaches, and 3 analysts) participants was considered sufficient. This size, while manageable for in-depth analysis, allowed for a meaningful representation of diverse perspectives from players, coaches, and analysts. Without compromising analytical rigor, the sample size aligned with qualitative research standards, ensuring rich, context-specific insights to inform the development of the coaching framework.

3.6 DATA COLLECTION PROCEDURES

3.6.1 Pilot Study/Pre-test

The primary data collection tool for the pilot study was a semi-structured interview guide, designed to assess the flow, relevance, and clarity of the questions before the main investigation commenced. The pilot was conducted over the course of a week during planned training sessions at a selected cricket facility in Harare, Zimbabwe. It involved a small group of three participants a player, a coach, and a performance analyst who were not included in the final study sample but possessed similar backgrounds and expertise. To encourage openness and comfort, the pilot interviews were conducted in person within a calm, private setting. This approach was used to refine the interview process, evaluate how participants interpreted the questions, and identify any logistical or procedural challenges. Given that open-ended, flexible conversations allowing probing and clarification are the most effective means of capturing participants' lived experiences, views, and insights, a qualitative, interview-based data collection method was chosen (Creswell & Poth, 2018).

3.6.2 Main Study

Over the course of three weeks in Harare and Bulawayo, 15 women bowlers, coaches, and analysts who were purposefully chosen for the study participated in semi-structured interviews to gather detailed information. In-person interviews were held at cricket grounds, enabling candidate, facilitated discussions. In keeping with the exploratory qualitative design of the study, this method was selected to record deep, context-specific observations into bowling techniques and coaching procedures.

Table 3.1

Summary of Main Study

Interviews	Subjects	Analysis
Semi-structured, in-person interviews conducted	15 purposively selected participants: 7 women bowlers, 5 coaches, and 3 performance analysts	Thematic analysis using NVivo software, with coding of transcripts, identification of key themes, and use of visuals such as tables.

3.7 DATA ANALYSIS AND PRESENTATION

3.7.1 Qualitative Data Analysis

NVivo software was used to analyse the data using thematic analysis, which made it possible to code and organise interview transcripts effectively. Using open coding, important themes pertaining to coaching methods, bowling performance, and intervention results were found. Tables and other visualisation features of NVivo were utilised to effectively and graphically convey the results. This strategy guaranteed a thorough, open analysis process that was appropriate for examining intricate situations in Zimbabwe women's cricket.

3.8 TRUSTWORTHINESS (QUALITATIVE RESEARCH)

Triangulating data from players, coaches, and analysts, member checking to ensure accurate interpretation, verbatim recording of interviews, and establishing rapport during interviews, and methodical coding using NVivo to preserve transparency and consistency were all methods used to assure the credibility of the research.

Table 3.2

Trustworthiness

Criterion	Probable Technique	Techniques in Main Study
Credibility	Triangulation, Member checking, Prolonged engagement, Audit trail	Players', coaches', and analysts' data; summaries exchanged for verification; thorough interviews to establish rapport; NVivo coding with well-organised documentation
Transferability	Thick description	In order to facilitate adaptation in comparable circumstances, individuals and surroundings are described in detail.
Dependability	Audit trail, Peer debriefing	NVivo coding and transcription done methodically; researcher consultation to review analysis choices
Confirmability	Reflexivity, Audit trail	Keeping thoughtful notes while gathering data; an open coding procedure recorded in NVivo

3.9 ETHICAL CONSIDERATIONS

All subjects were protected throughout the trial by rigorous adherence to ethical requirements. Prior to the start of data gathering, permission and access were acquired from the appropriate cricket authorities and site management. All participants gave their informed consent after being thoroughly informed about the goal of the study, their voluntary participation, and their freedom to discontinue participation at any moment. By conducting interviews in a courteous manner and

creating a comfortable environment, precautions were made to prevent any injury. By securely storing all data on password-protected devices and using codes rather than names during data analysis, participant anonymity and confidentiality were ensured.

3.10 CHAPTER SUMMARY

The chapter defined the materials and methodology used in the study to develop a framework for initiating bowling techniques to improve performance for Zimbabwe women's cricket. Chapter 4 will look at presentation, analysis and discussion of research findings.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION

4.1 INTRODUCTION

This chapter presents and discusses the response rate, demographic data, and findings linked to the research objectives.

4.2 RESPONSE RATE

Table 4.1:

Response Rate

Interviews planned	Interviews conducted	Interviews unsuccessful	Percentage
15	14	01	93.3

A high completion rate of 93.3% was achieved in this study, with 14 of the 15 scheduled interviews being done successfully. The clearly defined participant group (Zimbabwean women cricket players, coaches, and analysts) and the consistent themes that emerged across responses support the reliability and depth of the findings. It is reasonable to conclude that the sample size was adequate and that theoretical saturation was probably reached.

