

Multi-Purpose Concept of Design: A Sustainable Strategy in Addressing the Widespread Redundancy of the “White Wedding Gowns” in the Ghanaian Culture

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A handwritten signature in blue ink, appearing to be 'Haruna Ibrahim', written in a cursive style.

Dedication

I dedicate this thesis in memory of the late Professor José Lucas from UBI. May his soul rest in the embrace of our Lord Jesus Christ. I also express my gratitude to Almighty God for providing me with the energy, guidance, courage, and perseverance throughout this academic journey.

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Resumo

As melhores práticas sustentáveis e a cultura material estão na vanguarda neste século XXI e, como resultado, a sustentabilidade e a circularidade se tornaram muito cruciais para o crescimento e desenvolvimento industrial global, não podendo a indústria do vestuário e têxteis ser deixada de fora. A indústria de vestuário e têxteis é considerada a segunda fonte que mais contribui para a poluição ambiental, logo após a indústria do petróleo, e isso se deve à adesão da indústria da moda a um sistema económico linear. A taxa alarmante deste comportamento descartável da indústria do vestuário exige a adoção de um conceito de design multifuncional como estratégia para conter essa postura do design que tem o potencial de prolongar a vida útil das roupas, incentivar o consumo sustentável, minimizar os gases de efeito de estufa e facilitar a transição para uma economia circular. O vestido de noiva, talvez seja um dos itens de vestuário mais comuns a ser descartado prematuramente ou a se tornar redundante em muitos guarda-roupa, assim que as cerimónias de casamento terminam, o que significa que se tornou um traje único, independentemente do tempo, dinheiro e outros recursos investidos em sua aquisição. Este comportamento de consumo é atribuído à falta de um pensamento inovador de design e também à falha em incorporar as necessidades e valores dos consumidores de roupas através da adoção de uma estratégia de co-design. Este estudo é de natureza qualitativa e, portanto, emprega abordagem metodológica mista, ou seja, métodos de pesquisa intervencionista e não intervencionista para abordar os objetivos do estudo. A tese possui dois objetivos principais (1) dar aos vestidos de noiva uma vida prolongada dentro da cultura do casamento no Gana, explorando por um lado o conceito polivalente de design e por outro, o desenvolvimento de produto através de co-design com utilizadores de vestidos de noiva; (2) propor um novo modelo conceitual e produzir uma amostra de vestido de noiva através de um protótipo sustentável a ser testado e validado.

Palavras-chave: Design de moda, Dobragem do Kente, Design multifuncional, Cultura Africana, Design de moda sustentável, co-design, Design centrado no utilizador, vestido de noiva

Abstract

Sustainable best practices and material culture are at the forefront in this 21st century, and as a result, sustainability and circularity have become very crucial for global industrial growth and development, and the clothing and textile industry cannot be left out. The clothing and textile industry is considered the second largest contributor to environmental pollution, after the oil industry, and this is due to the fashion industry's adherence to a linear economic system. The alarming rate of this disposable behaviour in the clothing industry requires the adoption of a multi-purpose design concept as a strategy to curb this design stance that may have the potential to extend the life of clothing, encourage sustainable consumption, minimise greenhouse gases and facilitate the transition to a circular economy. The wedding dress is perhaps one of the most common clothing items to be discarded prematurely or become redundant in many wardrobes once the wedding ceremonies are over, meaning that it has become a one-of-a-kind outfit regardless of the time, money and other resources invested in its acquisition. This consumer behaviour is attributed to the lack of innovative design thinking and also the failure to incorporate the needs and values of clothing consumers through the adoption of a co-design strategy. This study is qualitative in nature and therefore employs a mixed-methodological approach, i.e., a combination of interventionist and non-interventionist research methods, to address the study objectives. The thesis has two main objectives (1) to give wedding dresses an extended life within the wedding culture in Ghana by exploring on the one hand the multi-purpose concept of design and on the other hand, product development through co-design with wedding dress wearers; (2) propose a new conceptual model and produce a sample wedding dress through a sustainable prototype to be tested and validated.

Keywords: Fashion design, Multi-purpose design, Kente Wrapping, African culture, Sustainable fashion design, User-centred Design, bridal gown

Table of Contents

Content	Page
Declaração de Integridade	ii
Dedication	iv
Acknowledgement	vi
Resumo.....	viii
Abstract.....	x
Table of Contents.....	xii
List of Figures	xviii
List of Tables	xxii
List of Acronyms	xxiv
Glossary.....	xxv
Chapter 1	1
Introduction.....	1
1.1 Problem Statement	2
1.2 Objectives of the Study	5
1.3 Hypothesis	5
1.4 The Main Aim of the Study	6
1.5 Significance of the Study	6
1.5.1 Theoretical Significance	6
1.5.2 Practical and Design Significance.....	6
1.5.3 Cultural Significance	7
1.5.4 Socio-Economic and Contextual Significance	7
1.5.4 Educational and Industry Significance	7
1.5.5 Institutional Significance	7
1.6 Thesis Guide.....	7
Chapter 2.....	11
Theoretical Framework.....	11
2.1 Introductory Note.....	11
2.2 Historical Perspectives of Bridal Gown Design and Technique	12
2.3 History of Bridal Gown	13
2.3.1 Bridal Gown During the 20th Century.....	15
2.4 History of Bridal Gowns in Ghana	18
2.4.1 Pre-Independence Bridal Gown in Ghana	18
2.4.2 Post-Independence Bridal Gown in Ghana	21

2.5 Marriage Culture In Ghana.....	29
2.5.1 Traditional Akan Marriage System	32
2.6 Colour Symbolism In Bridal Gowns.....	35
2.7 Bridal Gown Design and Fabrics	38
2.8 Sustainability Challenges in the Bridalwear Industry	41
2.9 Kente Wrapping Technique and Cultural Sustainability in Ghanaian Bridalwear	43
2.10 Design Thinking Techniques (DTT).....	45
2.10.1 User-Centred Design as a Theoretical Framework for Kente Wrapping Techniques in Sustainable Bridal Design.....	49
2.10.2 Principle of Facilitation	51
2.10.3 Self Concept Theory	52
2.11 Multi-purpose Design Concept and Cultural Sustainability	45
2.12 Summary of Chapter	53
Chapter 3.....	56
Methodology.....	56
3.1 Introductory Note.....	56
3.2 Research Design.....	56
3.3 Population	58
3.4 Sample Size and Sampling Technique	59
3.5 Data Collection Instrument	59
3.5.1 Semi-structured Interview.....	59
3.5.2 Focus Group Discussion	60
3.6 Sources of Data.....	61
3.6.1 Primary Data	61
3.6.2 Secondary Data	61
3.7 Data Analysis Method	61
3.8 Summary of Chapter.....	61
Chapter 4.....	62
Presentation of Data, Analysis and Discussion.....	62
4.1 Introduction.....	62
4.2 Demographics of Participants	62
4.3 Co-Design Concept.....	65
4.3.1 Discussion on Findings of Co-Design Concept.....	68

4.3.2 Summary of Discussion	69
4.4 Multi-Purpose Concept Design	69
4.4.1 Handling of Wedding Gowns Across Different Groups	70
4.4.2 Summary of Discussion	71
4.4.3 Expertise in Designing Multi-Purpose Bridal Wear	72
4.4.4 Summary of Discussions	74
4.4.5 Multi-purpose use of bridal gowns	74
4.4.6 Style preference for bridal wear	76
4.4.7 Summary of Discussions	78
4.5 Sustainability of Wedding Gowns	78
4.5.1 Stakeholders' Perspective on Sustainable Bridal Gown	80
4.5.2 Summary of Discussions	82
Chapter 5.....	83
User-Centred Design (USD) Practice Workshop.....	83
5.1 Introduction	83
5.1.1 Phase 1: Technical Introduction to Kente Wrapping	84
5.1.2 Phase 2: Co-Creation and Material Experimentation	84
5.1.3 Development of Concept Sketching of Bridal Gown	86
5.1.4 Phase 3: Multi-Purpose Transformation Exercise	87
5.1.5 Phase 5: Group Reflection, Evaluation and Feedback Session	88
5.2 Mapping Workshop Outcomes to Research Objective.....	89
5.3 Critical Reflection and Limitations UCD Workshop	89
5.4 Fabric Selection	90
5.4.1 Fabric Dyeing.....	91
5.4.2 Motif Selection	91
5.4.3 Fabric Printing	93
5.4.4 Application of Fasteners and Closures on Final Print Fabric.....	95
5.5 Prototyping	95
5.6 Evaluating Prototypes	96
5.6.1 Final Design: Wrapping Guide to Traditional Bridal Gown	96
5.6.1.1 Evaluating the Bridal Gown	97
5.6.2 Final Design: Wrapping Guide to the Beach Wear	100

5.6.2.1 Evaluating the Beach Wear	101
5.6.3 Final Design: Wrapping Guide to the Cocktail Dress	105
5.6.3.1 Evaluating the Cocktail Dress	105
5.6.4 Final Design: Wrapping Guide to Morning Coat	109
5.6.4.1 Evaluating the Morning Coat	110
5.6.5 Final Design: Wrapping Guide to the Party Wear	113
5.6.5.1 Evaluating Party Wear	114
5.7 Final Adjustments to the Prototype	117
5.7.1 Adjustment Procedures	118
5.8 Discussion of Prototype	120
Chapter 6.....	122
6.1 Co-Design Conceptual Model Development	122
6.1.1 The Generative Phase- user-centred (UCD).....	123
6.1.2 The Active Research Phase	124
6.1.3 Principle of Facilitation.....	125
6.1.4 Self-Concept Theory.....	126
6.1.5 Evaluation	127
6.2 Application of Co-design Conceptual Model	128
CHAPTER 7.....	130
Summary of Findings, Conclusions and Further Actions.....	130
7.1 Final Considerations About the Research, Objectives, and Achieved Results – Introductory ..	130
7.2 Summary of Key Findings.....	131
7.3 Study Limitations	134
7.4 Key Contributions	135
7.5 Conclusions.....	136
7.6 Further Actions.....	137
7.4.1 Further Action for Married and Unmarried Individuals	138
7.4.2 Further Action for Historians and Cultural Scholars.....	138
7.4.3 Further Action for Clothing & Textile Teachers and Fashion Designers	138
7.4.4 Further Action for Industry Players (Ghana National Tailors and Dressmakers Association - GNTDA).....	139
7.4.5 Further Action for Policymakers.....	139

7.7 Thesis Dissemination.....	139
References.....	141
Appendix A.....	148
Appendix B.....	151
Appendix C.....	153
Appendix D.....	156
Appendix E.....	158
Appendix F.....	159
Appendix G.....	160
Appendix H.....	168
Appendix I.....	182
Appendix J.....	195

List of Figures

Figure	Page
Figure 1: Thesis Guide	9
Figure 2: Venn diagram.....	11
Figure 3: The marriage of Queen Victoria to Prince Albert	14
Figure 4: The marriage between Louis XII of France and Anne Bretagne.....	15
Figure 5: Margaret Whigham's wedding gown in 1933	16
Figure 6: Sgt. George and Margaret's wedding.....	16
Figure 7: Princess Elizabeth and Prince Philip	16
Figure 8: Britt Eklan and Peter Sellers' wedding.....	17
Figure 9: Yoko Ono and John Lennon's wedding	17
Figure 10: Princess Diana and Prince Charles' wedding	17
Figure 11: Wedding dress before independence	19
Figure 12: Wedding dress before independence	19
Figure 13: The “aboso”, a tube-like waistband	20
Figure 14: The “akataso” covers the body from the armpit	20
Figure 15: Slit and Kaba’s wedding dress	20
Figure 16 Mrs Letitia's wedding dress, 1951.....	20
Figure 17: Fashionable white wedding gown. Source: The Daily Graphic Archives	22
Figure 18: Emulating styles of world fashion.....	22
Figure 19: Extravagant wedding gown	23
Figure 20: Talked about the wedding gown.....	23
Figure 21: Ball gown worn by Ghanaian brides	24
Figure 22: Full-length bridal cape or shorter capelet.....	25
Figure 23: Mermaid Gown adorned by a Ghanaian bride.....	25
Figure 24: Feather Details Gown adorned by a Ghanaian bride	26
Figure 25: High collar gown adorned by the Ghanaian bride	27
Figure 26: Trumpet gown adorned by a Ghanaian bride	27
Figure 27: Traditional modern forms of gown Source: https://weddors.com/ghanaian	28
Figure 28: Ghanaian modern forms of gown.....	28
Figure 29: White gown with Ankara accents	29
Figure 30: White wedding dresses with Kente accents	29
Figure 31: Highlight of the Ashanti Empire	33
Figure 32: Framework for sustainable product relationships, empathic knowledge and the field of design	40
Figure 33: Ghanaian Ashanti Queen mothers in Kente Wrapping.....	43
Figure 34: Kente wrap-inspired Dress	45
Figure 35: General overview of a user-centred design process.....	49
Figure 36: Self-Perception of an Individual	52
Figure 37: The stage of developing multi-purpose clothing.....	45

Figure 38: Transformable Garment Offering 38 Garment Pieces	47
Figure 39: Research design/framework	58
Figure 40: Gender Distribution of Respondents	63
Figure 41: Educational Level Distribution of Respondents	64
Figure 42: Age Distribution of Respondents	65
Figure 43 Sewing of Bridal wear	66
Figure 44: Sewing According to Demand.....	67
Figure 45: Co-Design of Bridal Wear	68
Figure 46: Management of Bridal Wear	71
Figure 47: Multi-Purpose Concept Bridal Wear	73
Figure 48: Style Preference of Bridal Gowns	77
Figure 49: Sustainable Wedding Gown	80
Figure 50: Stakeholders' Perspective on Sustainable Bridal wear	82
Figure 51: Technical Introduction Session.....	84
Figure 52: Co-Creation and Material Experimentation	85
Figure 53: Moodboard.....	86
Figure 54: Transformational sketches of a traditional bridal gown	86
Figure 55: Transformational sketches of Cocktail Dress	87
Figure 56: Transformational sketches of Party Wear.....	87
Figure 57: Multi-purpose transformation sequence Exercise.....	88
Figure 58: Multi-purpose transformation sequence Exercise	88
Figure 59: Sample fabrics collected for experiment	90
Figure 60: final fabric.....	90
Figure 61: Images of the dyeing process	91
Figure 62: Osram ne nsoromma	92
Figure 63: Osram ne nsoromma	92
Figure 64: Akoma	92
Figure 65: Fabric Printing section of the study	93
Figure 66: Final Print for the study	94
Figure 67: Application of hooks.....	95
Figure 68: Application of loops	95
Figure 69: Final Wrapping Guide for the Bridal Gown.....	97
Figure 70: Front and Back of Traditional Bridal Gown.....	97
Figure 71: Wrapping Guide for Beach Wear	100
Figure 72: Beach Wear Front and Back.....	101
Figure 73: Guide to the Cocktail Dress	105
Figure 74: Cocktail Dress Front and Back.....	106
Figure 75: Guide to the Morning Coat	109
Figure 76: Morning Coat Front and Back	110
Figure 77: Party Wear Guide.....	113
Figure 78: Party Wear Front and Back.....	114

Figure 79: Wide Gaps	117
Figure 80: Marking overlapping.....	118
Figure 81: Applying Bias	118
Figure 82: Fixing hooks and loops	119
Figure 83: Wrong and Right Sides of Overlapping.....	119
Figure 84: Final Overlapping.....	120
Figure 85: Co-design conceptual model.....	123

List of Tables

Table	Page
Table 1: Demographic Distribution of Respondents	63
Table 2: Summary of Co-Design Practices	66
Table 3: Preference for handling Bridal wear	70
Table 4: Expertise in designing multi-purpose Bridal wear	72
Table 5: Responses on Multi-purpose use of Bridal gown	74
Table 6: Willingness to Receive Bridal Gowns for Modification	75
Table 7: Style preference for bridal wear.....	76
Table 8: Responses on the Sustainability of Wedding Gowns	78
Table 9: Stakeholders' Perspective on the Sustainability of Bridal Wear	81
Table 10: Judges' evaluation of the bridal gown	98
Table 11: Judges' evaluation of the beachwear.....	102
Table 12: Judges' evaluation of the cocktail dress	107
Table 13: Judges' evaluation of the MC	110
Table 14: Judges' evaluation of the Party Wear	115

List of Acronyms

Abbreviation	Meaning
BG	Bridal gown
BW	Beach Wear
CL	Clothing
CD	Cocktail Dress
CoD	Co-Design
CL	Clothing Longevity
C&T	Clothing and Textiles
CB	Centre Back
CF	Centre Front
DDT	Design Thinking Techniques
GNTDA	Ghana National Tailors and Dress Makers Association
KWT	Kente Wrapping Technique
MPC	Multi-Purpose Concept
MPBG	Multi-Purpose Bridal Gown
MC	Morning Coat
PW	Party Wear
SC	Self Concept
UBI	University of Beira Interior
UCD	User-Centred Design

Glossary

This glossary provides brief descriptions of key terms and ethnolinguistic groups referenced in this study. The entries aim to enhance clarity and contextual understanding for readers, particularly when discussing cultural, historical, and design-related concepts specific to the Ghanaian context. Definitions are presented concisely and neutrally, without attempting to capture the full complexity of each group or concept, but rather to situate them within the scope of the research.

Ethnic Groups:

Akan – A major ethnolinguistic group in southern Ghana, known for matrilineal social systems, rich textile traditions (notably kente), and significant influence on Ghanaian cultural, political, and artistic life.

Ashanti (Asante) – A prominent sub-group of the Akan, historically organised under the Ashanti Kingdom, recognised for elaborate ceremonial culture, gold symbolism, and highly developed kente weaving traditions.

Ewe – An ethnic group predominantly found in south-eastern Ghana, characterised by strong communal traditions, rich music and dance forms, and distinctive textile practices such as kente weaving and strip-cloth production.

Gonja – An ethnic group located mainly in northern Ghana, historically associated with the Gonja Kingdom, with cultural practices that blend Islamic and indigenous traditions, including distinctive dress and regalia.

Frafra – An ethnic group from north-eastern Ghana, particularly the Upper East Region, known for indigenous belief systems, earth-based architecture, and traditional handwoven textiles used in ceremonial contexts.

Mamprusi – A northern Ghanaian ethnic group with a long-established chieftaincy system under the Mamprugu Kingdom, recognised for their Islamic cultural influence and traditional smock (fugu) attire.

Dagomba (Dagbani) – One of the largest ethnic groups in northern Ghana, centred around the Dagbon Kingdom, known for a strong chieftaincy structure, drumming traditions, and distinctive woven smocks.

Kusasi – An ethnic group primarily located in north-eastern Ghana, particularly around Bawku, with cultural practices rooted in agriculture, communal life, and traditional handwoven clothing used in social and ceremonial events.

Traditional Fabrics and Techniques / Clothing:

Kente – traditional Akan fabric, woven in strips with geometric patterns and symbolic meaning.

Ntoma / Nwentoma – general term for cloth in Akan; today also refers to wax prints.

Ankara – modern African wax print fabric.

Slit and Kaba – traditional outfit: fitted long skirt (slit) + blouse (kaba).

Akataso – a garment covering the woman’s body from the underarm to the feet.

Abosoɔ – tubular band used as a belt/pouch for valuables.

Wrapping techniques – wrapping methods inspired by the traditional use of kente.

Adinkra Symbols and Akan Expressions:

Osrām Ne Nsoromma – “moon and star,” symbolising loyalty and harmony in marriage.

Me Meware Wo – “I will marry you,” expressing commitment and union.

Akoma – “heart,” representing love, patience, tolerance, and faith.

Marriage Rituals and Terms:

Abusua – Akan family lineage.

Abusuapanyin – lineage head.

Kasasie – private conversations between a couple before a formal announcement.

Abowmu bodze / Opon-aky bo – “knocking” ceremony (formal request).

Kokoo ko – traditional knocking on the door during a marriage request.

Tiri nsa – “head drinks,” a traditional beverage sealing the marriage.

Ti-aseda / Ti-ade – bride price paid to the bride’s family.

Akontagye sekna – money given to the bride’s brothers.

Vofofɔ – Ewe knocking ceremony.

Akpedaha – Ewe thanksgiving drink.

Sagolabla – groom’s service to bride’s family (Ewe).

Volanu – Ewe knocking fee.

Sronu tabianu – Ewe final bride wealth payment.

Chapter | 1

Introduction

In trying to set future paths for a more sustainable garment industry, the user may be considered as an important partner in making change. Short-term use is one of the characteristics resulting in overconsumption of clothing
(Armstrong et al., 2014, as cited in Durrani, Ravnløkke, & Niinimäki, 2017, p. 82)

The above quote from Armstrong et al. (2014), as cited in Durrani et al. (2017, p. 82), highlights the overarching issue the study seeks to address. More often than not, the wearers of clothes are considered to possess only purchasing power, and as a consequence of this perception, their involvement in design thinking techniques is often neglected, particularly in the discourse of Clothing (CL) longevity perspectives.

Therefore, the primary research question is: How can the involvement of wearers through user-centred design (UCD), particularly in the context of bridal gowns, serve as a source of design thinking techniques that influence the multiplicity of use and extend garment lifespan? Extending the life of clothing at the user phase of the clothing life cycle is a fundamental strategy in sustainable CL consumption (Earley et al., 2017).

However, extending clothing lifespan seems to be an unending discourse, because of the wearers' need for the latest fashion, which always influences premature disposal of CL products. But could that be the case of the Bridal Gown (BG)? The thesis explores and draws inspiration from the framework of (Niinimäki & Koskinen, 2011a) "Framework for sustainable product relationships, empathic knowledge and the field of design", using the theory of facilitation as a design tool in translating the wearers' needs and values (theory of needs), into tangible design outcomes through user-centred design (UCD) processes. The frame combines sustainable product relationships, emotional values in product experiences and attachments, the empathic approach, as well as the designers' role.

The context of this study is limited to extending the life span of bridal gowns at the user phase of the clothing life cycle. However, to understand and address the phenomenon of redundancy of the bridal gown at the user phase of the clothing life cycle, the study holistically contextualised information from both the BG sector and the mainstream CL industry simultaneously for an understanding of the dynamics and approaches towards addressing the objectives of the study.

It has been established that the BG sector is one of the largest waste contributors in the fashion and textiles industry in terms of usage (Suhartini et al., 2020). This consumption behaviour is attributed to a lack of wearers' involvement (co-design) as a design thinking approach in the design and development of CL for an extended life span (Armstrong et al., 2016).

It is against this background that the study argues for a multi-purpose design concept, supported by a practical conceptual model for contemporary bridal gown design, wherein wearers' involvement through user-centred design (UCD) constitutes a central design thinking approach. This approach is operationalised through the integration of the traditional **Kente wrapping technique**, which inherently allows adaptability, reconfiguration, and multiple modes of wearing. By drawing on this indigenous textile practice, the study aligns cultural heritage with user-centred design principles, enabling bridal gowns to be transformed beyond single-use ceremonial attire and thereby extending their functional and emotional lifespan.

Although the study focuses primarily on the bridal gown sector, specifically within the Ghanaian marriage culture, the proposed conceptual model is also intended to have relevance for the broader clothing industry, particularly within custom-made fashion contexts. To this end, the study addresses the following issues through an extensive review of literature and industry practice, interviews, observation, and practice-based research:

- Examination of historical perspectives of bridal gown design in relation to sustainability within Ghanaian marriage culture
- Analysis of the bridal gown life cycle, with particular emphasis on the user phase
- Critical discussion of the multi-purpose design concept in relation to existing conceptual models for bridal gown design
- Exploration of underpinning factors influencing design thinking approaches to wedding gowns
- Argument for wearers' involvement through user-centred design (UCD) as a design thinking approach to addressing bridal gown redundancy within Ghanaian marriage culture

The study culminates in the evaluation of a prototype bridal gown developed in accordance with industry standards. This evaluation establishes the acceptance of the proposed design approach based on innovation, sustainability, cultural relevance, and commercial viability. A focus group evaluation method is employed, comprising thesis supervisors, academic and industry fashion designers, married and prospective couples, and other relevant stakeholders. The evaluation criteria include usability, novelty, cultural value, performance, sustainability, and contribution to knowledge.

1.1 Problem Statement

The motivation for this study stems from preliminary interviews and a myriad of observations made by the researcher with couples on what they do with their bridal gowns after their wedding ceremony. Interestingly, the majority were of the view that they keep it for their daughters, but only for them to reject it, simply because it is out of fashion. This inadvertently means that it ceases to be useful to the bearer unless for memories. The bridal sector of the CL and textiles industry, according to Suhartini et al. (2020), is one of the largest waste contributors in terms of usage. But inevitably, an indispensable item in any wedding ceremony. It can take most of the time of a couple, particularly

the bride, going through magazines and fashion outlets searching and trying on different bridal gowns of the moment, which would be very grand on her on the day of her marriage (Malin et al., 2007).

Regretfully, this “all-important item” (the bridal gown) is considered one of the commonest CL items that are often disposed of prematurely or become redundant in the wardrobe of many as soon as wedding ceremonies are over (Schaefer & Navarro, 2016). This means that it has become one-time wearing attire, regardless of the time, money and other resources invested in its acquisition. It has been established that the user phase of the CL life cycle is one of the high impacts in environmental pollution (Fletcher & Grose, 2012; Gwilt & Rissanen, 2011), and this calls for concern, particularly in this era where sustainable resource consumption is of major concern to society at large.

Several scholars, in their bid to curb this phenomenon, conducted very thought-provoking studies. In particular, the study of Park (2018) titled, “***Development of Rental Children's Dresses Using the Abandoned Wedding Dress I***”, developed rental children's dresses from abandoned fast-fashion wedding dresses to expand the life span of BGs. While Suhartini et al. (2020) delved into the concept of upcycling wedding gowns, all in an attempt to curtail the premature disposal of BG and their negative impact on the environment.

Joining the discourse of this disposable behaviour, Kwon (2017) argues in his study “***Green Can Be the New White for Wedding Dresses***” that alternative design practices for wedding dresses should be explored to encourage the use of eco-wedding dresses. As if it isn't enough Schaefer & Navarro (2016) attributed the problem of premature disposal of BG to a lack of innovative thinking and design methodologies, and therefore suggested that there must be a revolution from the usage of traditional to nontraditional innovative design techniques of producing BGs to extend their life span and eliminate waste. In this respect, Armstrong et al. (2016) contend that achieving sustainability in the apparel industry necessitates a shift towards greater user involvement. This position highlights a critical gap that the present study seeks to address: the limited exploration of **user-centred design (UCD) as a design thinking approach** in mitigating bridal gown redundancy

The above suggestion by Armstrong *et al.* (2016) highlighted the gap this study is seeking to find answers to. Because the involvement (co-design) of the wearers of clothing as an innovative design thinking approach is something worth arguing for in the discourse of bridal gown redundancy within the Ghanaian marriage culture. Empirical evidence from Kirsi Niinimäki & Koskinen (2011) demonstrates that user involvement fosters emotional attachment, adaptability, and long-term use, thereby extending product lifespan. Such involvement enables garments to embody users' values, experiences, and identities, transforming them into meaningful and enduring artefacts.

In a related development, Niinimäki (2009), as cited in the study of Kirsi Niinimäki & Koskinen (2011), indicated that “***The user can experience joy and thus actualise her/his creativity***”

and be part of the continuing design process. Hence, creating meaningful uniqueness”(p.179).

The assertion by Niinimäki & Koskinen (2011) Gives importance and justification for the problem of the study, as the study argues for co-design with wearers of bridal gowns as a design thinking technique in addressing redundant bridal gowns. Leading researchers have somewhat sidelined wearers' involvement in the discourse of premature disposal of CL. Instead, focuses on the industry supply chain as well as the eco-efficiency and eco-sufficiency of CL as a way of resolving this intriguing consumption behaviour of CL (Gnanapragasam et al., 2017). Wearers of CL are major key stakeholders in the fashion and textile industry, and therefore their needs and values cannot be overemphasised in the discourse of premature disposal of BG and their negative impact on the environment. Wearers of clothes, apart from their purchasing power, still have much to offer in the discourse of the premature disposal of CL items (Niinimäki & Hassi, 2011).

Despite the purchasing power wearers of clothes possess, they still have more to offer, which the CL industry should not be overlooked in the discourse of sustainable bridal gown consumption (McDonough & Braungart, 2010). Clothes, including BGs, are designed without any recourse for wearers to participate or contribute in any way in the design process; you just have to pick from the masses of clothes according to your size and current fashion trend (Milburn, 2017), and the consequences of this industry approach toward designing clothes, is a disconnection of personal, unique 'feeling' of being part of the design process. And this is resulting in the premature disposal of CL at an alarming rate, of One Hundred and Forty Million Euros' worth of CL going to landfill each year. (James et al., 2019). This study, in its quest to address the aforementioned problem, hypothesises that the multi-purpose concept of designing the product through wearers' involvement (co-design) as a design thinking approach is a catalyst for reviving the redundancy of bridal gowns within the Ghanaian marriage culture.

It is evident, as cited in the study of Szentgyörgyvölgyi et al. (2018) that most of the existing conceptual models for designing sustainable clothing are more theoretical and do not consider wearers' involvement vis-à-vis their values and needs as a design thinking approach. Rather, most of the conceptual models for designing sustainable clothing are. In particular, Aakko et al. 2013; Jin Gam *et al.*, 2009; and Textile Environment Design (2006) primarily focused on sustainable improvement of the industry supply chain, ecoefficiency and sufficiency, production processes, with little discussion of consumption behaviour, usage and disposal of clothing. Current sustainable design thinking approaches and conceptual models for design and development of CL items, of which the BG is not an exception, have not made enough progress in the discourse of resource consumption in the fashion and textiles industry (Armstrong et al., 2011).

Within the Ghanaian marriage culture, where weddings hold profound cultural and social significance, the absence of wearer-centred design approaches in bridal gown production is particularly problematic. This study, therefore, hypothesises that a multi-purpose design concept

developed through user-centred design (UCD) can catalyse reviving the functional relevance of bridal gowns and extending their lifespan.

In addressing this problem, the study seeks answers to the following underpinning questions:

- What are the historical perspectives of wedding gown design and techniques?
- Can a multi-purpose design approach function as an alternative design thinking methodology for bridal gowns?
- What underpinning factors shape existing conceptual models of sustainable clothing design?
- How can the proposed conceptual model and developed prototype bridal gowns be evaluated for acceptance within the contemporary bridal gown industry?

In summary, this study argues that sustainable bridal gown consumption cannot be fully realised without recognising wearers as key stakeholders in the design process. User engagement through user-centred design (UCD) represents a largely underexplored yet powerful design thinking approach capable of addressing bridal gown redundancy and contributing meaningfully to sustainable clothing consumption (Connor-Crabb & Rigby, 2019)

1.2 Objectives of the Study

1. To examine the historical perspectives of wedding gowns and the redundancy rate within the Ghanaian marriage culture.
2. To explore the multi-purpose concept of product development and design sustainable bridal gowns through user-centred design (USD) with the Kente Wrapping Technique;
3. To propose a conceptual model for developing sustainable wedding gowns and develop a prototype BG to test the viability of the proposed conceptual model;
4. Evaluate the acceptance of the prototype BGs alongside the standard procedures of making gowns.

1.3 Hypothesis

In seeking to address the alarming rate of redundancy of bridal gowns within the Ghanaian marriage culture, the study hypothesised that:

1. Multi-purpose concept of product development through user-centred design (USD) with the Kente Wrapping Technique is a design thinking approach to addressing the redundancy of bridal gowns within the Ghanaian marriage culture.
2. A conceptual model wherein the wearers' needs and values are solicited for is the way forward for sustainable BG development.
3. Practically producing a sample prototype BG is the best way to test the viability of a new conceptual model.
4. Focus group analysis form of evaluation is the appropriate methodology for assessing the general acceptance of new products.

1.4 The Main Aim of the Study

The main aim of the study is to revive the redundancy of bridal gowns within the Ghanaian community by exploring the multi-purpose concept of product design, wherein wearers' involvement through user-centred design (UCD) is paramount in generating design thinking methodologies and techniques that influence the multiplicity of usage of bridal gowns. Within this approach, the study integrates traditional Kente wrapping techniques as a culturally grounded design strategy that enables adaptability, reconfiguration, and multiple modes of wearing, thereby extending the functional and emotional lifespan of bridal gowns.

The research has a twofold focus. First, to identify innovative design strategies grounded in user-centred design (UCD) principles, using kente-inspired wrapping techniques (a nondestructive clothing manufacturing technique) for multi-purpose bridal gowns to extend lifespan.

Secondly, to propose a conceptual model for the design and development of sustainable bridal gowns (BGs), as well as to develop a sample prototype bridal gown to test the viability of the proposed conceptual model. The proposed conceptual model takes inspiration from Niinimäki and Koskinen's (2011) *Framework for Sustainable Product Relationships, Empathic Knowledge and the Field of Design*.

1.5 Significance of the Study

This study is significant to the field of sustainable clothing and textiles, particularly within fashion design research, as it addresses the environmental, cultural, and functional challenges associated with the white wedding gowns. By foregrounding multi-purpose design, user-centred approaches, and culturally grounded practices, the study positions bridal wear as a critical site for sustainable innovation. The significance of the research is articulated across theoretical, practical, cultural, socio-economic, educational, and institutional dimensions, with particular relevance to the Ghanaian context and broader sustainability discourse in fashion design

1.5.1 Theoretical Significance

The study is significant in expanding theoretical discourse on sustainable fashion by integrating multi-purpose design, circularity, and user-centred design (UCD) within a culturally situated framework. It extends existing sustainability theories by demonstrating how indigenous practices, specifically the kente wrapping technique, can function as viable design strategies rather than symbolic references. In doing so, the research challenges Eurocentric and designer-led bridal paradigms and contributes a practice-led conceptual model that links sustainability with cultural continuity and user participation.

1.5.2 Practical and Design Significance

Practically, the study is significant in offering an alternative model for bridal gown design that addresses the widespread problem of single-use redundancy. Through the development and evaluation of a multi-purpose bridal gown prototype, the research demonstrates how non-destructive construction methods, adaptability, and co-design can enhance garment longevity,

usability, and value. This provides designers, educators, and industry stakeholders with actionable design principles that align sustainability goals with functional and aesthetic requirements.

1.5.3 Cultural Significance

Culturally, the study is significant in reclaiming and reinterpreting the kente wrapping technique as a contemporary design methodology rooted in Ghanaian identity and values. By foregrounding indigenous knowledge systems within sustainable fashion discourse, the research contributes to cultural continuity and responds to the marginalisation of traditional practices caused by the dominance of Eurocentric bridal aesthetics. The findings demonstrate that tradition and modernity can coexist through adaptive, user-driven design.

1.5.4 Socio-Economic and Contextual Significance

Within the Ghanaian context, the study is significant in addressing the economic inefficiency associated with single-use bridal gowns. By promoting multi-purpose bridal wear, the research supports more responsible consumption practices and maximises the return on financial investment for users. This approach aligns sustainability with socio-economic realities, making environmentally responsible bridal fashion more accessible and culturally relevant.

1.5.4 Educational and Industry Significance

The study is significant for fashion education and professional practice by providing a replicable, user-centred, and practice-based framework for teaching and designing sustainable bridal wear. It informs curriculum development in clothing and textiles education and encourages designers and artisans to adopt co-design and culturally responsive methodologies that respond to evolving consumer expectations.

1.5.5 Institutional Significance

At an institutional level, the study is significant in strengthening the research profile of the University of Beira Interior (UBI) by contributing original, practice-based knowledge to the field of sustainable fashion and textile design. Through its interdisciplinary focus and alignment with sustainability research agendas (SUST), the study enhances the University's role in generating and disseminating scientifically grounded, culturally informed design research within national and international academic networks.

1.6 Thesis Guide

The context of this study is to find solutions to the redundancy of the “white bridal gowns” for extended life within the Ghanaian marriage culture, by considering the application of more sustainable design principles. The project is centred on co-design and a multi-purpose concept of design as a sustainability approach and design thinking technique to promote slow consumption of bridal gowns and materials (fabric) and energy.

The study adopted the Ghanaian kente wrapping technique as an excellent technique for the production of circular bridal gowns that can reduce the asymmetry between rich and poor countries, and the affirmation of Ghanaian culture. Ghana is a third-world country faced with very low socio-

economic problems, and many families live in poor conditions. Fashion solutions in this respect should be more sustainable, versatile, and have a longer life cycle.

The project takes inspiration from the wrapping techniques of the Ghanaian Traditional Kente with the theme “**WRAPPED IN PRIDE**”. The kente wrapping technique is an excellent methodology to promote slow consumption, as the wrap is not necessarily subjected to several cuts to make an outfit. Since the fabric is not cut into several pieces for construction into a garment, it provides the opportunity for the fabric to be reused (multi-purpose) for different clothing items, i.e., Party outfit, Cocktail attire, Beachwear, Morning coat.

The thesis comprises seven (7) chapters and is segmented into three phases: the Explorative Phase (non-interventionist), Generative Phase (non-interventionist), and Active Research phase (interventionist). **Figure 1** below provides easy navigation to the thesis.

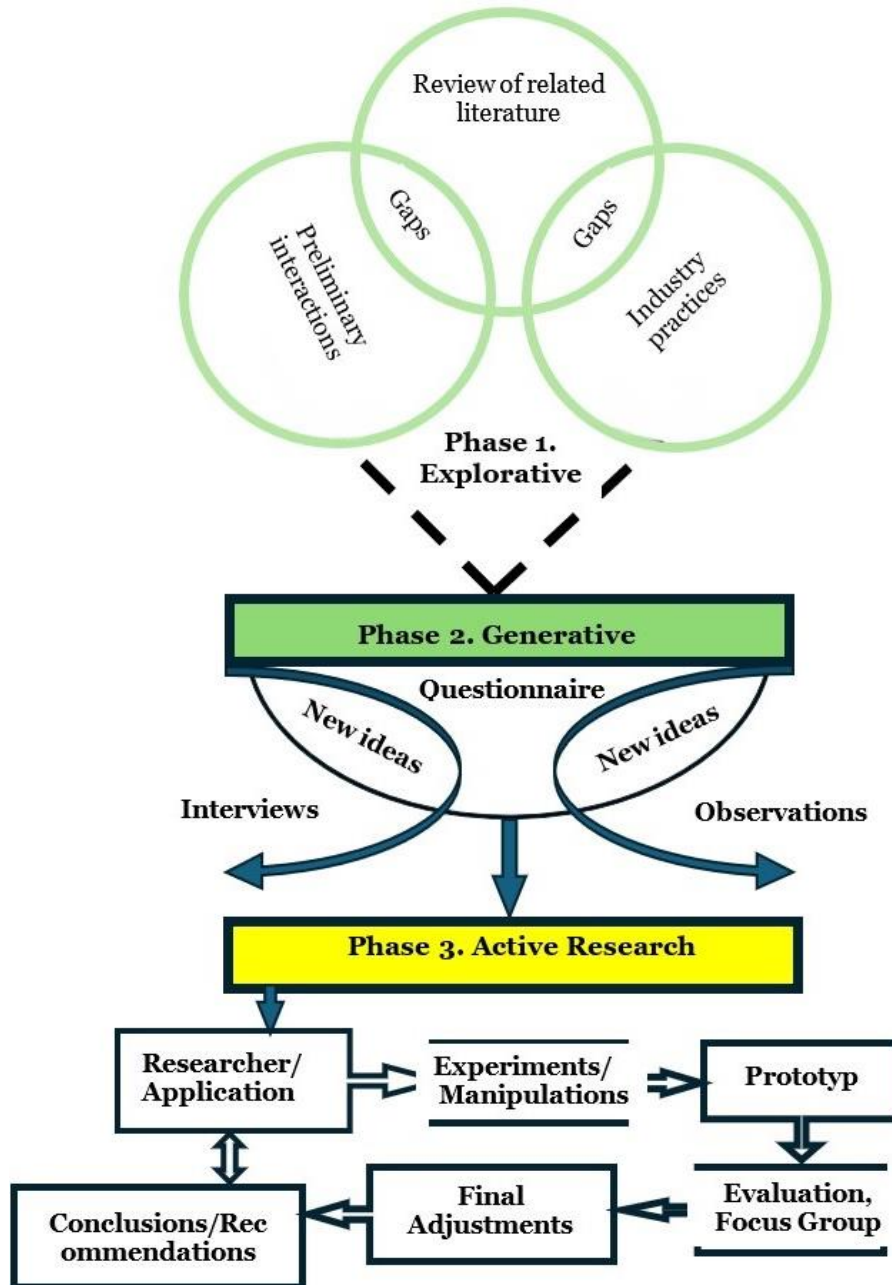


Figure 1: Thesis Guide

Source: Author

The **character one (1)**, thus introduction, highlights the overarching sustainability issues hampering the garment industry, particularly the over-consumption behaviour of clothing, triggering the phenomenon of redundancy (case study of the “white bridal gown”) in Ghanaian marriage culture. The chapter also contains the problematisation of the study, wherein the lack of involvement (co-design) and the lack of efficient conceptual models are highlighted in the production of context-specific bridal gowns for circularity. The chapter also encompasses the objective of the study, hypotheses, main aim and significance of the study.