4.3 DEMOGRAPHIC DATA

Figure 4.1:

Demographic Data on Coaching Experience in Women's Cricket by Level

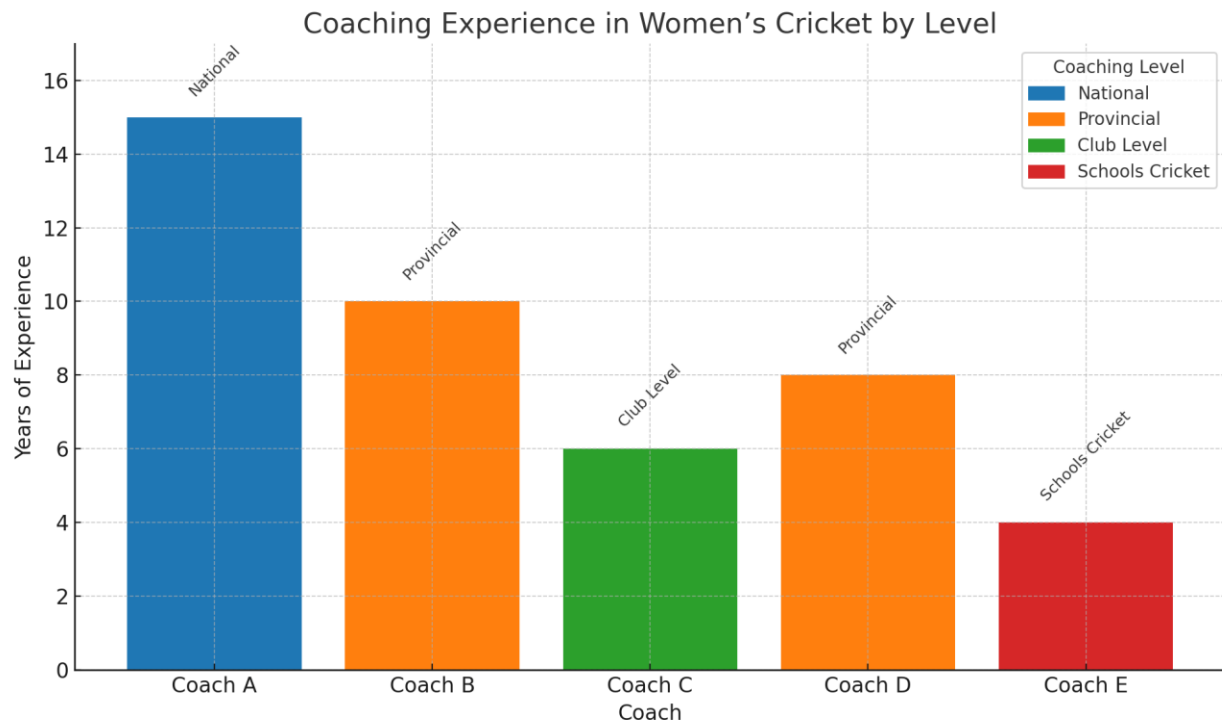
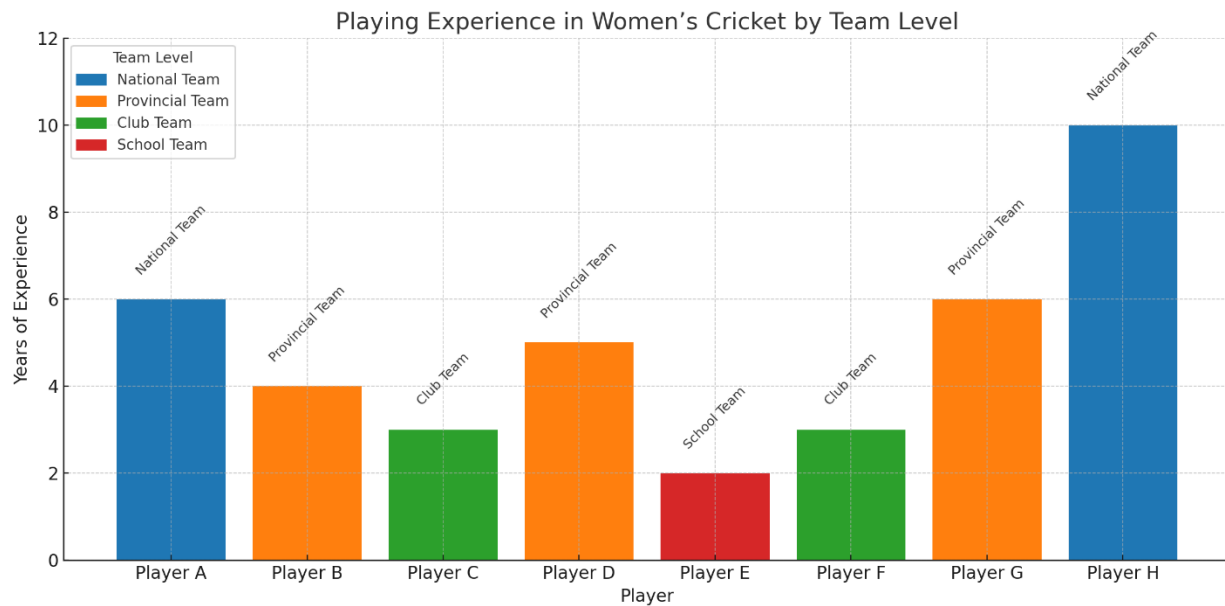


Figure 4.2

Demographic Data Playing Experience in Women's Cricket by Team Level



4.4 PRESENTATION AND ANALYSIS OF DATA LINKED TO THE RESEARCH OBJECTIVES

In this qualitative study, Zimbabwean women's cricket players' economy rates, bowling lengths, and bowling widths were evaluated as bowling performance metrics. Semi-structured interviews that examined players' perspectives and experiences in order to enhance particular areas of their bowling technique were used to gather data. The qualitative data was analysed using NVivo, which made it possible to find new themes and trends pertaining to performance changes. This method, which was in line with the qualitative emphasis on meaning and context rather than just statistical measurement, allowed for a thorough understanding of how the treatments affected bowling accuracy and efficacy.