Chapter two (2) represents the explorative phase – **phase 1** of the study. This chapter is the springboard to addressing objective 1 of the study, as the study seeks to find answers to the genesis

(historical perspectives) of the “white wedding gown” and its subsequent emergence in the Ghanaian marriage culture. To achieve this, the chapter presents a formidable state-of-the-art emanating from preliminary discussions, observations, critical review, and analysis of relevant empirical data and theoretical underpinnings relating to the subject matter under investigation to establish a conceptual framework for the study.

Chapter three (3) establishes the methodology and the systematic and scientific procedures used to arrive at the results and findings for a study against which claims for knowledge are evaluated. The chapter also represents the generative phase – **phase 2**. The chapter discusses the research design, population, sample size and sampling technique, data collection instrument, validity and reliability of the instrument, and data analysis procedure. The data were analysed qualitatively using NVivo version 8.0.

Chapter Four (4) forms part of **phase 2**. It focused on the analysis and discussion of responses from the sample respondents of the study. Ardently, the data were collected through interviews and questionnaires. The discussion is built around the main theoretical frameworks and the literature survey that provides the necessary background for interpreting the results. The analysis focused on the sustainable bridal wear design, the concept of co-design, multi-purpose concept, and sustainability in the bridal wear industry, and the impact of demographic factors on design preferences and consumer behaviour. The chapter ends with the deduction of the results, emphasising the implications for both theory and practice and setting the backdrop for the final chapter.

Chapter Five (5), thus Problem Definition and Steps: this is the active research phase – **phase 3**. It addresses objective two (2) of studies as the study seeks to explore the multi-purpose concept of product development and design sustainable circular bridal gowns using co-design techniques. It shows the involvement of the researcher in practical activities (experimental designs) as a way of exploring ideas relevant to developing a multi-purpose Akan traditional wedding gown using the traditional kente wrapping techniques. The chapter is summed up with a focus group analysis form of evaluation (objective 4) to evaluate the experimental prototypes in terms of their commercial viability, characteristics, novelty, cultural value, usefulness, usability performance and overall, how sustainable the product is and its contribution to scientific knowledge.

Chapter six (6) presents a conceptual model in fulfilment of objective three (3) of the study, as it projects to come out with a conceptual model in developing sustainable wedding gowns. This model is strategically developed to have the user of clothing as an active but not passive participant in the discourse of sustainable consumption in the garment industry. Existing models for designing sustainable clothing tend to be theoretically focused, with a primary emphasis on the sustainable aspects of the industry supply chain, eco-efficiency, sufficiency, and production processes. The aforementioned models have no room for user engagement (co-design).

Chapter seven (7) sums up the findings from the study, draws conclusions arising from the study and makes relevant recommendations and challenges for further research.

Chapter | 2

Theoretical Framework

2.1 Introductory Note

This chapter offers a thorough and critical analysis of the theoretical and empirical foundations pertinent to the subject under investigation. It establishes a coherent and robust conceptual framework that will guide the overall direction and structure of the study. Through constructive inference of theories, detailed discussions, critical analyses, and synthesis of existing literature, this section aims to uncover significant patterns, gaps, and intersections within the bridal gown industry, thereby anchoring the study in a well-established academic discourse.

Figure 2 (Venn diagram) below encapsulates the theoretical framework underpinning the research. This diagram acts as an integrative tool, illustrating the interconnectedness of various theoretical perspectives and empirical insights that form the core pillars of the study. It highlights the essential building blocks that inform the state-of-the-art review and aid in the identification of key issues and variables central to the research inquiry. Furthermore, it delineates the relationships between the main thematic areas that will be explored in the literature, thereby reinforcing the relevance and contextual grounding of the study. The work of (Ruud, 2010) It is particularly instrumental in shaping this analytical structure, offering valuable insights and conceptual alignments and overlaps with other research domains.

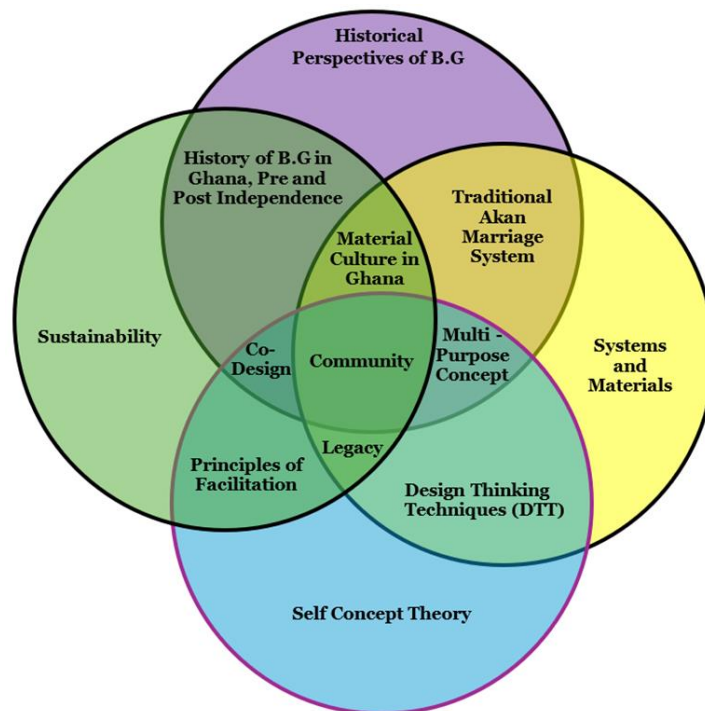


Figure 2: Venn diagram
Source: Author

2.2 Historical Perspectives of Bridal Gown Design and Technique

The white wedding gown is arguably the most extreme example of a disposable garment available on the market; despite the time, effort and money spent in its creation, it fulfils its purpose after just one use. The use of non-traditional design methods may achieve a more sustainable garment that also increases value for consumers (Schaefer & Navarro, 2016, p. 272)

The evolution of the “white wedding gown” can be traced as far back as 1499, when it was first documented during the marriage between Louis XII of France and Anne de Bretagne. It became generally accepted following the wedding ceremony of British Queen Victoria in 1840. A white wedding ceremony is said to be incomplete without the bridal gown, and this means that the duo is inseparable (Royal Anthropological Institute, 1951)

Accordingly, to be able to understand the historical dynamics of the bridal gown, the study presents an overview of what the “white wedding” entails. The term “white wedding” is a formally recognised union between a man and a woman, establishing a legal and social bond in which any children born to the woman are acknowledged as the legitimate descendants of both spouses. It marks the creation of a family unit, affirms mutual rights and responsibilities, and provides a recognised framework for lineage, inheritance, and social identity (Royal Anthropological Institute, 1951)

Burch (2019) intimated that different people with diverse cultural backgrounds have their unique ways of initiating this pair-bonding ritual. But the available literature highlighted that 90% of diverse cultures consider the “white wedding” as the topmost important rite of passage that is held in high esteem. Verily, the wedding gown is the most captivating artefact that adds glamour to this rite (Royal Anthropological Institute, 1951).

Contrary to the significance of the wedding, Carter & Duncan (2017) indicated that:

The significance of weddings appears to rest on the sand. Weddings are, of course, the public celebration of marriage. But marriage rates in twenty-first-century Britain are historically low, divorce and separation rates are high, and marriage is no longer generally seen as necessary for legitimate sexual relationships, long-term partnership, or even parenting (p.4).

White Weddings are becoming more common, particularly ornate and costly weddings, even as the social need for marriage is weakening. (Carter & Duncan, 2017). Certainly, if the significance of weddings is falling low, particularly in Great Britain, where the ‘white wedding gown’ is believed to have emanated from (Asmah et al., 2014). Then there is no doubt in concluding that the religious connotation of the BG has equally lost its significance and ‘sacrality’ in these modern times. Although one may argue that the religious and spiritual connotation of the BG cannot be undermined.

Certainly, Friese (2010) Argues from the post-modernist point of view that people are reluctant to ask questions such as “ ***what might be created during the process of selection and wearing of a bridal gown?*** (p.53)

Of course, if this question is frequently asked, the perception of the bridal gown losing its significance and also being perceived as an object that is produced, consumed and discarded will demise. In the same text, Friese (2010) Further, indicated that available literature on BG rather focuses on the historical account and the changes in style and fashion over the past centuries, and this invariably implies that the BG is simply a piece of an object. In other words, a piece of clothing that is worn and aesthetically admired by others in a wedding ceremony. Subsequent studies by Terian (2004) Indicated that only a handful of researchers have delved into the ‘sacrality’ of the BG to seek answers to the question of what the BG means beyond the physical aesthetics to the wearer.

Contrary to the above assertion, Otnes et al., (2003), and Ingraham & chrys (2009) defuse the idea of the BG being a ‘sacred’ item; they postulated that the BG in this contemporary world is primarily considered to be a profit-oriented object that is aesthetically pleasing to the bride and wedding invitees. This trend of the wedding gown metamorphosing from a sacred item to an object of a commercial entity is a result of the globalisation of the fashion industry and the deliberate commercialisation of weddings, particularly in the Middle East and East Asia (Ehrman, 2011).

In the eighteenth and early nineteenth centuries, the religious associations of the BG were very important. But in these modern times, it only represents a symbol of luxury, status, novelty and romantic love (Ehrman, 2011). From the modernist perspectives, the conclusion is drawn that the “***wedding dress is produced by a seamstress and then sold and worn on the day of the wedding; one could say that ‘it is used up’ on this day, as it is hardly ever worn.*** (Friese, 2010, p.53)

2.3 History of Bridal Gown

Historically, it has been revealed through literature that the philosophy of most brides wearing the “white wedding” gown stems from Western culture, more specifically from Great Britain, around the year 1442 till the present day (Asmah et al., 2014). The BG is a highly symbolic item and indispensable in every marriage ceremony; ironically, it (the bridal gown) makes a woman a “superstar” and unique on the day of her marriage.

The BG literally denotes considerable aspects of the marriage customs, particularly the femininity, social class, beliefs and values of the wearer (Ehrman,2011). The symbolic values of BG influence the bride's choice to fulfil her social recognition and psychological needs, as it is in line with Maslow’s Hierarchy of Needs Theory (TU & Chang, 2017). The choice of colour and design of bridal gowns largely depends on the prevailing fashion trends, socioeconomic factors (Zoi & Maria, 2014).

The design of bridal gowns is most intricate, innovative and modern to appease the bride and wedding invitees. The intricacy of the designs unavoidably wastes a significant amount of fabric during construction (Suhartini et al., 2020).

Characteristically, the colour white has become the most dominant colour featuring most wedding dresses, and the popularity of this norm has its roots in Queen Victoria of the United Kingdom since 1840, when she wore a white wedding dress during her marriage with Prince Albert. (Zoi & Maria, 2014). Figure 3 below shows a painting of the marriage of Queen Victoria to Prince Albert during the exchange of vows.



Figure 3: The marriage of Queen Victoria to Prince Albert
Source: Gunn (1994)

However, the white BG did not become common in the middle classes in English-speaking countries until the 1950s and was still limited to first-time ‘virginal’ brides. It was the 1980s, with the rise of the lavish wedding, that saw the general acceptance of white BG of all social classes and its subsequent spread to many parts of the world, including Ghana. (Leeds-Hurwitz, 2002). Throwing more light on the history of bridal gowns Amankwah (2013) without any ambiguity, stated that the BG was first documented as far back as 1499 during the marriage between Louis XII of France and Anne de Bretagne. **Figure 4** below is a painting of the marriage between Anne and Louis exchanging VOWS.



Figure 4: The marriage between Louis XII of France and Anne Bretagne
Source: Gillot (1837)

During the interwar era, heavy and intricate brocade gowns were very prevalent and mostly worn by royal families; red colour was a very popular choice to invoke fertility in the marriage. Towards the 19th century, the designs gradually metamorphosed to evening wear styles with varied colours to include ivory, blue and red, besides white (Zoi & Maria, 2014). The economic hardship of the 20th century, particularly after World War II, inevitably led to a new trend in style and general practices in the bridal gown industry. Bridal gowns during this era were worn more frequently (Howard, 2008).

2.3.1 Bridal Gown During the 20th Century

The 20th Century saw a profound change in bridal gowns. In the early 1900s, wedding gown styles with a narrow waist (used with a corset) and puffed sleeves were popular (Fisher, 2015). Details like frills, high collars, and long trains were also seen in this timeframe. During the 1910s, brides began wearing looser dress styles (Finley, 2016). Dancing at weddings became popular during this time period, and corsets became less common.

In the 1920s and 1930s, there were two distinct trends in wedding gowns. The 1920s saw a rise in daring wedding dresses that emulated the short 'flapper' everyday style of the decade (Fisher, 2015). Dropped waists teamed with raised hemlines meant that baring ankles went from being a shocking taboo to an everyday wedding fashion. These shorter dresses were often teamed with the popular Juliet cap veil that replicated the cloche hat style that dominated fashions in the 1920s. Satin dresses with long trains and veils became increasingly popular towards the end of the 1920s and throughout the 1930s. Weddings became huge news due to the growth of the media and society, with people regularly queuing in the streets to see a bride in her wedding gown and photographs appearing in newspapers across the world (Fisher, 2015). As a result, the demand for expensive, show-stopping gowns skyrocketed. The gown worn by Margaret Whigham for her wedding in 1933. **Figure 5** epitomises the emergence of these show-stopping wedding gowns of the 1930s.



Figure 5: Margaret Whigham's wedding gown in 1933

Source: barnebys.co.uk/blog/

In the 1940s, World War II had a significant impact on wedding gowns. During these decades, brides made their own dresses using fabric not subject to rationing or easily available fabric like parachute silk, re-worked old dresses, and even wore dresses previously worn by others in order to save money. As weddings became more low-key occasions, simple dress designs and skirt and jacket combinations were fashionable, and servicewomen wedded in their uniforms (**Figure 6**). As the decade moved into the 1950s, the wedding of Queen Elizabeth II to Prince Philip in 1947 and Christian Dior's 'new look' celebrating the hourglass figure in the same year brought back the fashion for lace and long-sleeved dresses with full skirts and cinched-in waists (**Figure 7**).



Figure 6: Sgt. George and Margaret's wedding

Source: donmooreswartales.files.wordpress.com



Figure 7: Princess Elizabeth & Prince Philip

Source: donmooreswartales.files.wordpress.com

Grace Kelly's magnificent 1950s wedding gown had a lasting impact on the bridal fashion scene in the early 1960s. Brides wanting a 'traditional' and romantic touch to their wedding wore cinched waists with billowing skirts, but as the decade continued and the influence of Mary Quant's short

skirts and the dramatic 60s styles were felt, wedding gowns began to vary. The 1960s featured the most diverse wedding clothes of any decade before it (**Figures 8 and 9**). Since the 1930s, famous weddings continue to cause hysteria across the world; Hollywood weddings and Royal weddings cause the most sensation, with the wedding dress often being the main talking point.



Figure 8: Britt Ekland and Peter Sellers' wedding

Source: gq-magazine.co.uk



Figure 9: Yoko Ono and John Lennon's wedding

Source: vintageweddingfair.co.uk

The excess of the 1980s found its way into wedding dresses, with princess-style gowns featuring large puffed sleeves. Lace and tulle layers were popular, and dresses were often made of taffeta. The 1980s led to a decade of 'big' weddings and even bigger wedding dresses. Gone were the simple flowing designs of the 1970s, and instead everything became very 'exaggerated', brides wanted to emulate the Princess with extravagant dresses boasting large sleeves, trains, skirts and even large bouquets. The images of the wedding of the 'People's Princess' Diana to Prince Charles in 1981 are some of the most famous wedding photos ever taken (**Figure 10**).



Figure 10: Princess Diana and Prince Charles' wedding

Source: barnebys.co.uk/blog/

While bridal attire varied in the 1990s, most dresses leaned towards sleek, streamlined styles that contrasted the 80s look. Form-fitted dresses were popular. Brides continue to personalise their wedding dresses, and although white or off-white remains the prevalent gown colour, there are more variations. Trends have included coloured accents on dresses, blush-coloured wedding dresses, and solid-colour or patterned styles. Bridal gowns will always be influenced by current fashion trends, but as the 20th century has demonstrated, classic features may still be found among the shifting styles.

2.4 History of Bridal Gowns in Ghana

In Ghanaian culture, or more specifically Ashanti culture, which serves as the term of reference for the research, couples, by way of tradition, normally hold a ‘traditional’ wedding followed by a religious/legal/civic wedding. This means that couples are married in the eyes of the community and in the eyes of the church or law (Bekoe, 2020). The ‘traditional’ wedding is a very important element of the unifying of the couple and is typically a group affair, involving immediate and distant family members and all members of the local community.

The groom is accompanied by his family to formally ask the bride’s family for the bride’s hand in marriage. This starts with a knocking on the door ceremony. The groom, his father and family elders visit the bride’s house to knock on the door following the traditional “kokoo ko” knocking on the entrance of the house (Bekoe, 2020). Here, the groom is greeted by the bride’s male family members, who make the groom and his party wait by not opening the door for some time. Eventually, the groom is allowed in, presenting alcoholic beverages (typically schnapps used to pour libation as a traditional form of prayer to the ancestral spirits and God) and some money to the bride’s family (Bekoe, 2020).

Asmah, Frimpong and Asinyo (2014) mentioned that until colonisation, there was nothing like a ‘*white wedding*’. It is something Ghanaians simply adopted. Therefore, one does not need a white wedding to be married; a traditional marriage alone is enough to call someone “*husband and wife*”. Besides, no other marriage brings the two families together more than the traditional marriage. During the wedding ceremony, the bride normally wears traditional woven garments in symbolic colours: white, blue, yellow (orange) and black. The bride may choose to wear the traditional Kente and “ntoma” fabric during the actual wedding ceremony (Alabi, 2020).

2.4.1 Pre-Independence Bridal Gown in Ghana

A bridal dress is traditionally made to make the bride the centre of attraction. Bride dresses before independence were elaborated, and their designs could incorporate up to five pieces, including a shawl, blouse, wrap skirt, head wrap and the traditional veil (Asmah *et al.*, 2014). The main identity of wedding dresses before independence is that the outfits feature bright and colourful patterns and designs: embellished by psychedelic prints and embroidery, they do not shy away from brightly colored wedding dresses. The choice of colour of attire for both the bride and groom is a deliberate exercise as each tone may be representative of a specific religious belief, custom or tradition.

The bridal gown fabric is made of “kente” cloth or “Nwentoma”, which is a type of silk and cotton fabric made of interwoven cloth strips. Despite being a fabric that was created by the Akan people who live in the Ashanti, parts of Eastern, Brong Ahafo, Western and Central regions, it is patronised by every Ghanaian tribe. Whichever the ethnic group of the bride, she finds a specific Kente that represents her heritage and identity.

According to tradition, kente is reserved for special occasions; it is not meant to be used for commonplace or daily activities or as ordinary wear. It can also be used as a special gift item or a clothing item used for a marriage ceremony (Asare, 1992 & Asmah *et al.*, 2014). Kente is used not only for its beauty but also for its symbolic significance. Each of the cloths has a name and a meaning; names and meanings are derived from historical events, individual achievements, proverbs, philosophical concepts, oral literature, moral values, social code of conduct, human behaviour, and certain attributes of plant and animal life. Originally, the kente was a royal fabric. It was worn by the notables and peers of royal lineage at major ceremonies (Asare, 1992). The kente may be selected according to its colour because it has a symbolic meaning.

During the pre-independent era, it was also common to see brides during a marriage ceremony, wearing a lace top (blouse) with two pieces of cloth wrapped around the waist. Alternatively, some brides may choose to wrap only the cloth covering the upper body down to the knee level (**Figures 11 and 12**). The bridegroom wears a big cloth around his body and a big necklace. In addition, before independence, brides often wore “Kaba/silt”, “akataso” and “aboso” cotton printed dresses, among others. The colour options and fabric choices, and garment designs for bride gowns were very important. The concept of “akataso” and “aboso” (a storage pouch worn at the waistline) was used by brides during the wedding ceremony (Kissiedu, 1986 & Asmah *et al.*, 2014).



Figure 11: Wedding dress before independence
Source: <https://blackandbeautiful.fr/blog/>



Figure 12: Wedding dress before independence
Source: The Daily Graphic Archives

“A boso” is a long, narrow, tube-like strip of cloth normally worn as a supportive belt, concealed around the waist as a waist cloth, and again covered with a cover cloth (Figure 13). The tube-like strip

is sewn exactly in the middle, and the two ends are left open to receive the precious objects. The two ends are then tied together at the waistline. The “akataso” refers to the use of cloth to cover the body from a lady’s armpit to her feet (Figure 14). This denotes the preservation of the bride’s ‘valuables’, which are exposed only to the husband on the day of their honeymoon (Asmah et al., 2014).



Figure 13: The “aboso”, a tube-like waistband
Source: The Daily Graphic Archives.



Figure 14: The “akataso” covers the body from the armpit
Source: The Daily Graphic Archives

Brides during the 1950s often wore ‘Slit and Kaba’ during wedding occasions. The ‘Slit’ is a long, fitted skirt that hugs the bride’s curves beautifully (Ampratwum, 1991). The ‘Slit’ is held up to the waist of the bride with an inserted string, which is then tied and secured. In modern times, the string has been replaced with a zip, which gives the wearer a seamless fit. The Kaba is a fitted top that sits beautifully on the Slit, yet again accentuating the curves of the bride (Ampratwum, 1991). The style of the Slit and Kaba can vary (**Figures 15 and 16**), from a simple look or an elaborate look for a wedding ceremony.



Figure 15: Slit and Kaba’s wedding dress
Source: The Daily Graphic Archives



Figure 16: Mrs Letitia’s wedding dress, 1951
Source: The Daily Graphic Archives

2.4.2 Post-Independence Bridal Gown in Ghana

Western fashion has influenced the style of dress of many non-Western cultures, in some areas replacing the traditional dress entirely (Hudson, 2010). Wedding celebrations are sometimes the only places where a semblance of a culture's traditional dress survives. Several countries incorporated the white wedding gown into their wedding traditions during the early and mid twentieth century.

In Ghana now, one can find Western fashion in bridal gowns, either through the style of dress, type of fabric, or style of accessories (Alabi, 2020). The white wedding dress of Western culture can be found among the wedding traditions of several Ghanaian cultures (Hudson, 2010). Contemporary versions of the white wedding dress are often in great demand and worn in addition to or instead of the traditional wedding dress. Traditional Ghanaian weddings fell out of favour during rapid industrial growth and the emergence onto the world marketplace. Brides during post-independence were not only wearing world fashions, but they were actively revising world fashions to suit their own tastes and preferences. One such example was featured in the 1956 article from the Sunday Mirror, "New Styles in Frocks for Brides." As Takyiwa described, "in a society wedding in Accra, the bride sprang a welcome surprise on fashion-mongers when she turned up in a short white wedding gown. The dressmaker used 65 yards of embroidery in designing the gown (Takyiwa, 1956, p.4) (**Figure 17**). As Takyiwa asserted, "A discriminating bride and a competent dressmaker combined to give the fashionable white wedding gown". The bride's white wedding gown was a clear departure from the accepted style of European wedding dresses in Ghana.

A concerned Ghanaian bride queried, "Is it necessary to wear a long white bridal dress when the bridegroom wears striped trousers and a black coat?" The Sunday Mirror responded with the following advice: "the white bridal gown with long skirt is correct when the bridegroom wears formal morning dress. Most brides prefer long dresses because they are so graceful and becoming" (Serwaa, 1993, p.1). By shortening her wedding dress, the unidentified bride challenged the accepted dress practice of floor-length wedding gowns, illustrating that individual Ghanaian women were actively revising wedding gowns to reflect their own preferences and creativity (Ampratwum, 1991).

During the post-independent period, brides were attempting to revise and reinvent the existing traditional wedding gown. Brides were actively wearing and adapting world fashions for their wedding ceremonies (Serwaa, 1993, 1995). The prominence given to the world's fashion by brides suggests that they directly influenced the traditional wedding dress of Ghanaians, encouraging brides to emulate the styles of world fashion, as seen on the pages of the Sunday Mirror (**Figure 18**).

In addition to the brides' awareness and acceptance of the white wedding gown, they were specifically exposed to the creations of British couture designers. In a 1954 Sunday Mirror feature on the "Latest Fashions in wedding dress", several photographs presented dramatic and elaborate wedding gowns by brides.



Figure 17: Fashionable white wedding gown.

Source: The Daily Graphic Archives



Figure 18: Emulating styles of world fashion

Source: The Daily Graphic Archives

Weddings featured during the post-independence period were extravagant affairs that further attest to the newspaper's focus on Accra's elite citizenry and culture. One such example is the wedding of "Miss Hilda Vardon, Ghana's first woman dentist and the bridegroom, Mr K.B. Agyensu, Clerk of Ghana's Legislative Assembly"(1962) " , 800 attend". The wedding featured an elegant white wedding dress (**Figure 19**). The wedding, comprised of 800 guests and four officiating priests, was described as "the year's biggest society wedding" (Serwaa, 1995, p.9).

Another wedding couple, featured under the headline "One which Rocked Accra," was identified as the daughter of a wealthy Nigerian businessman, Nike Oluwole and her Ghanaian husband, Joe Sam-Welsing (**Figure 20**). The wedding was described as a "sizzling and swinging affair as the local beauties and those from Nigeria, rallied round in their best to add to their romantic radiance" (A Serious Business 1964: 6).

One aspect of the wedding that "perhaps set people talking was the bride's wedding gown and the seven-tier wedding cake" (1964: 6). The lavishness of these weddings, coupled with the newlyweds' occupations, further alludes to the presence of a thriving elite culture in Ghana.



Figure 19: Extravagant wedding gown
Source: The Daily Graphic Archives



Figure 20: Talked about the wedding gown
Source: The Daily Graphic Archives

According to Alarbi (2020), Ghanaian brides now tend to choose white dresses, to keep with the norm. White wedding gowns are primarily preferred by brides for their wedding ceremony. They are worn by the bride as a symbol of purity, innocence, and goodness. White is the colour most often associated with innocence or purity. Like any other dress, the style of the bridal gown depends on not just the fabric, but the overall shape and features.

Some of the most popular contemporary dress styles used by Ghanaian brides in this 21st century include: A-line, ballgown, empire, mermaid, full-length, and trumpet. Ghanaian brides choose a ball gown that suits their style and body. The ball is a very big and full dress. It has a huge skirt underneath, which has a silhouette and a fitted bodice which cinches at the natural waist. The fullness of a ball gown dress makes brides with boyish figures look curvier (**Figure 21**). Petite brides avoid these gowns because they get swallowed up by the dress.



Figure 21: Ball gown worn by Ghanaian brides

Source: <http://www.fashionghana.com/site/all-the-wedding-gown-styles>

Ghanaian brides sometimes put on a full-length bridal cape or shorter capelet. The bride put on this gown because it is the perfect alternative if she is not into veils. It adds dimension to the bridal gown, and it feels modern (**Figure 22**). The brides put on this contemporary bridal gown as an easy way to pull off a mid-wedding outfit change, wear a cape or capelet for the ceremony, then whisk it away to reveal a different look for the reception.

The Mermaid Gown is adorned by Ghanaian brides to look stunning on their wedding day. This style of bridal gown is slim, tapered, and has a curve-hugging skirt that follows the line of the hips and thighs. It flares out below the knee. Brides with hourglass figures who want to show off their curves can rock this style of dress (**Figure 23**). The style took over the runways, and made a dramatic exit with a large bow on the train or added some structure and accentuated the waist with a bow sash.



Figure 22: Full-length bridal cape or shorter capelet

Source: <http://www.fashionghana.com/site/all-the-wedding-gown-styles>

The bride keeps the accessories simple with this trend and lets the bold bow do all the talking. This style is constricting; worth noting if the bride does not want something tight. The mermaid dress is characterised by its fitted style, which hugs close to the bride's body. Brides especially choose a mermaid wedding dress because it refines the waist with emphasis on the hips. This model is especially encouraged for people who are quite thin, with a generous bust and a well-defined waist and hips.



Figure 23: Mermaid Gown adorned by a Ghanaian bride

Source: <http://www.fashionghana.com/site/all-the-wedding-gown-styles>

Ghanaian brides put on a feather detail gown as a memorable piece of clothing during their wedding ceremony. A wedding gown with feathers is perfect for brides who have dreamed of a fanciful gown on their big day. And lately, bridal designers are delivering in spades, from Monique Lhuillier's A-

line gown with hot-pink plumes to Oscar de la Renta's strapless silk organza dress with a full-feathered skirt. Many iterations come with delicate feathered details, incorporated as playful accents to minimal and classic designs (Lajiness, 2021). Feather details gown style has been hot for a few seasons, but wispy plumes like delicate ostrich feathers can make even the simplest silhouette eye-catching. Get glam with a totally feathered skirt or opt for just a few well-placed plumes to give your look an airy twist **(Figure 24)**.



Figure 24: Feather Details Gown adorned by a Ghanaian bride

Source: <http://www.fashionghana.com/site/all-the-wedding-gown-styles>

The high-collar gown put on by Ghanaian brides gives off serious high-fashion vibes. God with scalloped lace for a regal feel, or go super-modern with a sleek one made of satin. The collar and the sleeve are sometimes designed entirely in lace. This long white dress combines glamour, elegance, femininity and romance. It brings comfort and ease in broad daylight. This wedding outfit is very popular not only for its lightness, but also for its cut and style. The wedding gown presents a classic style, characterised by a pretty high collar, a padded sweetheart bustier and long, short sleeves. The gown greatly displays a small opening at the back, which reveals a little skin for a sexy touch, a lace closure for easy adjustment and hooks to support the neck collar **(Figure 25)**.



Figure 25: High collar gown adorned by the Ghanaian bride

Source: <http://www.fashionghana.com/site/all-the-wedding-gown-styles>

A Trumpet-style wedding dress is worn by Ghanaian brides who want to show their shape. It is best for brides with wide shoulders. These gowns suit curvy brides who are looking for a form-fitting dress that is slightly easier to move in (**Figure 26**). Ghanaian brides who are not comfortable with showing off their shape or have an apple or boxy body type normally avoid these types of gowns. It hugs the body in all the right places and gradually flares outward. The key difference between mermaid and trumpet wedding gowns is where the flare begins, which, in the case of the trumpet style, is mid-thigh.



Figure 26: Trumpet gown adorned by a Ghanaian bride

Source: <http://www.fashionghana.com/site/all-the-wedding-gown-styles>

In recent times, the new batch of Ghanaian brides is changing the way they dress up for their weddings, putting a lot of attention, effort, and money into their bridal gown. Brides can change up to three times during the wedding, and each change has its own significance, and the colours, designs, and styles are carefully picked out.

Ghanaian brides now feature both traditional and modern forms of bridal gowns in designing their dress (**Figures 27 and 28**). Most try to incorporate some Ankara into the white wedding dresses and tuxedos with accents of Kente (**Figures 29 and 30**). It is not unusual for both the bride and the groom to wear the same or similar shades of the chosen colours. Adorned with expensive beads and jewellery. Simple wedding dresses are done in a mermaid style, and if not fully, mostly feature Kente. Those who want personalised designs still have an array of global styles to choose from, which they incorporate with their traditional wedding dresses to make something unique. Following the traditional wedding dress style, they add to it with designs that suit their personality. Recently, modern brides have gone for a less conservative wedding dress with lace.



Figure 27: Traditional modern forms of gown
Source: <https://weddors.com/ghanaian>



Figure 28: Ghanaian modern forms of gown
Source: <https://weddors.com/ghanaian>

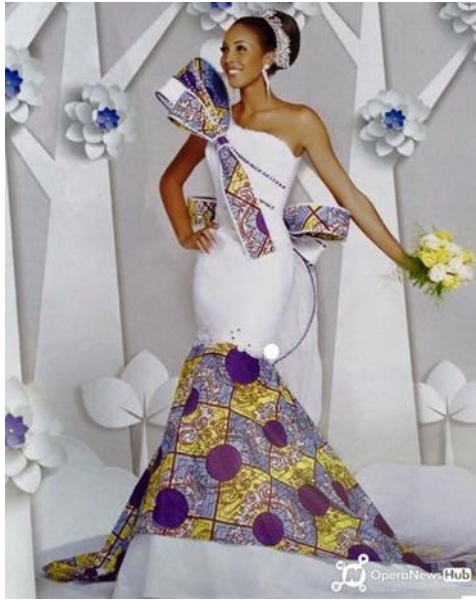


Figure 29: White gown with Ankara accents
Source: clipkulture.com/beautiful-ghanaian-bride



Figure 30: White wedding dresses with Kente accents
Source: pinterest.com/pin/

The different styles of bridal gowns are made to embody the figure of the Ghanaian woman; thus, there is a lot to choose from for plus-size wedding dresses for the Ghanaian woman. The fluidity of the Ghanaian wedding dress fabric makes the voluptuous Ghanaian bride a sight to behold (Alarbi, 2020). While the bride is the main view, the wedding dresses for girls are made to match the bride's.

2.5 Marriage Culture In Ghana

As marriage is a global event that happens in most civilizations across the world, as evidenced by the huge volume of literature on the subject written by researchers from all walks of life, marriage is seen as a specific ritual, a rite of passage that traditionally marks a person's shift from one stage of life to another and redefines social and personal identity (Nelson & Otnes et al., 2005).

According to Acheampong (2010), marriage is moulded by cultural norms and practices that tend to impact people's attitudes toward it as a cultural and social institution. Nukunya (2003) affirmed that marriage is the recognised traditional and religious institution for the formation and sustenance of family life all across the world. Following these perspectives on marriage, it is determined that marriage is a social, cultural, and religious institution defined by rules and behaviours.

However, like with other customary practices, these rules of behaviour are extremely culturally distinctive. Marriage is an essential social institution for any person at any stage in their history because it is the gateway to procreation and the family (Kyerematen, 1967). Marriage in Ghana is defined as a union between a man and a woman, with the consent of both the bride and the groom.

In Ghana, marriage is constructed according to the customs of the ethnic group in which the couple live. Usually, this includes a religious ceremony and a civic registration ceremony commonly known as a wedding. The purpose of marriage in Ghana is to provide companionship for the couple, the

means to offer support for each other, and a legitimate avenue for sexual satisfaction and reproduction. Marriage is usually a group affair which involves not only the immediate relatives of the couple but also more distant kinfolk. In selecting and accepting a potential spouse in Ghana, certain important conditions have to be met. Members of each family are screened for incurable or contagious diseases, criminal backgrounds, violent behaviour, respectfulness, employment status or standard of living and religious background (Ardayfio-Schandorf, 1995; Forkuor, Kanwetuu, Ganee, & Ndemole, 2018).

In the Ghanaian cultural setting, customary law marriages, consensual unions, marriages contracted under Islamic rules, and those contracted under the ordinance (civil or church) are all recognised as legal (Awedoba, 2006). Of these four types of marriages in Ghana, marriage under customary or traditional law accounts for most marriage contracts in the country. The customary marriage forms the basis of all three types of marriages in Ghana. Inquiries are made by both families to ensure the family of the prospective son-in-law or daughter-in-law is inspected. Usually, violent behaviour, immorality, witchcraft, insurability or contagious diseases, and insanity in a family are not approved (Awedoba, 2006).

Marriage is a very important stage in the life of the Ghanaian. There are different ways of choosing partners. In some communities, parents choose partners for their children. When a father feels that his son is ready for marriage, he finds a suitable wife for him. In the past, most parents betrothed their daughters before they were old enough to marry (Bawa, 2015). Nowadays, parents who choose partners for their children seek the children's consent first. In some cases, too, the young people make their own choice and inform their parents. It is the customary practice for a man to seek the hand of a woman in marriage. In most communities, it is taboo for a woman to propose love and marriage to a man.

The customary rites or marriage ceremony, as practised by the women's ethnic group, are performed by the man's head of family, by the father, uncle or any member of the family who is recognised by the community as honourable. Presentation and acceptance of drinks and gifts known as dowry bride wealth signifies the consent of family members to the marriage (Oheneba-Sakyi *et al.*, 1992; Ardayfio-Schandorf, 1995). It is also a sign or a token of support for the marriage and is used to compensate the parents for the loss of the services of their daughter. The dowry or the bride wealth does not represent the price at which the woman has been sold to the man.

Customary marriages differ among societies in Ghana. Despite the differences, drinks and cash are widely used. Although cash is involved in the northern part of Ghana, drinks and kola are also used. One characteristic of customary marriage is that it allows polygamy, which allows the man to marry more than one woman. In Ghana during the late 1970s, about one-third of all currently married women were in polygynous unions (Gage & Njogu, 1994). By the late 1990s, the proportion of women in plural marriages had declined to about 23 per cent.

In all communities in Ghana, there is the custom of giving gifts to the bride's family, especially the mother (Bawa, 2015). There is also a presentation of drinks and an amount of money, but the money involved differs from community to community. The gift to the bride's family by the bridegroom

shows his gratitude for allowing their daughter to be part of his (the bridegroom's) family. The customary drink, "ti-nsa" (head wine) of the Akan, which is presented by the bridegroom, seals the marriage. When there is a divorce, an arbitration decides whether the bride-wealth paid by the bridegroom should be returned to him or not (Awedoba, 2006; Bawa, 2015).

With marriage among the Ewe, when a man is ready to marry, a pot palm wine is sent to the girls' father. This is done by the man's paternal and maternal aunts to inform the girls' parents of their intentions. The first presentation of drink is known as "vofofu" (knocking ceremony). After the girl's parents have been informed in this way, the messengers will come after a week or two for the answer. The period allows them time to consider their request and to make enquiries about the man and his family. When the girls' parents are satisfied with the man's conduct and background, they allow them to perform the necessary marriage rites. Among some Ewe communities, when the girl's parents give their consent, the boy's parents send a pot of palm wine to the family head to thank them. This is known as "akpedaha" (Thanksgiving drink). In the past, after the "akpedaha", the man helped his in-laws on their farms, mended their roofs, and cut firewood for them. This practice is also known as "sagolabla" (service to your in-laws). Among the Anlo, when the girl's parents agree to the marriage, the bridegroom pays a "volanu" (knocking fee). This consists of two bottles of local or imported gin. A date is then fixed for the marriage ceremony.

On the appointment day, they all assemble in the girl's family head's house. The man gives them a big pot of palm wine, two bottles of schnapps or local gin and a bundle of tobacco. In addition, he provides a large trunk which contains items of clothing and other things for the wife. When the girl's family inspect and accepts the items, "Sronu tabianu", the bride's wealth is paid to end the ceremony (Dery, 2015). The amount paid differs from community to community. After this, a date is fixed for the wife to join her husband. On her arrival, she is warmly received by the bridegroom's father. Here, the couple are advised again to live peacefully. After this, the family head pours libation, asking for a successful marriage.

The marriage ceremonies among most ethnic groups in the Northern and Upper Regions of Ghana seem to be the same (Forkuor *et al.*, 2018). When a man wants a wife, he starts giving the girl gifts. The gifts are usually in the form of money, handkerchiefs, towels, etc. If she accepts the gifts, then they become lovers. Occasionally, the man presents gifts to the girl's family, especially to the mother. The gifts usually differ from community to community. They can be yams, meat, cola, tobacco, drinks and sometimes money. Sometimes, items like leather bags, calabashes, and combs are given. These gifts could be given out on behalf of the man by a relative. The presentation of the gifts is to make the girl's family recognise the man as a would-be son-in-law (Forkuor *et al.*, 2018).

Among the Gonja, the man can provide the girl with yams from his farm and meat from his traps while they are still lovers (Dery, 2015). When the man is ready to perform the marriage rites, he informs the girl's parents, and a day is fixed for the ceremony. On that day, the man's father sends the bride price (Dery, 2015). In some communities, kola nuts and money would be sent to the girl's parents. She is then called and asked three times whether she likes to marry the man. If she agrees,

the kola nuts are distributed among those present. Each of them takes a bite to show their approval. The money is shared among members of the girl's family. The sharing of the money indicates that they are all witnesses to the marriage ceremony. Among some communities, such as the Frafra, Mamprusi, Dagomba, and Kusasi, the bridegroom pays a bride price with cows. The number of cows is determined by the community (Kyoore, 2010; Dery, 2015). The man has to give that number before the girl becomes the "proper" wife (Korah, 2014; Kyoore, 2010).

Evidence from small-scale surveys conducted throughout the country indicates that most marriages in Ghana are of the traditional type (Awusabo-Asare 1990; Oheneba-Sakyi *et al.* 1992; Ardayfio-Schandorf, 1995). A study by Bawa (2015) showed that, although the number of marriages performed under traditional law is declining, they still account for the bulk of all marriages in Ghana. In part, customary law marriages are popular because they are based on traditional norms and beliefs and are often less expensive to contract. Also, unlike marriage under the law, traditional marriage does not have to be monogamous. As a marriage form, the incidence of polygyny varies from somewhere between 20 and 50 per cent in the whole of sub-Saharan Africa (Timaues & Reynar, 1998).

2.5.1 Traditional Akan Marriage System

The marriage culture of Ghanaians, specifically the 'Akans', represents the ethnographic field of the study. Akans are the largest ethnic group in Ghana (Agyekum, 2006). Akan belongs to the Kwa subgroup of the Niger-Congo language family, spoken in West Africa. It is spoken mainly in the Southern part of Ghana and also in the Central and Eastern parts of Côte d'Ivoire. Out of the ten regions in Ghana, Akan is spoken as a native language in six of them, including Ashanti, Eastern, Western, Central, Brong Ahafo and Volta regions. From the Ghana national population census conducted in 2021, about 47.5% of the Ghanaian population is Akans, while 44% speak the language as non-native speakers. As noted by Agyekum (2006), the Akan language consists of many dialects which are mutually intelligible; they are Akuapem, Akwamu, Asante, Akyem, Fante, Kwahu, Bono, Agona, Assin, Denkyira, Twifo, Wassaw and Buem. **Figure 31** below gives a highlight of the Asante Kingdom.