4.4.1 1. What are the perceptions of Zimbabwean women cricketers regarding their current economic rates, bowling lengths, and widths based on their experiences and observations?

Table: 4.2

What are the perceptions of Zimbabwean women cricketers regarding their current economic rates, bowling lengths, and widths based on their experiences and observations?

NVivo Code (Theme)	Theme Description or Definition	Matching Mentions from the Interviews	Number of Mentions
Tactical Inexperience	Lack of strategic bowling and adjustment to batter weaknesses.	“The weakness lies in lack of strategic bowling; bowlers do not always adjust length and width according to batter’s weaknesses.” “Many young bowlers still need to develop awareness of how length and width affect run containment. “There’s a noticeable gap between training performance and match execution, which affects overall bowling metrics.”	4
Technical Deficiencies	Issues with bowling lengths and width control.	“Bowling lengths are often inconsistent; some players bowl too short while others tend to overpitch, which reduces their effectiveness. “Width control is a common weakness. Many bowlers bowl too wide outside the off stump, giving batters scoring opportunities. ”Economy rates are also affected by field placements, which sometimes do not support bowlers’ lines and lengths. “Bowling width is often neglected in coaching, yet it has a huge impact on run leakage.”	4

Pressure and Nerves	Performance decline under match pressure affecting economy rates and lengths.	“The economy rates tend to be quite high, especially under pressure. Many bowlers struggle to maintain a low run rate consistently. ”In training, bowlers perform better, but under match pressure, their economy rates worsen and lengths become erratic. “There are a few bowlers who show good control over length and line, especially in training, but this rarely translates into match situations. ”Consistency is a major issue, with fluctuations seen both in economy rates and bowling lengths during matches. “Overall, there’s room for improvement in all three parameters, but especially in maintaining consistency across matches.”	5
Some Positive Trends	Instances of bowlers showing good control in training but not in matches.	“There are a few bowlers who show good control over length and line, especially in training, but this rarely translates into match situations. “Strength-wise, some experienced bowlers can control their line well, which helps in containing runs. ”Some bowlers have strong natural abilities in maintaining consistent lengths, but this is not widespread. “Overall, there’s room for improvement in all three parameters, but especially in maintaining consistency across matches.”	4

Inconsistency Line and Length	Fluctuations in performance regarding lengths and run rates during matches.	“The economy rates tend to be quite high, especially under pressure. Many bowlers struggle to maintain a low run rate consistently. ”Consistency is a major issue, with fluctuations seen both in economy rates and bowling lengths during matches. “In training, bowlers perform better, but under match pressure, their economy rates worsen and lengths become erratic. ”There’s a noticeable gap between training performance and match execution, which affects overall bowling metrics. “Overall, there’s room for improvement in all three parameters, but especially in maintaining consistency across matches.”	5
Poor Width Control	Inability to maintain proper width leading to scoring opportunities for batters.	“Width control is a common weakness. Many bowlers bowl too wide outside the off stump, giving batters scoring opportunities. ”Bowling width is often neglected in coaching, yet it has a huge impact on run leakage. “Economy rates are also affected by field placements, which sometimes do not support bowlers’ lines and lengths. ”The weakness lies in lack of strategic bowling; bowlers do not always adjust length and width according to batter’s weaknesses. “Many young bowlers still need to develop awareness of how length and width affect run containment.”	5

Six major themes emerged from the examination of coach, player, and analyst answers that influence bowling performance in Zimbabwe women's cricket: inconsistent line and length, poor width control, tactical inexperience, technical shortcomings, pressure and nervousness, and some

encouraging characteristics. This was highlighted with the following coaches in their comments when answering the interview questions:

Tactical Inexperience

The weakness lies in lack of strategic bowling; bowlers do not always adjust length and width according to batter's weaknesses

(Coach B)

Many young bowlers still need to develop awareness of how length and width affect run containment

(Coach D)

There is a noticeable gap between training performance and match execution, which affects overall bowling metrics

(Coach E)

Technical Deficiencies

Bowling lengths are often inconsistent; some players bowl too short while others tend to overpitch, which reduces their effectiveness.

(Coach D)

Width control is a common weakness. Many bowlers bowl too wide outside the off stump, giving batters scoring opportunities.

(Coach E)

Pressure and Nerves

The economy rates tend to be quite high, especially under pressure. Many bowlers struggle to maintain a low run rate consistently.

(Player D)

There are a few bowlers who show good control over length and line, especially in training, but this rarely translates into match situations

(Coach C)

Some Positive Trends

There are a few bowlers who show good control over length and line, especially in training, but this rarely translates into match situations
(Coach A)

Inconsistency Line and Length

In training, bowlers perform better, but under match pressure, their economy rates worsen and lengths become erratic.