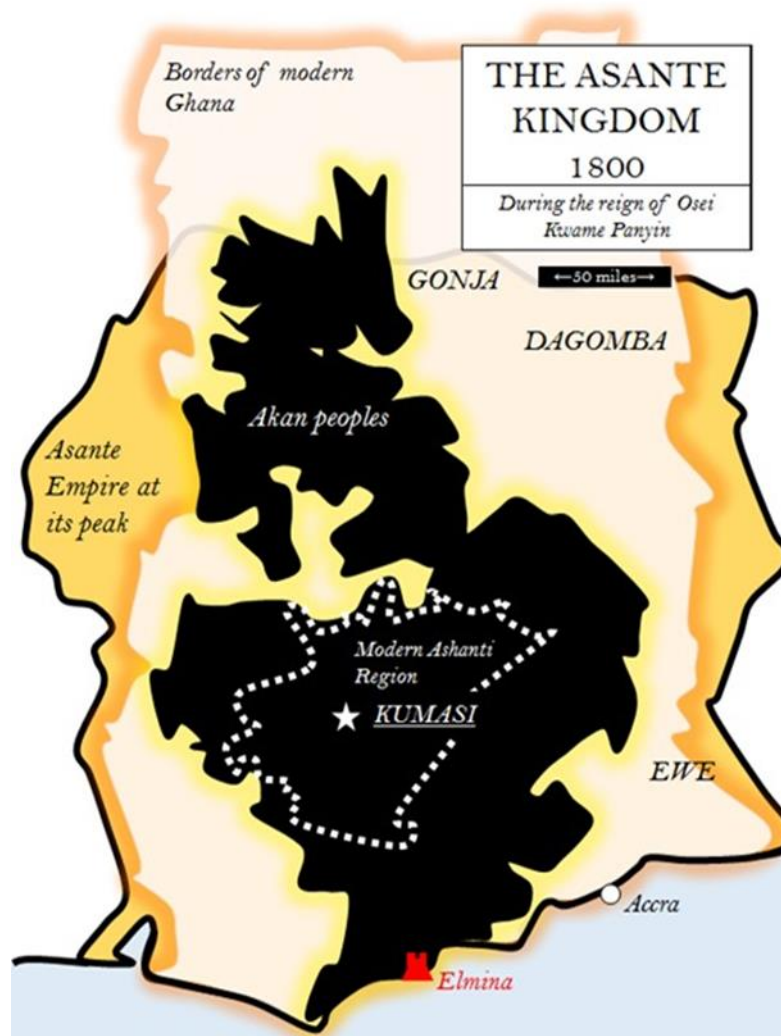


Figure 31: Highlight of the Ashanti Empire

Source: (The Rise of the Asante Empire (1680-1750) – Seventh Coalition: History)

The Akans have various traditional and customary practices which make them unique from other ethnic groups in Ghana. One important aspect of such practices is the customary marriage, which is one of the most cherished and celebrated rites of passage in the culture of the Akans. It is the institutionalisation of a complementary relationship between a male and a female. Marriage among the Akans is a union between the two families involved.

According to Agyekum (2012), marriage in the Akan is not only the concern of the man and the woman contracting it but also of their kinfolk. This means that although marriage as an institution happens between a man and a woman, the families as well as the community play an influential role in its establishment and sustenance. Its effects on the lineage (*Abusua*) of each partner are far-reaching, and so every marriage, to be lawful, should receive the sanction and approval of the lineage-head (*Abusuapanyin*) of both the man's and the woman's lineages. The part played by parents, too, is active and decisive. It is they who are ultimately responsible for the guidance of their children in choosing a suitable life partner wisely.

Before the Whiteman came, the father's specific duty to his son was to train him from childhood to adolescence, marry a wife for him (*Oware man no*) and buy him a gun before the young man was thrown into the stream of life. If a son, as a result of his father's failure or neglect to marry a wife for him, committed adultery, the father was held responsible for the payment of the adultery fine (*Ayefare*) (Agyekum, 2012). A mother, in like manner, trained her daughter in housecraft and eagerly looked forward to the day when she would marry properly to a desirable man. Before marriage, parents always take into consideration the lineage (*Abusua*) of the prospective families and the personal character of the girl and the boy.

A boy who wishes to marry first discusses the intentions with the girl concerned. He has to make sure the girl will agree to marry him before he informs his parents. Finding out through secret meetings if they will marry each other is known as "Kasasie". The man then tells his mother or an elderly person about his intentions. His mother or the elderly person will, in turn, inform his father (Acheampong, 2010; Agyekum, 2012). If the mother feels that the marriage will not be possible for some reason, she will discourage him. When the father agrees, an investigation will immediately start into the girl's conduct and family background. When the man's parents are satisfied, the father, through delegation, informs the girl's parents about his son's intention (Acheampong, 2010). This information is known as "abowmu bodze" or "opon-aky bo" (Knocking ceremony). The announcement is made with a pot of palm wine or a bottle of schnapps. Some amount of money is added to the drink. The amount paid differs from community to community. The man may add some extra money to whatever customs demands. This is usually to impress his in-laws that he can really look after their daughter.

In some communities, this money is regarded as a "token gift" for the girl's mother (Nelson & Agyekum, 2012). The girl's parents ask them to go back and come later for an answer. This enables them to find out if their daughter agrees to the marriage. They also investigate the boy's conduct and family background (Agyekum, 2012). When they are satisfied, word is sent to the man's family to come forward. It is the custom for a father to pay for the marriage expenses of a son. But these days, most young men give the money to their fathers for the marriage rites. The father sends a message to the girls' parents to inform them of the date for the rites. Both parents inform their maternal relatives to send their representative to the ceremony.

On the appointed date, the man's father sends a delegation to perform the rites. The important part of the ceremony is the offering of drinks known as "tiri nsa" (head drinks). In the past, it was palm wine, but now it is schnapps. The "tiri nsa" traditionally seals the marriage. Some amount of money is added to the schnapp. The amount of money given differs from community to community in the Akan settings. There is also a customary fee charged to be given to the girl's mother (Agyekum, 2012). Her brothers, too, are given some money known as "akontagye sekna". Before the payment of the customary drinks and the fee, the girl is formally called before the gathering to give her final consent to the marriage. After accepting everything, the girl's family head pours libation, asking for protection and blessings for the new couple. He also prays that the marriage should be blessed with children. The rest of the drinks are shared among all the people present to signify that they are all

witnesses to the marriage. Places of advice are then given to the couple. The man can then fix a day to take his wife home (Agyekum, 2012).

An important rite which can be performed on the same day or at any time in their married life. It is an amount of money which is known as “ti-aseda” or “ti-ade” paid to the girl's family (Nukunya, 2003; Acheampong, 2010). This is what might be termed “bride price”. Nowadays, “ti-aseda” is usually used to show the man’s appreciation to the girl’s family for giving their daughter away. In the past, the girl’s family used this amount to pay any debt in the family. They believed that using that money to pay such family debt would give her the peace of mind to enjoy her married life. Where there was no such debt, it was used to buy some property, e.g. land or a farm for her and her future children. If there was a divorce, the husband could claim the “ti-aseda” or “ti-ade” from the wife's family. A day is fixed for taking the bride away to her husband. The bridegroom sends a pot of palm wine or a bottle of schnapps to the bride's father for permission to take away his wife. The head of the family pours libation with it and blesses the couple again (Nukunya, 2003).

Nowadays, most of the customs connected with traditional marriages are disappearing. Formal education, Christianity, Islam, and other religions have influenced the marriage ceremony. For instance, most parents no longer wait for the husband to provide a trunk full of the wife’s clothing before they allow her to join her husband.

Another change is that since most young people now work outside their hometowns and villages, the bride is not sent to the bridegroom’s house by her aunts or relatives. Instead, the man arranges for his wife to join him at his place or area of settlement. Some Christians and other religious groups, as well as some educated people, after the customary wedding rites, also have a bible and a ring to add to the items presented to a Christian or educated woman at the “knocking” or the engagement ceremony.

2.6 Colour Symbolism In Bridal Gowns

Colour is widely utilised, yet its meanings and symbolism differ throughout countries around the globe. The type of impression the designer intends to make and the occasion for which a fabric or style might be employed are both influenced by colour. These reactions may be seen at a variety of events and festivities. People's emotional and physical reactions can both be influenced by colour. Colours are identified based on familiar and shared knowledge of the world. According to Ameunke et al. (1993, p.183), colour is related to the colour of natural objects, which has its own meanings, symbols, and functions.

The value of colour and its applications in textile and fashion became apparent following the discovery of synthetic dyestuffs in 1856, which improved the colouration of textiles utilised by fashion designers. Within the fashion business, the aesthetic of colour is the first thing that draws a consumer's attention to a product before evaluating patterns, styles, and other features such as drape, texture, and comfort. This is vividly underscored by Marjory's (1980, p.261) assertion that "the importance of colour in textile goods cannot be overstressed." Colour attraction is global, and there is a greater concern with picking the "just right" colour than with other criteria.

Colour forms one of the vital ingredients in the choice and selection of a particular wedding dress. Within the traditional setting, colours play a significant role in the beliefs and success of any wedding ceremony. White colour has become a prevalent option for wedding ceremonies across the globe, with a whole industry dedicated to manufacturing and selling these dresses for those who want something special on their big day. Some of the most iconic wedding dresses in history have been white, and the white wedding dress trend that was popularised by Queen Victoria continues to this day (Bridal Studios, 2014).

Recent brides who have worn white on their wedding day have included Princess Diana during her wedding to Prince Charles in the 1980s, and more recently, Kate Middleton, who married Prince William in 2011. The first documented instance of a princess who wore a white wedding dress for a royal wedding ceremony is that of Phillipa of England, who wore a tunic with a cloak in white silk bordered with squirrel and ermine in 1406, when she married Eric of Pomerania (Bridal Studios, 2014).

Also, a white wedding gown was worn by Anne of Brittany when she married Louis XII in 1499 (Amalfi Wedding Planner, 2021). Mary, Queen of Scots, wore a white wedding dress in 1559 when she married her first husband, Francis, the Dauphin of France, because it was her favourite colour, although white was then the colour of mourning for French Queens. This was not a widespread trend, however: before the Victorian era, a bride was married in any colour, black being especially popular in Scandinavia (Zoi & Maria, 2014)

As already mentioned, white became a popular option in 1840, after the marriage of Queen Victoria to Albert of Saxe-Coburg (Schoeny, 2020), when Victoria wore a white gown trimmed with Honiton lace. Illustrations of the wedding were widely published, and many brides opted for white in accordance with the Queen's choice (Schoeny, 2020). Wearing white was quickly adopted by wealthy, fashionable brides. Godey's *Lady's Book* (1849) states that white wedding gowns were an ancient custom reflecting a bride's virginity, writing:

Custom has decided, from the earliest ages, that white is the most fitting hue, whatever may be the material. It is an emblem of the purity and innocence of girlhood, and the unsullied heart she now yields to the chosen one (p. 13).

Originally, the wedding gown was blue, which was connected to purity, piety, faithfulness, and the Virgin Mary (Ashliman, 2004). However, many people at the time believed that white was meant to symbolise virginity, and the white wedding dress became the standard symbol for innocence and romance. Couples who put on blue believed that their male partners would always be loyal to them. Therefore, if their wedding attire is not blue, they would make sure to feature something blue in their outlook, which still exists today (Corbis, 2010).

Another dominant colour was pink, which was considered appropriate for weddings. It matches a lot of colours and symbolises girlhood. However, other cultures believe that the colour pink is associated with bad luck: "get married in pink and your future ruins" (Wikimedia Foundation, 2016).

The wedding dress put on by the bride symbolises the basic or princely perfection. When a woman expresses the desire to feel like a princess on her wedding day, she wishes to acquire the enchanting beauty of a princess or a goddess. When she feels that way, she is in a special and superior spiritual state, which leads to a transformation; her wedding dress is not just an artefact that contributes to the "perfect" look, but it is an amulet that helps this transformation (Paul, 2000).

Many women reveal today that they are almost ashamed because they succumb to the standard model, and in reality, they do not want to wear a traditional white wedding dress. With this statement, they reveal a latent internal conflict related to the connotations of the white colour as a symbol of virginity, as most of them are no longer virgins when they get married. Especially feminists feel that there is a conflict between tradition and their feminist beliefs (McBride-Mellinger, 1993). Nevertheless, there is a strong desire for a white wedding dress as it constitutes the archetypal symbol of marriage.

Historically, the white bridal dress symbolises the end of an individual woman's life and the beginning of her role as a dependent spouse. Nowadays, it does not mark the death of individuality but of singlehood and points to the start of a mature partnership. The bridal dress is a deep archetypal way of identifying the breakaway from the bride's previous life. Even the white gown might symbolise the innocence of childhood and the irresponsibility and carelessness that a woman relinquishes during her wedding day (Paul, 2000).

Leeds-Hurwitz, a Professor Emerita from the University of Wisconsin-Parkside, specialised in language and social interaction, says in *Wedding as text: Communicating cultural identities through ritual* (2002) that the wedding dress can be read as any other symbolic text. The whiteness of the dress still intends to symbolise the bride's purity, innocence and virginity. Its length represents her modesty and formality, and the elegant fabric from which it is made (usually decorated with lace and pearls) symbolises expense (p.106).

Despite recent cultural and social changes regarding gender roles, wedding gowns are probably among the most expensive and elaborate pieces of clothing any woman will ever wear because of the desire to distinguish the wedding dress from other daily garments. But this effect works both ways, as she desires to be unique and special, which encourages her to follow conventional norms by displaying traditional symbols rather than her own identity (Leeds-Hurwitz, 2002, p. 112).

However, many of the symbolic elements of the white dress no longer seem appropriate outside of the wedding context and do not even correspond with the images of women presented by the media. Currently, the embodied white dress symbolises a tension between tradition and innovation, becoming vague and even conflicting by constantly overlapping new meanings with old connotations. This ambiguity, present in the dresses transformed for this project, is the cause and consequence of the multiple meanings that a symbol can convey today, informed mostly by references to past events or in connection to another symbolic code (Leeds-Hurwitz, 2002, p. 186). The meanings of a wedding gown are constantly given by the different cultural groups in which it is not only exhibited but worn, and by the embodied experiences of the women wearing it (Crane, 2000, p. 243). As a symbol, it has acquired the ability to convey multiple meanings.

Choosing a wedding gown is one of the most difficult decisions a bride will have to make, and it should be undertaken with enthusiasm and excitement (Leeds-Hurwitz, 2002, p. 173). The bride may try on one or two gowns and immediately know which one she wants, or she may need to try on several. After the style of the gown has been decided, it is time to think about colours. The bride must select a colour that complements the style of her wedding. Bridal gown colour reflects how the bride feels as well as how a colour might make the bride feel (Crane, 2000, p. 245).

According to Leeds-Hurwitz (2002), for many years, white or ivory wedding gowns were the most preferred gowns. In recent years, some couples have gotten a little more daring, with other colours (i.e., gold, blue, brown, black, red, purple and many others) brazenly embraced for wedding gowns. We may claim that at some point in time, these coloured wedding gowns were affected by other civilisations that do not utilise white or ivory, or it might be due to a fashion trend. And, for each of these colours, there is a message that the couple, or more specifically, the bride, is attempting to express to those in attendance.

2.7 Bridal Gown Design and Fabrics

Characteristically, there have not been many changes in the design philosophy and general silhouettes of wedding gowns from the 14th century to the present day, as designs always denote happiness, glamour, royalty, fabulous and flamboyant. These design attributes come with an extravagant cost financially and to the environment, as translating such design attributes into bridal gowns requires more materials than daily wear. But regrettably, most women prematurely end the life span of these gowns as soon as their wedding ceremony is over (Kwon, 2017).

Schaefer & Navarro (2016) Argues that there must be a change in the design and development of bridal gowns from the “traditional” design thinking approaches to more innovative non-traditional design approaches that have the potential to extend the life span of bridal gowns and increase their value for consumers. Bakker et al. (2014) and Moreno et al. (2014) emphasise that the “multi-purpose concept of a design” can play a key role in the migration of CL and the textiles industry into the circular economy. However, the dynamic nature of the contemporary Fashion and Textiles Industry inevitably motivated the growing interest of fast fashion consumption that somewhat projected the industry as the second most notorious in environmental pollution, to the oil industry (Greenmatch, 2018).

Fletcher (2007) unequivocally stated that the very nature of fast fashion, as the name suggests, makes consumers purchase more clothes than necessary at a given time and recklessly dispose of them in no time. This behaviour undoubtedly cut short the life span of CL, and the daring consequences are what bedevil present society in resource consumption and environmental pollution. It is estimated that a minimal percentage between 6-38% of CL in the wardrobe of many is actively worn despite the overwhelming stock of CL in the wardrobe of many (Dunne, Zhang, & Terveen, 2012; Fletcher, 2008; Hawley, 2008; Woodward, 2007).

In a similar narration, Wrap (2018), as cited in the study of James et al. (2019), stated that an estimated thirty billion euros (£30) value of CL is said to be relegated to the back of many consumers' wardrobes. In other words, they remain unused, and the BG is caught in this scenario. Because the

BG undoubtedly is one of the commonest CL items that is often disposed of prematurely or becomes a white elephant in the wardrobe of many as soon as wedding ceremonies are over, this means that it has become a one-time wearing attire, regardless of the time, money and other resources (Schaefer & Navarro, 2016). Within the CL life circle, unused CL is often considered to be the highest impact face in environmental pollution (Fletcher & Grose, 2012; Gwilt & Rissanen, 2011) and Frantic effort by Stella McCartney, Patagonia, Nike, Levi's, Timberland among others in the fashion industry to curb this canker prove unfertile (Black 2012; Fletcher and Grose 2012).

Undeniably, BG is an essential commodity during marriage ceremonies. But the alarming rate of premature disposal calls for concern. According to (Kwon, 2017) ***“The environmental impact of wedding dresses has largely been overshadowed by the sacred power and ostentation of the wedding dress”*** (p.596)

Lamenting on the daunting image of the BG industry regarding this premature disposable behaviour that is resulting in resource consumption and environmental pollution, (Design, 2019) argues that consumer demands should be geared towards more meaningful CL consumption models as a means of reducing this environmental canker. Invariably, this implies that the number of times a garment is worn must be increased, and the BG is not an exception. Increasing the frequency of utilising CL items inevitably extends its life span. A multi-purpose concept of design has been identified as one of the key strategies when designing for circularity in the contemporary fashion industry (Cunha, 2009).

Subsequently, Kwon (2017) Added that the BG industry is considered one of the sectors within the CL industry that consumes resources and contributes waste to the detriment of the environment in terms of usage. Because the flamboyant characteristics of BGs called for more fabric in the production if compared to everyday wear.

It is against this background that Black (2008) argues that CL designers are in a better position to change this frequent CL redundancy to improve SUST in fashion. They explicitly explained that designers are mostly engaged in the garment development process and therefore have the potential to initiate practical, innovative conceptual models and other design thinking techniques and strategies in the development process to promote the life span of clothing.

Earley et al., (2017) challenges the traditional role of CL designers as sole drivers of consumer values and needs through design. Rather, CL designers should involve (co-design) and provide aesthetic experience and guidance to wearers of clothes to translate their self-concept into reality. However, it has been established that most of the existing conceptual models for fashion designers are more theoretical and do not consider consumer involvement vis-à-vis their value and needs as a sustainable design approach (A. Kozłowski et al., 2018). Rather, most of the models, in particular Jin Gam et al. (2009), Textile Environment Design (2006) and Aakko et al., (2013) primarily focused on sustainable improvement of the industry supply chain, ecoefficiency and sufficiency, production processes with little discussion of consumption behaviours, use and disposal. Current conceptual models for fashion designers in the design and development of CL items, of which the BG is not an exception, have not made enough progress (Armstrong et al., 2011).

It is within the above scholarly domain that gives rise to the importance of this study, as it seeks to propose a practical conceptual model for fashion designers in the design and development of sustainable bridal gowns, wherein the involvement (co-design) of the wearer will be a design approach to trigger multiple usages for the extended life (Niinimäki & Koskinen, 2011a). This thesis explores and draws inspiration from Niinimäki & Koskinen (2011) “Framework for sustainable product relationships, empathic knowledge and the field of design”. See figure below: **32** representing a framework for sustainable product relationships, empathic knowledge and the field of design.

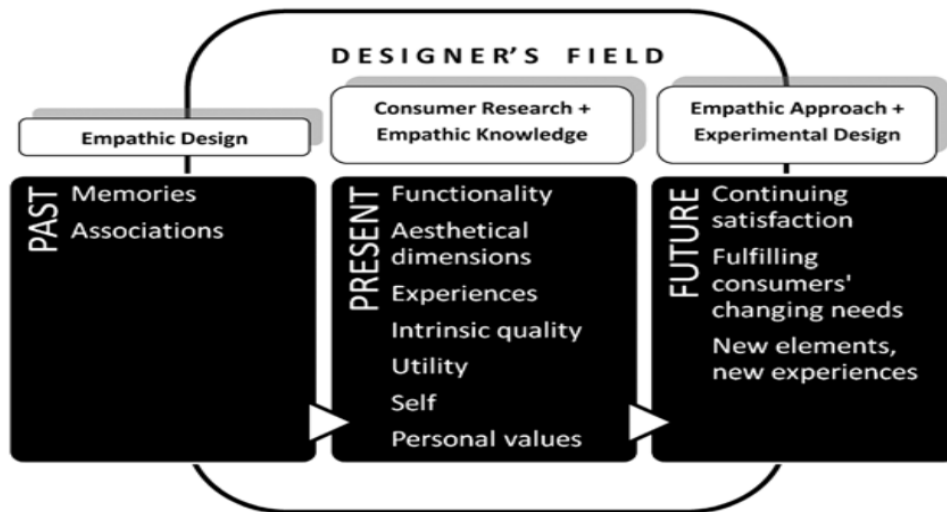


Figure 32: Framework for sustainable product relationships, empathic knowledge and the field of design

source: Kirsi Niinimäki & Koskinen (2011)

The above framework revolves around sustainable product relationships, emotional values in product experiences and attachments, an empathic approach, as well as the designers' role. They highlighted the importance and influence of the intrinsic quality, functionality, and aesthetic values of the product in promoting the extended life of clothing and textiles. They subsequently re-echoed that the construction of self, personal values and emotions, as well as memories of consumers, create product attachments and therefore emphasise the position of fashion designers to implant these attributes in their designs to foster extended life. They concluded that the empathic approach and consumer-centred knowledge foster attachment and continuing satisfaction with products through meaningful experiences over time.

An empathic approach helps the designer to understand more deeply the consumers' needs, values and long-term product relationships. Moreover, empathic knowledge enables the designer to provide deep product satisfaction as well as opportunities for the future (Niinimäki & Koskinen, 2011, p.183).

However, an empathic approach for future product attachment for extended life would be a challenging task for a designer. Because the empathic approach is very theoretical and abstract in nature, for easy interpretation, let alone being translated into a consumer final product.

In this perspective, the position of this study for co-design coupled with the self-concept theory approach, as well as the principles of the facilitation theory approach, to aid consumers to practically translate or mimic the mental picture of their desired BG design that will reflect their intrinsic quality, functionality, as well as aesthetic values, to promote extended life. Consumers usually buy products that are a direct reflection of their self-concept, and peoples knows their mind better. (D'Souza, 2015).

Accordingly, we believe that consumers who are seeking self-enhancement would extrinsically express their overall sense of self via their decisions and behaviours; therefore, understanding the role of the self-concept in shaping behavioural intentions towards slow fashion is essential (Legere & Kang, 2020, p.3).

Durani et al., (2016) reiterated that consumer involvement (co-design) at the design stage elevates garment appeal and allows users to bond with garments that are one of a kind, satisfying. But one may argue that some design ideas may be complicated in the minds of 'non-professional' consumers to translate into reality; of course, it may be difficult. But that notwithstanding, Duschinsky (2012) argues that no human being is born with built-in mental content and that human knowledge comes from experience and perception

According to Armstrong et al. (2016) the way forward in achieving a more sustainable apparel industry is to consider co-design through the wearer. Despite the purchasing power that consumers possess, they still have more to offer, which the CL industry should not overlook in the fight against resource consumption and sustainability (McDonough & Braungart, 2010). Currently, as it stands, all our CL, including BGs, are designed without any recourse for wearers to participate or contribute in any way in the designing process; you have to pick from the masses of clothes according to your size and the prevailing fashion trend (Milburn, 2017). And the consequences of this approach are emotional disconnection, resulting in the premature disposal of CL at an estimated value of One Hundred and Fourty Million Euros worth of CL going to landfill each year (James et al., 2019).

A. Kozlowski et al. (2018) emphasise that the contemporary CL and textiles industry should reconsider incorporating the needs and values of the wearers of clothes through co-design to reflect their self-concept and not design based on emerging trends, which results in resource consumption and premature disposal of clothing items, of which the BG is no exception.

2.8 Sustainability Challenges in the Bridalwear Industry

The fashion industry continues to generate substantial waste, and the bridal sector is no exception, despite its cultural prestige and economic significance. Contemporary research demonstrates that the bridalwear market, though deeply rooted in emotional symbolism and ceremonial value, is structurally unsustainable, as gowns are typically produced for single use, stored indefinitely, or ultimately discarded (Riedl & Raffetseder, 2025). These practices reflect broader patterns of overconsumption and inefficient resource use that pervade the broader fashion system (McNeill & Zaichkowsky, 2025). The issue is particularly salient in the Ghanaian context, where the white

wedding gown has rapidly become a dominant cultural symbol, yet its limited functionality and high replacement rate render it environmentally and economically redundant.

A key source of waste within the bridalwear industry arises from gowns that become obsolete due to changing trends, storage challenges, or poor durability (Suhartini et al., 2019). Although many brides retain their dresses for sentimental reasons, the lack of functional versatility restricts opportunities for reuse, thereby perpetuating cycles of waste and limiting long-term economic value for users (Riedl & Raffetseder, 2025).

Sustainable bridal design, therefore, requires a shift towards systemic and circular approaches. Circular fashion frameworks emphasise innovation across materials, production methods, and user practices to minimise waste and extend garment lifespans (Coscieme et al., 2022). While environmentally preferred fibres such as organic, recycled, or naturally dyed textiles form an important foundation, material substitution alone cannot resolve broader sustainability challenges. Instead, effective solutions must integrate production efficiency, user engagement through user-centred design (UCD), and post-consumer strategies, in line with circularity principles adopted across the wider fashion sector (Coscieme et al., 2022).

Recent discourse highlights modularity as a promising strategy for addressing redundancy in bridalwear. Modular and multi-use wedding gowns enable components to be reconfigured for diverse occasions, enhancing emotional durability and extending garment lifecycles (Kuleli & Bahadır Ünal, 2018; Phan & Ghalachyan, 2025). Such approaches respond to growing demand for adaptable garments that align with cultural expectations while advancing sustainability goals. However, they also place greater creative responsibility on designers, who must carefully balance aesthetic appeal, wearability, and opportunities for user expression (Phan, 2025).

Consumer behaviour similarly plays a critical role in shaping sustainability outcomes. The increasing interest in second-hand bridalwear, rental services, and collaborative consumption models reflects a shift towards practices that mitigate overproduction and reduce material waste (Thomas et al., 2025). These alternatives are particularly relevant in contexts where single-wear bridal garments contribute disproportionately to waste, as is the case with white wedding gowns in Ghana. Research further demonstrates that extending garment life through reuse, redesign, or alteration yields significantly greater environmental benefits than recycling alone (McNeill & Zaichkowsky, 2025).

Within this landscape, designers play an essential role in fostering emotional attachment, functional adaptability, and prolonged use. Approaches that strengthen emotional engagement, such as user-centred design (UCD) and opportunities for wearer personalisation, can enhance consumer product relationships and reduce disposal tendencies (Niinimäki & Koskinen, 2011b). Taken together, the sustainability challenges evident within contemporary bridalwear highlight the limitations of single-use garment models and underscore the urgency of rethinking bridal design beyond material selection alone. In the Ghanaian context, where the white wedding gown has become culturally normalised despite its environmental and economic inefficiencies, these challenges are particularly pronounced. This section, therefore, establishes the need for alternative design strategies that prioritise longevity, adaptability, and user engagement. This conceptual grounding provides the

foundation for exploring multi-purpose design approaches, specifically kente wrapping techniques, as culturally embedded, user-centred solutions capable of addressing bridalwear redundancy while supporting circular and sustainable fashion practices.

2.9 Kente Wrapping Technique in Ghanaian Bridalwear

The resurgence of African fashion within global contemporary fashion networks demonstrates how indigenous dress traditions are being reinterpreted as creative, culturally rooted, and sustainable (Rovine, 2015). This trend calls for a renewed examination of indigenous African fashion practices, particularly kente wrapping techniques, as sustainable design strategies central to discussions of sustainable fashion in Ghana. Figure 33 showing Ghanaian Ashanti Queen mothers in Kente Wrapping



Figure 33: Kente wrap-inspired

Source: Cool African (2021)

The kente wrapping technique is unique as a sustainable design strategy because it avoids cutting and sewing, offering an alternative to addressing the redundancy of the “white bridal gown” within the Ghanaian marriage culture. White wedding gowns, often influenced by Euro-American bridal aesthetics, require designers to cut and discard multiple fabric pieces to construct complex silhouettes. This process generates significant textile waste and limits the garment’s lifespan, as fitted gowns cannot be reconfigured into other garments without substantial alteration (Kwon, 2017). In

contrast, the kente wrapping technique preserves the fabric in its original, uncut form, maintaining its wholeness and material integrity. As Adeloje et al. (2023) argue, safeguarding African craft practices offers a path toward environmental conservation through reduced material waste and an emphasis on long-lasting, artisanal production. In relation to bridal design, the wrapping technique becomes more than an aesthetic choice; it represents an eco-ethical commitment grounded in traditional craftsmanship.

Furthermore, wrapping aligns with broader African sartorial practices, where cloth is often tied, draped, or layered without alteration. For example, Imbuwa & Celikkol (2024) demonstrate how contemporary Zambian women employ chitenge through wrapping methods that allow economic efficiency and social expression without cutting the fabric. Their findings parallel the adaptable and multi-purpose role of the kente wrapping technique, suggesting a wider African design logic rooted in preservation, reusability, and cultural identity formation.

Similarly, Vilarinho (2019, p.64) in her study *“Capulana in a D4S Perspective: Identity, Tradition and Fashion-able Challenges in the 21st Century,”* argues that African printed cloths gain value not only from their visual and cultural identity but also from their adaptability as multi-purpose objects. This multi-purpose reinforces the relevance in contemporary design discourse, particularly within slow clothing consumption culture, where adaptability and extended use are key to reducing material waste while preserving cultural heritage (Milburn, 2017).

In a bridal context, the wrapping technique enables a bride to wear a full-length ceremonial gown constructed entirely through strategic drapery, folds, and knots. After the wedding, the same uncut cloth can be partially unwrapped and reconfigured into outfits suitable for different social contexts. This reusability stands in direct contrast to wasteful, single-use white gowns (Ibrahim et al., 2024). The increasing prevalence of white wedding gowns in Ghana is often critiqued as a postcolonial imitation. Scholars such as Dogbe (2003) observe that clothing in West African media and cultural performance reflects tensions between traditional identity and globalised aesthetics.

Similarly, Osseo-Asare (2021) traces how dress politics in Ghana have historically intersected with debates about authenticity, nationalism, and Western influence. Imported through missionary and colonial contact, the white wedding gown carries Eurocentric notions of purity, marriage, and femininity that do not fully align with Ghanaian cultural narratives. Its growing dominance in urban and semi-urban weddings has contributed to the marginalisation of traditional African practices (Elank, 2014; Tordzro, 2021, pp.60-65).

The kente wrapping technique exemplifies a design strategy aligned with circular fashion principles, which seek to extend the lifespan of garments and textiles through adaptability and material preservation (Niinimäki, 2018, pp.16-17). Because the fabric remains uncut, it allows full reversibility between garment forms. The technique demonstrates that tradition and modernity need not be antagonistic; they can coexist through the reinterpretation of indigenous practices within contemporary fashion design. **Figure 34** shows a Kente wrap-inspired Dress.



Figure 34: Dress Ghanaian Ashanti Queen mothers in Kente Wrapping

Source: Williams (2012)

Recognising wrapping as a practical method of reclaiming indigenous knowledge situates it at the heart of sustainable fashion discourse in Ghana and contributes to efforts to re-centre African fashion within global design narratives (Rovine, 2016).

The Ghanaian kente wrapping technique offers a compelling alternative to the unsustainable model of the white wedding gown, by preserving the textile’s wholeness, enabling multiple garment transformations, and grounding the bridal aesthetic in indigenous symbolism. The kente wrapping functions as both a sustainable design method and a culturally significant practice. It provides a viable pathway toward a fashion system that is materially responsible, culturally rooted, and intellectually decolonised (Ibrahim et al., 2024; Rovine, 2016).

2.10 Multi-purpose Design Concept

Multi-purpose design offers a conceptual framework closely aligned with sustainable fashion practices. It involves creating garments that serve multiple functions, adapt to various social contexts, and evolve in response to shifting personal and cultural needs. Central to sustainable design thinking, this approach prioritises durability, adaptability, and wearer engagement as key factors in extending garment lifespan (Fletcher & Grose, 2012). In Ghanaian wedding traditions, where the white gown is widely perceived as a symbol of modern marriage, reimagining bridal garments as multi-purpose provides a pathway to counter their entrenched single-use logic. **Figure 37:** development stages of multi-purpose clothing

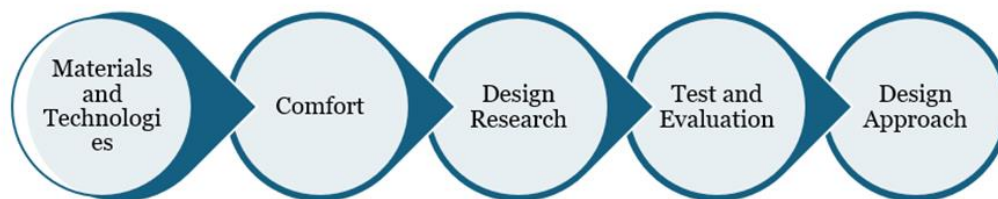


Figure 35: The stage of developing multi-purpose clothing

Source: Author

Empirical and historical research on bridalwear underscores how cultural expectations, symbolism, and emotional significance shape the design, function, and longevity of wedding garments. Wedding gowns function as cultural artefacts that communicate identity, values, and social belonging (Tawfiq & Marcketti, 2017; Ehrman, 2011). In Ghana, these symbolic dimensions increasingly intersect with imperatives for sustainable consumption, creating opportunities for design interventions that preserve cultural meaning while mitigating the environmental consequences associated with single-use bridal attire.

Within Ghanaian marriage culture, wedding gowns are typically worn once and subsequently stored or discarded, generating both economic and environmental concerns. Circular fashion research highlights the potential of upcycling and textile reuse, with studies demonstrating that up to 80% of leftover fabric can be reintegrated into new garments without compromising aesthetic or material quality (Shamsuzzaman et al., 2025). While this figure is drawn from broader circular fashion and upcycling studies rather than bridalwear-specific case studies, it provides a useful indicative benchmark for understanding the scale of material recovery potential within textile reuse practices. Juxtaposed with this evidence, contemporary bridal gowns, often characterised by material excess because of intricate construction and flamboyant detailing, represent a significant source of avoidable textile waste.

These findings suggest that bridalwear in Ghana can be reconceptualised through the adoption of kente wrapping techniques as a sustainable, multi-purpose design strategy. When developed through a user-centred design approach, such techniques can integrate user values, cultural expectations, and practical needs, thereby extending garment lifespan and enhancing post-wedding usability (Kuleli & Bahadir Ünal, 2018). Multi-purpose bridal gowns are thus positioned as both environmentally responsible and economically viable, particularly given the substantial financial investment associated with Ghanaian wedding ceremonies.

From a technical and design perspective, modular and customisable approaches further enhance the feasibility of multi-use bridal gowns. Research on modular product development demonstrates that platform-based modularity and delayed product differentiation enable garments to be reconfigured, personalised, or adapted for multiple occasions (Aus et al., 2021). Figure 38 Transformable Garment



Figure 36: Transformable Garment Offering 38 Garment Pieces

Source: Rahman & Gong (2016)

By integrating zero-waste cutting techniques, detachable components, and repairable structures, traditional single-use gowns can be transformed into versatile garments that accommodate the diverse ceremonial and social requirements of Ghanaian marriage culture (Cunha & Broega, 2009). Consumer behaviour research further supports the adoption of sustainable bridalwear. Empirical studies indicate a growing preference for clothing designed for longevity, adaptability, and circular reuse. While the wedding gown has historically epitomised disposability, the application of modular, repairable, and upcycled design interventions positions it as a particularly promising site for sustainable innovation within the Ghanaian context (Schaefer & Navarro, 2013). Despite extensive discourse on sustainable fashion, research that explicitly addresses user-centred bridal design remains limited, particularly within culturally specific contexts. Existing studies seldom engage deeply with user participation, embodied practices, or the lived realities of bridal consumption in Ghana.

In response, this study advances a user-centred, multi-purpose approach to traditional bridal gown design through the exploration of kente wrapping techniques. By integrating circular design principles, modularity, and active user participation, the research proposes a culturally grounded and practice-led framework for sustainable bridalwear, one that challenges the white wedding gown while foregrounding longevity, adaptability, and cultural continuity within Ghanaian marriage culture.

2.11 Design Thinking Techniques (DTT)

The overconsumption model of fashion has driven designers to mass-produce clothing at an alarming rate, eliminating processes for innovative thinking and human connection that are essential for successful sustainable design (Worbin, 2010). The challenge of shifting the industry by way of design means breaking the cycle of create-make-waste and finding alternative pathways to provide consumers with what they need, and maybe even assessing if the product needs to be made in the first place. DTT is a sustainable technique for designing new models to create clothing that meets the needs of consumers. According to Vuletich (2012), DTTs are a human-centred approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success.

Brown and Kätz (2009) explain that DTT is a collaborative process by which the designer's sensibilities and methods are used to meet people's needs, not only with what is technically feasible, but also sustainable in the long term. Design thinking transforms need into demand. It is a people-centred approach to problem-solving that helps people and organisations become more innovative and creative. This definition can be translated as the pursuit of new knowledge (innovation) and the exploitation of existing knowledge.

The view from the researchers implies that the design thinking techniques are a solution-based approach where designers focus on finding solutions to the problems, in contrast to the problem-based approach. The problem-based thinking approach focuses on finding obstacles and limitations to why a problem exists. The application of the DTT allows the designer (now fully integrated in the entire product realisation chain) to find the appropriate solution through a diagnosis of current trends, aesthetic and useful, simple and technological and as close as possible to what the consumer is looking for. This synthesis process has been described as a process of abductive thinking aimed at collecting, organising, pruning, and filtering data to produce a potential solution (Kolko, 2010).

This study, therefore, has identified a co-design and multi-purpose design thinking approach to addressing the phenomenon under study. The principles of facilitation and self-concept are used in tandem with the co-design to optimise the process. The simultaneous use of facilitation will guide participants to come up with their ideas, as some design ideas may be complicated in the minds of “non-professionals” to translate into reality.

2.11.1 User-Centred Design as a Theoretical Framework for Kente Wrapping Techniques in Sustainable Bridal Design

User-centred design (UCD) is widely understood as a continuous and evolving process rather than a singular design intervention. It is closely aligned with participatory, generative, and co-creative design traditions that foreground user involvement throughout the design lifecycle (Chammas et al., 2015). Within the context of this PhD, UCD provides a critical theoretical path for examining how kente wrapping techniques can be developed as a sustainable and multi-purpose alternative to the dominant practice of single-use white wedding gowns in Ghanaian culture. By positioning specifically unmarried women as active contributors to the design process, UCD enables the articulation of cultural values, embodied knowledge, and sustainability expectations that are central to bridal garment use but are often overlooked in conventional fashion design processes. At its core, UCD integrates user needs, expectations, and experiential knowledge at multiple stages of development, facilitating a reciprocal exchange between designers, stakeholders, and end users (Gulliksen et al., 2003). **Figure 35:** General overview of a user-centred design process

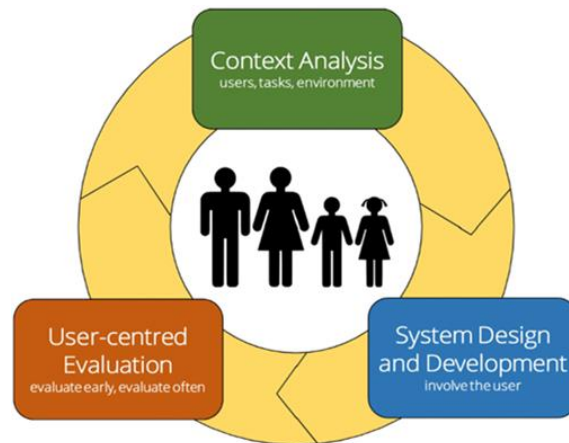


Figure 37: General overview of a user-centred design process

Source: Giuliani et al. (2020)

In the case of kente wrapping, this reciprocal exchange is particularly significant because wrapping is not merely a construction technique but an embodied cultural practice rooted in movement, ritual, symbolism, and social meaning. Applying UCD within this research allows the design of wrapped bridal gowns to be shaped not only by aesthetic or technical considerations, but also by users' lived experiences of marriage ceremony, post-wedding garment reuse, and cultural identity. This collaborative orientation repositions the designer-researcher as a facilitator of indigenous knowledge rather than an external authority, ensuring that design decisions remain grounded in user-centred evidence (Goodman-Deane et al., 2010).