(Analyst)

There is a noticeable gap between training performance and match execution, which affects overall bowling metrics

(Coach A)

Poor Width Control

The weakness lies in lack of strategic bowling; bowlers do not always adjust length and width according to batter's weaknesses.

(Coach E)

Bowling width is often neglected in coaching, yet it has a huge impact on run leakage.

(Player C)

Nevertheless, despite these difficulties, several encouraging patterns surfaced, such as an increased focus on hitting the top of off and an understanding that accuracy and control frequently outperform speed. To enhance total bowling performance, these findings highlight the necessity of organised technical coaching, tactical instruction, and mental toughness training.

4.4.2 2. How does bowling length and economic rate influence overall bowling performance of Zimbabwe women's cricketers?

Table 4.3:

How does bowling length and economic rate influence overall bowling performance of Zimbabwe women's cricketers?

NVivo Code (Theme)	Theme Description or Definition	Matching Mentions from the Interviews	Number of Mentions
Short and Wide = High Risk	Deliveries that are too short or wide lead to higher run rates due to scoring opportunities.	“When bowlers pitch too full, batters tend to drive more, increasing the run rate quickly. “Short balls wide of the wicket often are cut or pulled, which leads to more boundaries and a higher economy. ”If a bowler drifts too wide, it opens scoring opportunities on the leg side, which inflates the economy. “When bowlers bowl with too much width, especially outside the off stump, the batter finds it easier to score. ”Bowling a consistent length but with poor width control still leads to higher runs, as batters exploit the gaps.”	9
Intentional Variation Works	Planning and executing variations in length and width can effectively limit runs.	“Maintaining a consistent good length usually forces batters to play cautiously, lowering the economy rate. “Variations in length and width are effective only if they are planned; random variations increase the economy rate. ”Bowling consistently in a tight corridor of length and width limits scoring shots and builds pressure, often leading to wickets. A well-executed good length ball combined with narrow width typically results in fewer runs and more dot balls.”	8

Format Matters	The impact of delivery style and format on bowler effectiveness.	“In one match, a bowler’s inability to control width allowed the batter to easily score through the off side, raising his economy rate significantly. “When length varies too much, batters get comfortable; either too short or too full deliveries reduce pressure. ”I’ve seen patterns where changing length without control confuses the bowler themselves, causing wades or loose balls.”	6
Execution is Key	The importance of precision in length and width control in achieving desired outcomes.	“I’ve noticed that bowlers who can bowl just outside off stump with minimal width make it harder for batters to score freely. “Overall, precision in both length and width directly correlates with a lower economy rate and better performance. ”Bowling consistently in a tight corridor of length and width limits scoring shots and builds pressure. “Variations in length and width are effective only if they are planned.”	9
Field Setting and Planning	The role of field placements and strategies in supporting bowlers.	“Overall, precision in both length and width directly correlates with a lower economy rate and better performance. “Bowling a consistent length but with poor width control still leads to higher runs, as batters exploit the gaps.”	4

Five main themes emerge from an analysis of interviewees' answers to Question 2. The following factors collectively demonstrate the complex influence of bowling variation on performance: Short and wide = High Risk, Execution is Key, Intentional Variation Works, Format Matters, and Field Setting and Planning:

Short and Wide = High Risk

When bowlers pitch too full, batters tend to drive more, increasing the run rate quickly.

(Coach A)

If a bowler drifts too wide, it opens scoring opportunities on the leg side, which inflates the economy

(Analyst)

Intentional Variation Works

Maintaining a consistent good length usually forces batters to play cautiously, lowering the economy rate.

(Coach D)

Bowling consistently in a tight corridor of length and width limits scoring shots and builds pressure, often leading to wickets

(Player G)

Format Matters

In one match, a bowler's inability to control width allowed the batter to easily score through the off side, raising his economy rate significantly

(Coach C)

When length varies too much, batters get comfortable; either too short or too full deliveries reduce pressure

(Player D)

Execution is Key

I have noticed that bowlers who can bowl just outside off stump with minimal width make it harder for batters to score freely.

(Player F)

Variations in length and width are effective only if they are planned

(Player H)

Field Setting and Planning

Overall, precision in both length and width directly correlates with a lower economy rate and better performance

(Player F)

Bowling a consistent length but with poor width control still leads to higher runs, as batters exploit the gaps

(Coach B)

When taken as a whole, the observations support the idea that, although bowling variety can be strategically advantageous, it must be planned, executed, and in line with field placements and match context to prevent negative effects.

4.4.3 3. How effective are current coaching frameworks in developing accurate bowling length, and widths and low economic rates?

Table 4.4:

How effective are current coaching frameworks in developing accurate bowling length, and widths and low economic rates?