The increasing emphasis on involving users, communities, and publics in design reflects a broader paradigm shift away from market-dominated approaches toward more human-centred and participatory design cultures (Lofthouse & Prendeville, 2018). This shift is especially relevant within fashion and textile research in postcolonial contexts, where dominant design models have

historically marginalised indigenous practices in favour of Western aesthetics and production logics. By adopting UCD.

This research challenges the normative privileging of the Western white wedding gown and instead foregrounds kente wrapping as a culturally embedded, user-driven design solution. Generative and participatory methods enable access to tacit and latent knowledge, such as how women understand garment value, longevity, and transformation, that cannot be adequately captured through surveys or post-use evaluation alone (Marti & Bannon, 2009).

Within this framework, users are conceptualised as co-creators rather than passive informants, while the designer assumes a facilitative role that enables the articulation of deeper experiential and cultural knowledge (Gulliksen et al., 2003; Wilkinson & De Angeli, 2014). This repositioning is fundamental when working with wrapping techniques, which rely on bodily negotiation, improvisation, and collective problem-solving. Through co-creative engagement, users contribute directly to decisions regarding drape, stability, comfort, symbolic appropriateness, and post-wedding adaptability factors that determine whether a wrapped kente bridal gown can realistically function as party wear, cocktail attire, beachwear and a morning coat.

Despite its conceptual strengths, UCD is not without operational challenges. Its implementation can be resource-intensive and time-consuming, particularly in small-scale or practice-based research contexts (Marti & Bannon, 2009). In this study, sustained engagement with users required careful planning, facilitation, and documentation to ensure that participation was meaningful rather than extractive. Effective UCD practice, therefore, necessitates the clarification of expectations, the allocation of adequate resources, and the creation of supportive environments that enable informed participation (Goodman-Deane et al., 2010). These considerations were especially salient given the cultural authority often ascribed to designers and researchers, which can inadvertently shape participant responses if not reflexively addressed.

Evaluating UCD outcomes also requires the early integration of appropriate data-gathering and assessment mechanisms, as well as an awareness of the institutional and cultural conditions that shape participation (Hur, 2014; Chammas et al., 2015). Within this research, generative interviews, embodied experimentation, and collective reflection were deliberately employed to counteract hierarchical knowledge production and to allow users to shape both the design outcomes and the criteria by which those outcomes were evaluated. Nonetheless, achieving broad and diverse participation remains a challenge, and the findings of this study must therefore be understood as contextually situated rather than universally generalisable.

Empirical research consistently demonstrates the benefits of UCD and participatory design, particularly in terms of mutual learning, enhanced communication, and the synthesis of diverse perspectives (Wilkinson & De Angeli, 2014). These benefits will be evident in the co-creation of kente-wrapped bridal forms, where user-generated concepts will reveal high levels of originality, cultural resonance, and practical adaptability. While professional design expertise contributed to structural feasibility and refinement, user contributions will be instrumental in ensuring that the resulting garments align with lived expectations of marriage, reuse, and social visibility. This

supports existing research suggesting that co-creation between users and designers is especially productive when each contributes distinct forms of knowledge (Goodale et al., 2012; Martin et al., 2003)

UCD also plays a critical role in supporting sustainable and transformational design innovation. By uncovering user motivations, constraints, and aspirations that are not readily accessible through observation or verbal self-report alone, UCD enables the development of design strategies that are both environmentally and culturally sustainable (Lu & O'Reilly, 2024). In the context of this thesis, user-centred engagement revealed strong support for garment longevity, adaptability, and cultural continuity values that directly underpin the multi-purpose logic of kente wrapping. This alignment between user experience and design intention enhances usability, satisfaction, and the likelihood of long-term adoption (Gulliksen et al., 2003; Wilkinson & De Angeli, 2014).

Moreover, UCD has been empirically linked to an increased diversity and volume of design ideas in early development phases, improved creativity, and stronger alignment between users and design outcomes (Goodman-Deane et al., 2010; Goodale et al., 2012). Applied to this research, these benefits are reflected in the multiple garment configurations generated from a single piece of cloth, demonstrating how wrapping techniques can challenge linear, consumption-driven fashion models. Collectively, these outcomes position UCD as a critical theoretical framework for this PhD, enabling the integration of sustainability, cultural continuity, and user agency in the development of multi-purpose traditional bridal gowns.

2.11.2 Principle of Facilitation

This principle, as mentioned earlier on mention, is in tandem with the co-design to optimise the process. The principle of facilitation is a practice of structuring and guiding dialogues, meetings, events, decision-making processes, and other activities using intentional strategies that help groups converse and collaborate more respectfully and productively (Hanson & Hanson, 2011). Facilitation is used to create a forum for groups of people to express their ideas, concerns, preferences, or priorities, while also listening to and considering the perspectives of others.

Lundy, Gottret and Ashby (2013) mentioned that in organising, engagement, and equity work, the outcome of a dialogue and decision-making process typically emerges from the process; that is, the process is not manipulated to arrive at an outcome that's been determined in advance by those in positions of power or authority. By applying rules to everyone equally, treating all participants equitably, and modelling, demonstrating, and explaining the behaviours expected of all participants, facilitators help groups converse and collaborate more productively so that the eventual outcome, whatever it might be, results from a process that participants feel was inclusive, fair, respectful, and democratic (Lundy et al., 2013). The principle of facilitation helps in providing structure, direction, and guidance to a process (Kennon, Howden & Hartley, 2002).

According to Kennon et al. (2002), structured and well-executed facilitation helps organisations, teams, and community groups avoid common social tendencies, behaviours, and styles of interacting that can undermine productive discussion and collaboration. For instance, facilitators help individuals with different values, beliefs, or cultural backgrounds listen to one another in

constructive ways rather than defaulting to argumentation or stereotyping, which can improve mutual understanding and appreciation across differences.

Facilitators typically help groups uncover and articulate areas of both agreement and disagreement, though facilitated discussions and decision-making processes may or may not achieve consensus, compromise, or full participant support for the outcome or decision (Krick et al., 2005). The facilitator assists in eliciting and clarifying the goals of both individual members and the group as a whole. Overall, the facilitator is a versatile resource that may be used by the group as a counsellor or adviser. The facilitation principle can be used to create more welcoming, inclusive, and non-threatening environments in which consumers/users may feel more confident, relaxed, or comfortable, speaking up, sharing their ideas in developing clothing that can be used in different situations or scenarios. Therefore, it is important to understand the needs of consumers in developing a multi-purpose clothing design.

2.11.3 Self-Concept Theory

This study was anchored on self self-concept theory. Self-concept theory is strictly a totality of beliefs, preferences, opinions and attitudes organised systematically, towards personal existence (Michael & Anne, 2002). Simply put, this theory shows how an individual thinks of him/herself and how he/she should think, behave and act out various life roles. Self-concept is made up of one's self-schemas and interacts with self-esteem, self-knowledge, and the social self to form the self as a whole. See Figure 36 Self-Perception of an Individual.

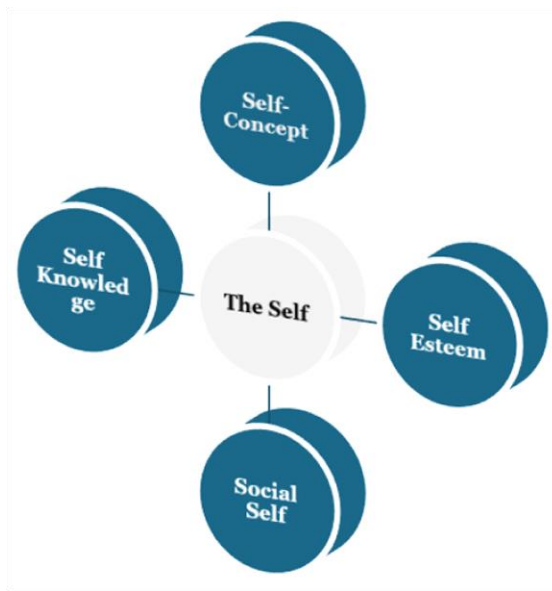


Figure 38 Self-Perception of an Individual

Source: Author

Self-concept theory has always had a strong influence on the development of new products. Self-concept theory cannot be ignored if there is a need to successfully address the problem of wasted garments and enhance consumers' advantages in following current trends and styles. In addition to this growing awareness, new ways are being developed to strengthen self-concepts. Many of the successes and failures that people experience in many areas of life are closely related to the ways that

they have learned to view themselves and their relationships with others. Every individual has within themselves relatively boundless potential for developing a positive and realistic product. It is influenced by biological and environmental factors, but social interaction plays a big role as well.

Self-concept helps in incorporating the views of consumers and users of products or services in product development. Designers and consumers/users knowing their self-concept can work together to produce a multi-purpose clothing that is essential for successful sustainable design that meets the needs of consumers. What the individual feels about himself/herself and how they judge their abilities, competencies, and worth as a person helps in putting some effort into boosting and integrating the needs of people, the possibilities of technology, and the requirements for business success.

2.12 Summary of Chapter

Historically, it has been revealed through literature that the philosophy of most brides wearing the “white wedding” gown stems from Western culture, more specifically from Great Britain, around the year 1442 till the present day (Asmah et al., 2014). The BG literally denotes considerable aspects of the marriage customs, particularly the femininity, social class, beliefs and values of the wearer. But further review suggested that the BG was of the essence in respect to its religious association during the eighteenth and early nineteenth centuries, but not in these modern times; it only represents a symbol of luxury, status, novelty and romantic love (Ehrman, 2011).

This passage of inference further supports Carter & Duncan (2017) The BG has lost its value, even in Great Britain, where it originated. Evidence of this assertion as pertains in literature is that marriage rates are currently very low in Britain, and divorce is very rampant. The days of legitimate marriage serving as a source for legitimate sexual relationships or even parenting are long buried in the sand (Duncan and Phillips, 2008).

Bridal gowns undoubtedly are one of the most common CL items that are often disposed of prematurely or become a white elephant in the wardrobe of many as soon as wedding ceremonies are over, which means that it has become a one-time wearing attire, regardless of the time, money and other resources invested in its acquisition. (Schaefer & Navarro, 2016).

Hypothetically, this study has concluded through an extensive review of the literature that the “white bridal gown” is a colonial remnant by Great Britain that has found its way into the Ghanaian marriage culture, and needs to be readdressed to align with the Ghanaian culture. The white wedding dress of Western culture can be found among the wedding traditions of several Ghanaian cultures (Hudson, 2010). Contemporary versions of the white wedding dress are often in great demand instead of the traditional wedding dress. Traditional Ghanaian weddings fell out of favour during rapid industrial growth and the emergence onto the world marketplace. Brides during post-independence were not only wearing world fashions, but they were also actively revising world fashions to suit their tastes and preferences.

Western fashion has influenced the style of dress of many non-Western cultures, in some areas replacing the traditional dress entirely (Hudson, 2010). Several countries incorporated the white wedding gown into their wedding traditions during the early and mid-twentieth century. In Ghana now, one can find Western fashion in bridal gowns, either through the style of dress, type of fabric, or style of accessories (Alabi, 2020). Literature has revealed that there have not been many tremendous changes in the design philosophy and general silhouettes of the “white wedding gowns” from the 14th century to date, as designs always denote happiness, glamour, royalty, fabulousness and flamboyance.

In this regard, the study highlighted that these design attributes come with an extravagant cost financially and to the environment, as translating such design attributes into bridal gowns requires more materials, which in essence will infringe the principles of slow consumption as a key element in sustainability. Literature has pointed out that bridal gown has a substantial effect on the environment, particularly in the user phase, but their negative impact on the environment has been overlooked because of their perceived holiness and flashiness (Kwon, 2017). It is within this context that Black (2008), Bye (2010), Fletcher (2008), and Gwilt (2011) write that CL designers are in a better position to address the environmental impacts of the BG to improve SUST in fashion. They explicitly explain that designers are mainly engaged in the garment development process and therefore have the potential to initiate practical innovative conceptual models and other design thinking techniques and strategies during the development process to promote the lifespan of clothing. But, it has been established that most existing conceptual models for fashion designers are more theoretical and do not consider consumer involvement vis-à-vis their values and needs as a sustainable design approach.

Earley et al. (2017) challenge the traditional role of CL designers as the sole drivers of consumer values and needs through design. Rather, CL designers should involve users (UCD) and provide aesthetic experiences and guidance to wearers of clothes to translate their self-concept into reality. It is within this scholarly domain that the importance of this study arises, as it seeks to propose a practical conceptual model for fashion designers in the design and development of sustainable bridal gowns using the multi-purpose technique, wherein the user-centred design (UCD) will serve as a design approach to trigger multiple usages for the extended life of bridal gowns.

To stimulate the user-centred design (UCD) process effectively, the study encompasses the self-concept theory approach, as well as the principles of facilitation theory, to assist participant in practically translating or mimicking the mental picture of their desired BG design that reflects their intrinsic qualities, functionality, and aesthetic values to promote extended life. Consumers generally buy products that are a direct reflection of their self-concept, and people know their minds better.

Armstrong et al. (2016) reiterated that consumer involvement (co-design) at the design stage elevates garment appeal and allows users to bond with garments that are one of their kind, satisfying. But one may argue that some design ideas may be complicated in the minds of ‘non-professional’ consumers to translate into reality; of course, it may be difficult. But that notwithstanding, Duschinsky (2012)

argues that ***“no human being is born with built-in mental content and that human knowledge comes from experience and perception”***.

According to Armstrong et al. (2016) the first step in achieving a more sustainable apparel industry is to consider co-design through the wearer. Despite the purchasing power that consumers possess, they still have more to offer, which the CL industry should not overlook in the fight against resource consumption and sustainability (McDonough & Braungart, 2010). Currently, as it stands, all our CL, including BGs, are designed without any recourse for wearers to participate or contribute in any way in the designing process; you just have to pick from the masses of clothes according to your size and the prevailing fashion trend (Milburn, 2017).

Chapter | 3

Methodology

3.1 Introductory Note

This section of the research assesses the procedures used in conducting the research under study. It discusses the research design, population, sample size, sampling technique, data collection instrument, validity and reliability of the instrument, and data analysis procedure. Research methodology defines the systematic and scientific procedures used to arrive at the results and findings for a study against which claims for knowledge are evaluated (Nachamias et al., 1996). A methodology is therefore shaped by the perspective the researcher chooses to approach the study.

3.2 Research Design

A research design is a blueprint for conducting a research project. It shows the way forward for obtaining the information needed to solve research problems. It highlights, per the problem, the specification of methods, procedures for acquiring the data needed, what data is to be collected from which sources and by what means (Koopmans, Ruud, 2010). Accordingly, the study, in its quest to address the problem under investigation, has categorised the study into three main phases, i.e., explorative, generative and active research phase, as a strategy for gathering relevant information and ideas that will help in addressing the study objectives (Lithner, 2008). The research design also makes it possible for readers to make sense of the data (Matthews & Ross, 2010).

The study is qualitative and consisted of two phases: practical and theoretical. Hence, the methodological approach employed is mixed methods, i.e., Interventionist and non-interventionist research methods to gain a deeper understanding from different perspectives of the phenomenon under investigation. The study is segmented into three (3) phases, which include: explorative phase (noninterventionist), generative phase and active research phase (interventionist).

The exploratory phase of the study employs an extensive review of related literature and practices, and descriptive-observational methods as the building blocks to collectively and systematically assess and affirm the current evidence that pertains to designing for longevity in the clothing industry in the BG industry (Snyder, 2019). This will inform the study to arrive at identifying design thinking approaches for longevity in the BG industry. Accordingly, the choice of descriptive-observational study method is based on the fact that it will enable the study to gather and examine firsthand information without any interference from stakeholders' point of view, to find out attributes that could better inform the successful execution of the project (Bhawna & Gobind, 2015).

Leedy et al. (2002) state that the descriptive study examines the situation as it is and does not involve changing or modifying the situation under investigation, nor its intended cause-and-effect

relationship. The active research phase (interventionist), which calls for the involvement of the researcher in practical activities, necessitated the involvement of active research methods as well as studio-based methods to manipulate and experiment with the feasibility of materials, tools and design thinking ideas that may come forth during the generative phase. Studio-based research methods also enable the researcher to carry out other related design practices that may be deemed necessary to arrive at very sustainable design thinking ideas that can collectively help in addressing the subject matter under investigation (Swedberg, 2018). **See Figure 39**, representing the research design/framework of the study.

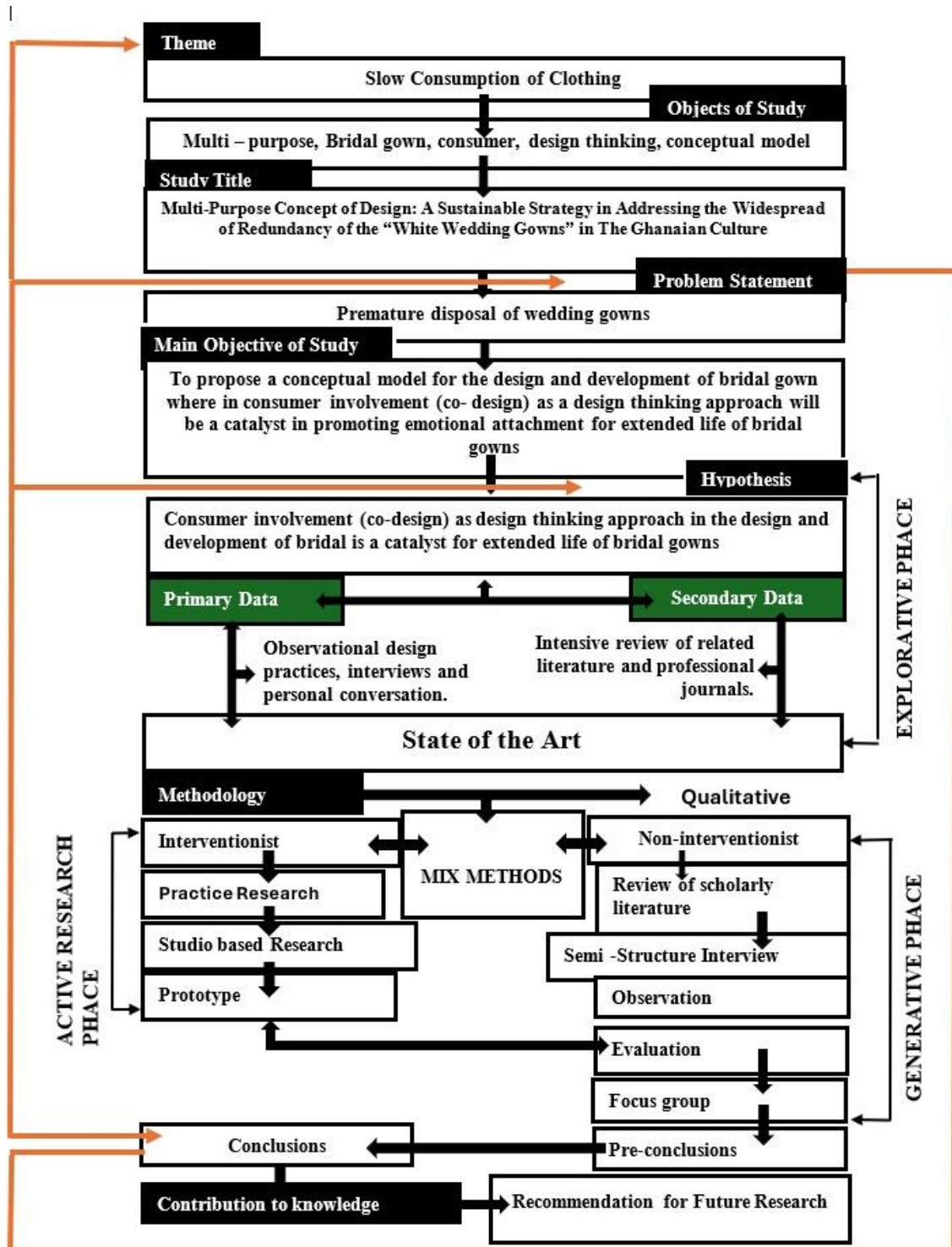


Figure 39: Research design/framework

Source: Author

3.3 Population

The suitability of sampling procedures is a key determinant of research quality (Lodico et al., 2006). A research population refers to the group from which a researcher seeks to generalise findings and is commonly defined as individuals or entities that share particular characteristics relevant to the study (Muijs, 2004; Polit & Hungler, 1996; Burns et al., 1993). In the context of this research, the

population comprised stakeholders whose experiences and knowledge are central to bridal gown production, use, and cultural interpretation in Ghana. These included selected bridal gown designers from the Ghana National Tailors and Dressmakers' Association (GNTDA), clothing and textiles teachers, married couples, yet-to-be-coupled individuals, and historians.