NVivo Code (Theme)	Theme Description or Definition	Matching Mentions from the Interviews	Number of Mentions
Lack of Standardized Coaching Structure	Inconsistencies in coaching approaches and lack of uniformity in training methods.	“The current coaching framework provides a good foundation, but it lacks individualized focus on bowling length and width control. “Many coaches rely on traditional drills that do not fully prepare bowlers for match pressure situations. ”Coaching tends to emphasize physical fitness and basic skills but doesn’t always address tactical aspects like controlling economy rates. “Overall, the coaching framework needs updating to include more targeted interventions focusing	7

		on bowling mechanics and performance metrics. "Team training sessions sometimes neglect bowling-specific drills, focusing more on batting and fielding."	
Limited Individualized Coaching	The need for tailored coaching interventions to meet individual bowler needs.	"The coaching framework does not always tailor interventions to individual bowler's needs, which affects progress. "Mental preparation and game awareness are often overlooked in coaching, which affects bowling consistency. "Some coaches focus too much on pace and speed, neglecting line and length discipline. "I've seen improvement when coaches incorporate video analysis, but this is not consistently applied across all teams."	6
Coaching Gaps at Lower Levels	Insufficient training quality and focus at the grassroots or lower levels of coaching.	"Many coaches rely on traditional drills that don't fully prepare bowlers for match pressure situations. "There is limited emphasis on front-arm alignment and target drills, which are crucial for bowling accuracy. "Effective coaching occurs when drills simulate match scenarios, helping bowlers adapt length and width under pressure."	6
Resource Constraints	Limitations in resources affecting	"The biggest contribution to bowling improvement comes from regular feedback during practice sessions.	5

	coaching quality and scope.	“Lack of structured performance monitoring limits the ability to track improvements in bowling length and width. ”Coaches with more experience tend to produce bowlers with better control over economy rates and bowling parameters. “Self-learning as a fall back is sometimes necessary due to the gaps in coaching.”	
Self-learning as Fall back	The reliance on self-directed learning to compensate for coaching deficiencies.	“Self-learning as a fall back is sometimes necessary due to the gaps in coaching. “Many coaches rely on traditional drills that do not fully prepare bowlers for match pressure situations. ”The biggest contribution to bowling improvement comes from regular feedback during practice sessions.”	4

As evidenced by the recurring issue of a lack of standardised coaching structure (7 references), the answers to Interview Question 3 highlight serious flaws in the coaching frameworks for developing precise bowling techniques in Zimbabwe women's cricket:

Lack of Standardized Coaching Structure

The current coaching framework provides a good foundation, but it lacks individualized focus on bowling length and width control

(Coach A)

Team training sessions sometimes neglect bowling-specific drills, focusing more on batting and fielding

(Analyst)

Limited Individualized Coaching

The coaching framework does not always tailor interventions to individual bowler's needs, which affects progress

(Coach E)

I have seen improvement when coaches incorporate video analysis, but this is not consistently applied across all teams

(Player C)

Coaching Gaps at Lower Levels

Many coaches rely on traditional drills that do not fully prepare bowlers for match pressure situations.

(Coach E)

There is limited emphasis on front-arm alignment and target drills, which are crucial for bowling accuracy.

(Player D)

Resource Constraints

The biggest contribution to bowling improvement comes from regular feedback during practice sessions

(Coach A)

Lack of structured performance monitoring limits the ability to track improvements in bowling length and width.

(Coach B)

Self-learning as fall back

Self-learning as a fall back is sometimes necessary due to the gaps in coaching

(Player E)

The biggest contribution to bowling improvement comes from regular feedback during practice sessions
(Player H)

All of these results highlight how important it is to have a unified, well-funded coaching system that provides regular, tailored, and technically focused assistance at every level in order to enhance bowling performance in Zimbabwe women's cricket.

4.4.4 How can a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers be developed?

Table 4.5

What key elements should be included in a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers?

NVivo Code (Theme)	Theme Description or Definition	Matching Mentions from the Interviews	Number of Mentions
Focus on Technical Drills	Emphasis on specific skills and techniques to improve bowling performance.	“There should be more focus on technical drills like front-arm alignment and consistent follow-through. “Coaching should prioritize technical fundamentals before focusing on speed or variations.” Greater emphasis on biomechanics and body alignment would improve accuracy and reduce injuries.”	3
Individualized Coaching Plans	Tailored coaching strategies to meet the unique needs of each bowler.	“The framework must include individualized coaching plans that cater to each bowler’s strengths and weaknesses. “Including target-setting	2

		exercises helps bowlers become more strategic and disciplined.”	
Regular Performance Analysis	Use of video and feedback tools to enhance skill development and technique.	“Regular performance analysis using video tools can help bowlers understand and correct their technique. “Frequent assessments and feedback loops are essential for tracking improvement in length, width, and economy. ”Involving analysts and using data-driven feedback would make training more effective and goal-oriented.”	3
Structured Progression Models	Systematic development of skills from basic to advanced levels.	“We need structured progression models that build from basic to advanced bowling skills systematically. “Drills that replicate match intensity would help bowlers develop consistency in real-game scenarios.”	2
Mental Training Integration	Incorporating mental preparedness and simulations into training.	“Mental training and game situation simulations should be integrated into coaching to improve pressure handling.”	1
Coach Training in Modern Techniques	Need for continual education for coaches on updated methods and strategies.	“Coaches need more training in modern bowling techniques and athlete-centred coaching methods.”	1
Fitness Training Link	Connection between physical fitness and	“Fitness training should be linked directly to bowling actions to enhance performance and endurance.”	1

	bowling performance.		
Continuous Learning Framework	Encouraging ongoing education and collaborative learning among players.	“The framework should promote continuous learning, including peer review and collaborative learning among players.”	1

In developing a new framework for enhancing bowling techniques among Zimbabwean women cricketers, several key elements emerged from the interviews:

Focus on Technical Drills

There should be more focus on technical drills like front-arm alignment and consistent follow-through

(Coach D)

Greater emphasis on biomechanics and body alignment would improve accuracy and reduce injuries

(Analyst)

Individualized Coaching Plans

The framework must include individualized coaching plans that cater to each bowler's strengths and weaknesses

(Player F)

Including target-setting exercises helps bowlers become strategic and disciplined

(Coach B)

Regular Performance Analysis

Regular performance analysis using video tools can help bowlers understand and correct their technique

(Analyst)

Involving analysts and using data-driven feedback would make training more effective and goal-oriented

(Player G)

Structured Progression Models

We need structured progression models that build from basic to advanced bowling skills systematically

(Coach C)

Mental Training Integration

Mental training and game situation simulations should be integrated into coaching to improve pressure handling

(Player D)

Coach Training in Modern Techniques

Coaches need more training in modern bowling techniques and athlete-centred coaching methods

(Coach E)

Fitness Training Link

Fitness training should be linked directly to bowling actions to enhance performance and endurance

(Player F)

Continuous Learning Framework

The framework should promote continuous learning, including peer review and collaborative learning among players

(Coach A)

Overall, these elements collectively aim to foster a more tailored and effective approach to coaching in Zimbabwean women's cricket.

4.5 DISCUSSION

The results of this study mainly support the body of research on bowling performance issues in women's cricket, especially in developing cricketing nations. According to research by Biswas & Rao (2020) and Petersen et al. (2021), inconsistent line and length and poor control under duress are major performance problems for bowlers in development. These issues are strongly related to the themes of "inconsistent line and length," "pressure and nerves," and "short and wide = high risk," which represent more general tactical and technical shortcomings observed worldwide.

Furthermore, this study's findings on the significance of tactical comprehension and variation execution corroborate those of Bartlett (2016), who stressed that deliberate variation linked to game context and field setting is essential for effective bowling outcomes. The identification of mental components like rhythm, poise, and confidence also supports findings from top sport psychology research (Hardy et al., 2017), which contends that psychological preparedness is equally important as biomechanical skill.

Notably, this study fills in certain gaps in the literature on cricket in Zimbabwe, where there is a dearth of empirical data regarding the development of women's cricket, especially in bowling. The research offers in-depth understanding of micro-level technical treatments such front-arm

alignment and target drills, whereas the majority of studies concentrate on team performance or wider participation. Contextually extending under-researched areas such as structured technical instruction in low-resource situations is made possible by these discoveries. Furthermore, new levels of comprehension that are rarely recorded in southern African cricket literature are represented by the emphasis on tailored teaching, player participation in drills, and the gap between training and match application. Discussions on informal learning processes and their role in systems with limited resources are also sparked by the discovery of self-learning through IPL video or social media.

Additionally, the continuously high player involvement with focused drills highlights a sometimes-overlooked opportunity, when appropriately modified, systematic, low-cost technical interventions can yield quantifiable advantages. Secondly, short-term evaluation measures those short-format outputs should give way to long-term player development pathways in cricket development models. In contrast to industry standards like the ECB's "Women's Elite Framework" or Australia's "Pathway to Performance," Zimbabwe's coaching system is disjointed, underfunded, and inconsistent. This study highlights areas where Zimbabwean cricket needs to scale up by emphasising video feedback, one-on-one coaching, and standardised frameworks all of which are well aligned with best practices utilised in high-performance countries.

It is worth noting that the findings can help create a cohesive, practical coaching structure specifically for women's cricket in Zimbabwe. By expressing a bottom-up perspective of technical, tactical, and psychological growth demands, they close gaps in both academia and practice. In practice, the study promotes evidence-based and context-appropriate scalable solutions, such as coach mentorship, drill standardisation, and integrated video analysis. Academically speaking, it offers a unique qualitative contribution to athletic performance research from a gender-specific, low-resource setting. In the conclusion, this study supports the need for hybrid development models that combine locally viable tactics with international best practices, thereby bolstering the larger ecosystem for women's cricket growth in Zimbabwe and similar contexts.

4.6 CHAPTER SUMMARY

Presenting and analysing data was the focus of Chapter 4. The chapter concluded with a discussion of the results of the data presentation and analysis using NVivo software. In Chapter 5, the summary, conclusions, and recommendations will be examined.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Conclusions, recommendations, and a summary are the main topics of this chapter. Chapter 1's four research questions will be addressed in the conclusions. This chapter also offers suggestions for practice and additional research.

5.2 SUMMARY OF MAJOR FINDINGS

5.2.1 Major Findings on the Objective 1: 1. To explore the perceptions of Zimbabwean women cricketers regarding their current economy rates, bowling lengths and widths based on their experiences and observations.

According to the study, Zimbabwean women bowlers face difficulties with uneven line and length, inadequate control over width, technical errors, tactical inexperience, and problems associated to pressure. Performance is frequently disrupted by these difficulties, particularly when under stress or exhaustion. An increasing emphasis on precision and smart bowling, however, is positive. In order to improve bowling results, the results emphasise the necessity of organised technical coaching, tactical training, and mental conditioning.

5.2.2 Major Findings on the Objective 2: 2. To investigate how bowling length and economy rate influence the overall bowling performance of Zimbabwean women cricketers.

Five major themes emerged from the examination of how bowling variation impacts Zimbabwe women's cricket performance: the high danger of short and wide deliveries, the significance of execution, the advantages of purposeful variation, the impact of match structure, and the function of pitch setting. Especially in T20 matches, poorly performed variations—particularly short and wide balls—often result in costly overs. Nonetheless, variety can be useful if it is intentional, well executed, and grounded on scientific analysis. The necessity of modifying tactics for various formats and making sure field placements complement the planned bowling methods were also stressed by the respondents. Variation is useful overall, but it needs to be well thought out and carried out.

5.2.3 Major Findings on the Objective 3: 3. To evaluate the effectiveness of current coaching frameworks in developing accurate bowling lengths and widths, as well as achieving low economy rates.

Significant flaws in the teaching structure for improving bowling techniques in Zimbabwe women's cricket are highlighted by the results of Interview Question 3. The lack of a regulated coaching curriculum, restricted access to one-on-one technical coaching, and pervasive coaching gaps at the club and school levels are important problems. Player growth is further hampered by a lack of resources and limited access to resources like video analysis. Because of this, many players rely on informal self-learning methods like watching footage of professional cricket matches. These findings highlight the critical need for a cohesive, well-funded coaching program that provides bowlers of all skill levels with organised, reliable, and customised assistance.

5.2.4 Major Findings on the Objective 4: 4. To identify the key elements that should be included in a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers.

Key findings for enhancing bowling techniques among Zimbabwean women cricketers include a focus on technical drills like front-arm alignment, the importance of individualized coaching plans tailored to each bowler's strengths and weaknesses, and the use of video tools for regular performance analysis to improve understanding and correction of techniques. Additionally, structured progression models are essential for systematic skill development, while integrating mental training is crucial for managing pressure in competitive situations.

5.3 CONCLUSIONS

5.3.1 Research Question 1

What are the perceptions of Zimbabwean women cricketers regarding their current economic rates, bowling lengths, and widths based on their experiences and observations?

According to the results, bowling performance is viewed by Zimbabwean women cricket players, coaches, and analysts as being severely hampered by technical irregularities, inadequate width and length control, and a lack of tactical and psychological preparedness, especially with relation to

economy rates, lengths, and widths. They believe that numerous short and wide deliveries, especially when under stress or exhaustion, are associated with high economy rates. Notwithstanding these difficulties, the significance of precision, control, and clever variations is becoming more widely recognised. In order to sustainably increase bowling performance, the agreement emphasises the urgent need for an organised and resourced coaching system that incorporates technical instruction, tactical planning, individual feedback, video analysis, and mental conditioning.

5.3.2 Research Question 2

How does bowling length and economic rate influence overall bowling performance of Zimbabwe women's cricketers?

The results show that bowling variations, especially in length and width, are clearly linked to economy rates and overall performance, according to Zimbabwean women cricket players, coaches, and commentators. Particularly in T20 formats, poorly performed variations—particularly short and wide deliveries—are invariably linked to higher boundary rates and expensive overs. Nonetheless, variations are seen as useful instruments for upsetting batting rhythm and enhancing results provided they are deliberate, strategically in line with batter analysis, and backed by suitable field conditions. The effect of variance is therefore thought to be heavily reliant on accuracy, planning, match structure, and tactical strategy.

5.3.3 Research Question 3

How effective are current coaching frameworks in developing accurate bowling length, and widths and low economic rates?

The majority of Zimbabwean women's cricket teaching frameworks now in use are inefficient at helping players develop precise bowling techniques. Lack of a standardised curriculum, insufficient one-on-one coaching, coaching gaps at the grassroots level, and a lack of tools, such as video analysis, are some of the main problems. Many players therefore rely on unofficial self-learning. This emphasises how urgently a well-funded, well-organised coaching program is needed to promote steady and efficient skill growth.

5.3.4 Research Question 4

How can a new framework to better initiate and develop bowling techniques among Zimbabwean women cricketers be developed?

The findings indicate that a comprehensive and tailored approach is essential for enhancing bowling techniques among Zimbabwean women cricketers. Emphasizing technical drills and individualized coaching plans can significantly improve bowlers' performance by addressing their unique needs. Regular performance analysis using video tools fosters a deeper understanding of techniques, enabling effective corrections. Furthermore, structured progression models ensure systematic skill development, while mental training equips bowlers to handle pressure effectively. Overall, these elements collectively contribute to a more effective coaching framework, promoting sustained improvement in bowling performance.

5.4 LIMITATION TO THE STUDY

The use of self-reported data, which may have introduced bias, and the scarcity of context-specific literature on women's cricket in Zimbabwe were two of the study's shortcomings, making it difficult to place the research within a thorough academic framework. Concerns over anonymity also made some respondents first hesitant to divulge specific details. Purposive sampling was used to ensure relevance, virtual interviews were used to maximise participation, respondents were given confidentiality guarantees to promote transparency, triangulation was used to improve the validity and reliability of the data, and systematic coding was used to minimise these limitations.

5.5 IMPLICATIONS/RECOMMENDATIONS

5.5.1 Implications for Practice

- Establish a Standardised National Coaching Curriculum: Provide a cohesive, Zimbabwe-specific coaching framework that is suited to women's cricket and emphasises mental, tactical, and technical skills.
- Strengthen One-on-One Technical Coaching: Provide more access to tailored coaching sessions to target individual player shortcomings, particularly in line, length, and consistency under duress.

- **Include Video and Data Analysis Tools:** To facilitate evidence-based feedback and performance monitoring, outfit coaching programs with data tracking and video analysis tools.
- **Invest in Coach Education and Certification:** By providing organised training, certification, and mentorship programs for grassroots coaches, you can raise the calibre of coaching at the club and school levels.
- **Incorporate Mental Conditioning into Training Routines:** To assist bowlers in sustaining performance under match pressure, integrate stress management and sports psychology concepts into routine training.

5.5.2 Implication for Theory

- **Contextualises Bowling Challenges in Women's Cricket in Zimbabwe:** This study sheds light on the tactical and technical constraints Zimbabwean women bowlers' encounter, a subject that is not well covered in the literature now.
- **Shows the Relationship between Technical Execution and Match Performance:** The results broaden our theoretical understanding of performance measures in women's cricket by connecting line and length variations to economy rates and match results.
- **Adds Mental Conditioning to Bowling Development Theory:** Technical coaching approaches sometimes ignore this aspect, but the focus on psychological elements like pressure management brings it into focus.
- **Highlights the Value of Purposeful variety:** The study adds to ideas of strategic play and skill learning by showing that variety works best when it is well thought out.

5.5.3 Implications for Research

- **Longitudinal Studies on Coaching Interventions:** Future studies should monitor how structured coaching programs affect Zimbabwean women cricket players' bowling accuracy and performance over the long run. This would support sustainable coaching approaches and aid in proving causation.
- **Quantitative Analysis of Bowling Metrics:** Additional empirical research is required to evaluate the connection between bowling lengths, widths, and economy rates in women's

matches using statistical methods. Such information can support evidence-based coaching techniques and validate qualitative perceptions.

- Comparative Studies Across areas or Gender: Examining coaching methods and performance results in men and women's cricket, or between Zimbabwean areas, may highlight beneficial distinctions and best practices that apply to the women's game.

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(Replace with the actual title and URL of the report)

APPENDIX 1

INTERVIEW QUESTIONS

- 1. How would you describe the current state of bowling performance among Zimbabwean women cricketers, particularly regarding economy rates, bowling lengths, and bowling widths?**

Probes:

- What trends or patterns have you noticed in match situations?
 - Are there particular areas you feel are strengths or weaknesses?
- 2. In your experience, how do variations in bowling length and width affect a bowler's economy rate and overall performance during games?**

Probes:

- Can you think of specific match examples?
 - Are certain types of deliveries more or less effective in different match formats?
- 3. How effective do you think the current coaching frameworks are in developing accurate bowling techniques in Zimbabwe women's cricket?**

Probes:

- What coaching methods or resources are commonly used?
 - Are there areas where coaching support is lacking?
- 4. Have you or your players used targeted interventions such as front arm-alignment drills or target drills? If so, how effective have these been in improving bowling accuracy and performance?**

Probes:

- Which drills seem to have the most noticeable impact?
- How do players typically respond to these interventions?

5. What changes or improvements would you recommend to better support the initiation and development of effective bowling techniques among women cricketers in Zimbabwe?

Probes:

- What would an ideal coaching framework look like?
- Are there any resources, tools, or training methods you wish were more available?

APPENDIX 2

APPROVAL LETTER

BINDURA UNIVERSITY OF SCIENCE EDUCATION



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CHAIRPERSON DEPARTMENT OF SPORTS SCIENCE

7 April 2025

TO WHOM IT MAY CONCERN.

RE: UNDERGRADUATE DISSERTATION STUDY ACCESS REQUEST.

This is to certify that is a bonafide Bachelor of Science in Sports Science and Management student in the Department of Sports Science at the Bindura University of Science Education. He is conducting an action research study entitled: ‘ Developing a Framework for Initiating Bowling Techniques in Zimbabwe Women’s Cricket to Improve Bowling Performance’.

We are kindly requesting your organization to collaborate with him in the study by participating in the data collection and intervention strategy development process.

Participation in this research is voluntary, and you may choose to withdraw from the research at any time. The information from your organization will only be used for academic purposes and be kept private and confidential. Codes will be used to identify participant organizations. This is meant to ensure that information would not be linked to the providers. Password-protected computers will be used to store any identifiable information that may be obtained from your

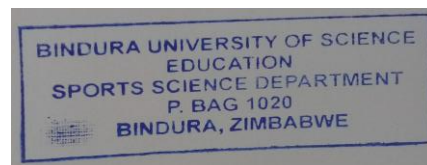
organization. Data will also be analysed at the group level to ensure anonymity. You can also sign confidentiality agreements with the researcher.

A copy of the finished work will be provided to your organization after the study. The results of the study are expected to transform practice, and your support will be pivotal to its success.

If you have any queries regarding this project, please feel free to contact us.

We would like to thank you in advance for your support.

Yours Sincerely



Lysias Tapiwanashe Charumbira (Dr.)