3.4 Sample Size and Sampling Technique

Sampling involves selecting a subset of a population for systematic investigation (Best & Khan, 2005; Johnson & Christensen, 2004; Muijs, 2004; Cohen & Manion, 1994). Given the qualitative and exploratory nature of this study, a purposive sampling strategy was adopted to ensure that participants possessed relevant experiential, cultural, and professional knowledge. A total of 51 participants were selected, distributed as follows:

- 8 fashion designers (GNTDA)
- 8 clothing and textiles teachers
- 20 married couples
- 10 yet-to-be-coupled individuals
- 6 historians

Purposive sampling enabled the deliberate selection of participants based on their capacity to contribute meaningfully to the investigation of sustainable bridal gown practices and the cultural redundancy of white wedding gowns in Ghana (Bernard, 2002; Ross, 2002). This approach aligns with user-centred design (UCD) principles, which prioritise the involvement of relevant and knowledgeable users in co-creating, testing, and validating design solutions (Gulliksen et al., 2003; Chammas et al., 2015).

3.5 Data Collection Instrument

The study employed qualitative data collection instruments, specifically semi-structured interviews and focus group discussions, to generate in-depth, contextualised insights. These methods were complemented by a User-Centred Practice Workshop grounded in participatory and generative design traditions, enabling users to contribute actively to knowledge production (Galletta, 2013; Marti & Bannon, 2009).

3.5.1 Semi-structured Interview

Interviews are an interchange of ideas among two or more individuals on a topic of common interest and are grounded in the centrality of human interaction for knowledge production, with particular attention to the social context in which data are generated (Kvale, 1996). A semi-structured interview involves a limited number of predetermined questions while allowing flexibility to pursue emerging themes and participant-led insights (Owen, 2001). By combining structured and unstructured elements, semi-structured interviews facilitate both comparability across participants and the in-depth exploration of issues specific to individual experiences (Ekblad & Baarnhielm, 2002; Lederman, 1990). They are particularly effective for generating rich qualitative and descriptive data in educational, cultural, and design-related research contexts (Rikard, Knight & Beacham, 1996).

In this study, semi-structured interviews were conducted with fashion designers, clothing and textiles teachers, married couples, yet-to-be-coupled individuals, and historians. Interviews were audio-recorded and subsequently played back to participants to enhance accuracy and participant validation. Following Tashakkori and Teddlie (2003), interviews were also used to elicit emotional, cultural, and experiential dimensions influencing bridal gown use and perceptions of sustainability. The interview guide was organised into two sections: Section A, which captured participant demographic and background information and Section B, which addressed themes derived from the research objectives, including sustainability, cultural relevance, adaptability, and user experience of multi-purpose bridal gowns.

Another phase of the interview was the co-creation workshop, interactions with potential users of bridal gowns. The Workshop was designed in accordance with participatory and user-centred design (UCD) principles (Gulliksen et al., 2003). The workshop involved eleven (11) unmarried women, purposively selected as prospective users of bridal garments and key informants in shaping future bridal gown practices (Tordzro, 2021). The Selection criteria include:

1. cultural familiarity with Ghanaian wedding traditions
2. Idea of kente wrapping techniques and
3. willingness to engage in hands-on, generative activities.

The sample size was intentionally kept small to facilitate deep interaction, collective reflection, and rich qualitative data generation, consistent with generative and participatory design research standards (Marti & Bannon, 2009). Participants were positioned not as passive respondents but as active contributors to design knowledge, engaging through dialogue, experimentation with kente wrapping techniques, and collaborative evaluation of design possibilities. This workshop formed a core component of the UCD methodology adopted in the study, ensuring that emerging design concepts were grounded in authentic user experiences and culturally situated practices.

3.5.2 Focus Group Discussion

Focus group discussions were employed to facilitate interactive dialogue among participants with comparable professional or experiential backgrounds (Doody & Bailey, 2016). This method encouraged participants to agree, disagree, and build upon one another's views, thereby revealing shared values, tensions, and collective judgments regarding the prototype bridal gown. Focus groups were moderated by the researcher to ensure inclusive participation and sustained discussion.

The focus group sessions were largely composed of fashion designers because of their expertise. However, some interested parties, including married and unmarried individuals, were also involved in the evaluation. But the critical design discussion was largely centred on the fashion designers. Structured evaluation checklists and criteria were applied. **Appendix D**. The finished garments were modelled to support embodied and visual assessment. This approach reflects UCD practices that emphasise co-creation, continuous feedback, and collaborative decision-making (Lu & O'Reilly, 2024; Goodale et al., 2012).

3.6 Sources of Data

Data collection plays a very crucial role in the statistical analysis (Douglas, 2015). Data are facts or figures from which conclusions can be drawn. Before one can present and interpret information, there has to be a process of gathering and sorting data. Gathering data can be accomplished through a primary source (the researcher is the first person to obtain the data) or a secondary source (the researcher obtains the data that has already been collected by other sources, such as data disseminated in a scientific journal (Mesly, 2015)). In this study, both primary and secondary data were gathered.

3.6.1 Primary Data

Primary data were collected firsthand through semi-structured interviews, focus group discussions, workshop activities, and observation. These data provided direct access to participants' experiences, interpretations, and design preferences. The reliance on primary data aligns with UCD methodology, which foregrounds user engagement and lived experience as central to design development and evaluation (Wilkinson & De Angeli, 2014).

3.6.2 Secondary Data

Secondary data sources included books, academic journals, online publications, and government records. These materials were used to contextualise the primary data, identify conceptual and empirical gaps, and support triangulation. The integration of secondary data strengthened the analytical depth and credibility of the study (Creswell, 2005; Mesly, 2015) data can not be obtained at all.

3.7 Data Analysis Method

Data analysis was conducted qualitatively, drawing on interpretivist principles to capture meanings, patterns, and relationships within the data (Best & Khan, 1996; Creswell, 2005). Audio recordings from interviews and focus group discussions were transcribed verbatim. The data were then coded, categorised, and thematically analysed, with particular attention to issues of sustainability, cultural relevance, usability, and multi-purpose functionality of bridal gowns. NVivo version 8.0 was used to support data management, coding, and visualisation. The analytical process involved data reduction, data display, and conclusion drawing, undertaken continuously throughout the study. This approach ensured systematic integration of user perspectives, consistent with the principles of user-centred design (Gulliksen et al., 2003).

3.8 Summary of Chapter

This chapter has outlined the methodological framework underpinning the study, integrating descriptive observational and studio-based approaches with user-centred design principles. Purposive sampling ensured the inclusion of participants with relevant cultural, professional, and experiential knowledge. Data were collected through semi-structured interviews, focus group discussions, and a user-centred practice workshop, enabling co-creation, evaluation, and refinement of sustainable, multi-purpose bridal gown designs. Collectively, these methods ensured that the research outcomes were empirically grounded, culturally responsive, and aligned with sustainable design objectives.

Chapter | 4

Presentation of Data, Analysis and Discussion

4.1 Introduction

This chapter focused on the analysis and discussion of the gathered data in the study. The chapter aims to understand the results meaningfully, thus applying only the verification to research objectives and questions drawn in previous chapters. The analysis is made to gather what diverse stakeholders (fashion designers, clothing and textile teachers, industry players, historians, married individuals, and unmarried individuals) think about bridal wear design sustainability, co-design (client involvement), and the multi-purpose concept (integration of cultural and ethical iterations) of bridal wear.

Ardently, the data were collected through interviews and questionnaires. Responses from audio recordings were carefully transcribed before being analysed with questionnaires. Varying types of statistical, analytical, and visual techniques were used in this section to analyse the data, so that different groups get a precise idea about trends, patterns, and deviations among the groups. The discussion is built around the main theoretical frameworks and the literature survey that provides the necessary background for interpreting the results. The chapter starts with a thorough study of the data and then suggests the question of sustainable fashion, consumer behaviour, and the new trends in the bridal wear industry.

The analysis focused on the sustainable bridal wear design, the concept of co-design, multi-purpose concept, and sustainability in the bridal wear industry, and the impact of demographic factors on design preferences and consumer behaviour. The chapter ends with the deduction of the results, emphasising the implications for both theory and practice and setting the backdrop for the final chapter.

4.2 Demographics of Participants

This study analyses the demographic makeup of stakeholders in the fashion industry, including married and unmarried individuals, historians, designers, and industry players. It reveals gender distribution, educational levels, and age ranges, providing insights into their backgrounds and experiences, and enabling effective strategies to cater to their needs.

Table 1: Demographic Distribution of Respondents

Category	Reponses	Married		Un-Married		Historians		Fashion Designers/ Teachers		Industry Players (GNTDA)	
		F	%	F	%	F	%	F	%	F	%
Gender	Male	0	0	0	0	0	0	2	20	2	20
	Female	14	100	16	100	6	100	8	80	8	80
Educational Level	Pre-Tertiary	6	44	9	56	0	0	0	0	1	10
	Bachelor	8	56	7	44	3	60	9	90	9	90
	Masters	0	0	0	0	2	40	1	10	0	0
Age - Range	25 -34	7	50	15	94	0	0	1	10	0	0
	35 – 44	4	29	1	6	0	0	5	50	6	60
	45 – 54	2	14	0	0	2	40	2	20	3	30
	55 – 64	1	7	0	0	3	60	2	20	1	10

In the studied groups, as shown in Table 1, the gender distribution ranges from 80% to 100%, with women making up the majority of respondents. This is in line with the trend of women taking over the fashion business, especially in positions of authority such as designers, instructors, and experts. The level of education differs among stakeholders; unmarried people are more likely to possess pre-tertiary, bachelor's, or master's degrees (56%). Historians and business leaders have shown that bachelor's degrees are the most prevalent, with a larger percentage of people holding these degrees. Only a tiny percentage of industry participants and historians hold master's degrees, making them less frequent. The age distribution varies by demographic, with the bulk of people falling into the 25–34 age bracket, especially single people (94%). Figures 40–42 show the graphical representation of the participants' demographic characteristics.

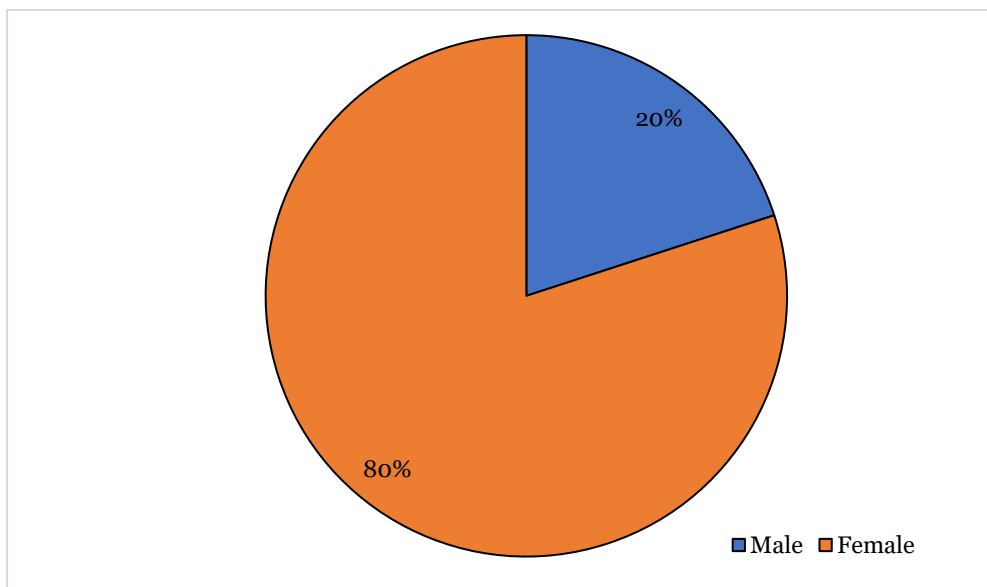


Figure 40: Gender Distribution of Respondents

Source: Author

Figure 40 reveals a significant gender gap of 80% female and 20% male respondents, which is probably a reflection of a female-dominated industry. Out of the five categories of respondents, it was evident that only Fashion Designers/ Teachers and GNTDA have two respondents each, amounting to 20% male respondents. All the remaining categories were 100% at par. The study reveals a significant gender gap, with female participants dominating the study, accounting for 100% of unmarried participants, historians, fashion designers/teachers, and industry players.

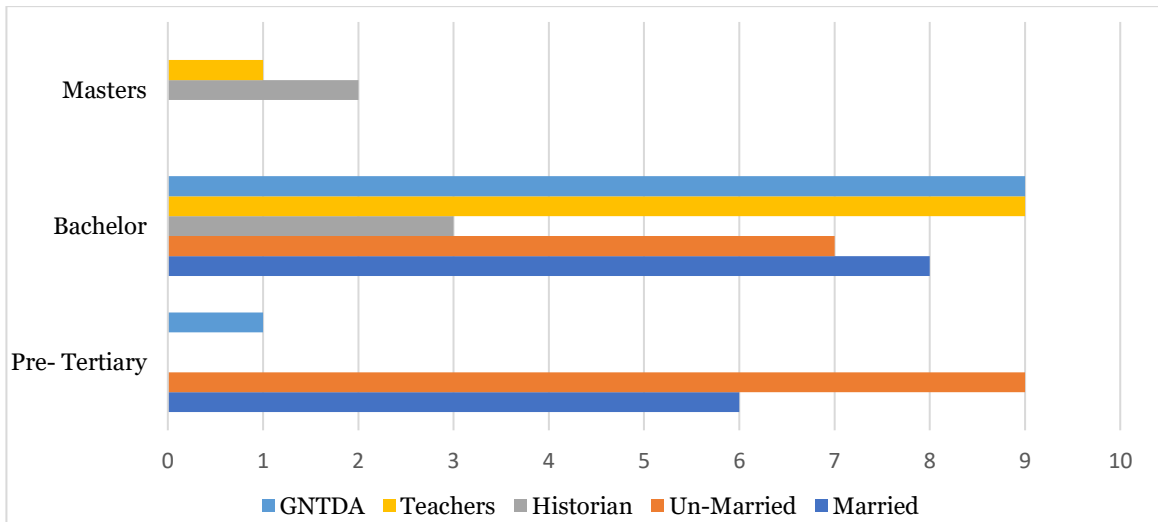


Figure 41: Educational Level Distribution of Respondents

Source: Author

The study has brought to light the fact that there are different levels of education in various groups, with the spotlight set on the bridal wear design field in particular. Fashion designers and clothing & textile teachers (teachers) have a high level of academic attainment, with 90% (9) of them earning a bachelor's degree. This paves the way for the argument that formal education is important not only for the building of designs but also for teaching them. The 10% group who have a master's degree shows that they continue to pursue more in-depth knowledge, which is vital for both higher education and specialised positions in the industry. Pre-tertiary education is not common in the area. Figure 41 shows varying educational backgrounds, with a majority of married individuals having bachelor's degrees and pre-tertiary education. The age distribution also varies, with the unmarried group being younger and the married group covering various age groups.

The analysis came up with a statement that in the fashion industry (GNTDA), about 90% (9 out of 10) of the players get a degree, which emphasises the importance of formal education in the increasing overall sector development and in deepening detailed knowledge of both business and technological sides. However, 10% (1 out of 10) of people in this business have only pre-tertiary education, and these people are likely to be the one who prefers practical experience or vocational training.

Historians in the study minimised the distribution in the study by the students who took bachelor's and master's degrees, where 60% have a bachelor's and 40% have a master's degree. The distribution

reflects the rigorous nature of the discipline, where graduate degrees are often essential for carrying out deeper research and analysis, particularly in the history and culture of fashion.

The educational level among married participants shows that a slight majority (56%) hold a bachelor's degree, while a significant portion (44%) have a pre-tertiary education. This mix suggests that while higher education is valued, a substantial number of married individuals may have entered the workforce or family life without pursuing tertiary education, possibly due to different life priorities or socioeconomic factors. Main participants with no partner (unmarried) show a reversed route to those who are married, with 56% (9 out of 16) getting pre-tertiary education and 44% (7 out of 16) having a bachelor's degree. This might mean that a relatively larger percentage of the single persons in this research are still with a pre-tertiary education or are pursuing different educational options that are suggestive of higher attainments in the future.

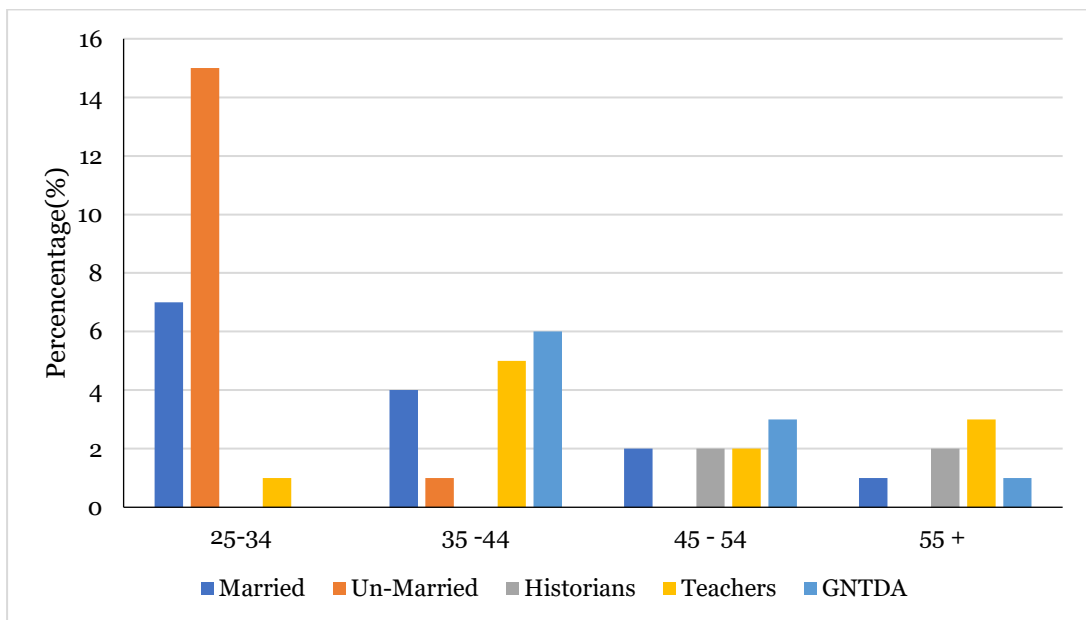


Figure 42: Age Distribution of Respondents

Source: Author

Different groups tend to disclose age in different ways. Notably, the majority of the respondents come under the 25-34-year-old age bracket, particularly among single individuals, at 94% as expressed in Figure 42. Married women also have a big say in this age group (50%). As age increases, the strongest stakeholders are younger age ranges, with the 35-44 age range being mostly prevalent. Historians and industry players have a widespread age distribution with a strong presence among different age brackets. The wide range of age distribution reflects the diverse life experiences and viewpoints within the investigation.

4.3 Co-Design Concept

The engagement of customers in creating bridal attire, often referred to as co-design, has gained notable importance in the bridal fashion sector. This approach permits clients to actively partake in the design procedure, guaranteeing that their distinct preferences and imaginations are integrated

into the end product. The ensuing discourse examines various stakeholder perspectives regarding customer engagement in bridal wear creation, contingent upon the presented information.

This section summarises the findings of a study that intended to evaluate the adoption of co-design approaches in the context of wedding gown design. The goal of the study was to investigate whether clients impact the design of gowns, with data collected from two unique focus groups: Clothing & Textile Teachers/Fashion Designers and Industry Players. The study indicates various levels of co-design adoption among these focus groups, offering information on their viewpoints and behaviours.

Table 2: Summary of Co-Design Practices

	Industry Players		C&T Teachers / Fashion Designers	
	Yes	No	Yes	No
Do you sew bridal gowns?	10 (100%)	0 (0%)	8 (80%)	20 (20%)
Sew according to demand?	7 (70%)	3 (30%)	9 (90%)	1 (10%)
Client influence in designing?	6 (60%)	4 (40%)	7 (70%)	3 (30%)

Table 2 shows a comparative analysis of the sewing techniques used to make wedding dresses and how industry players and clothing & textile teachers/fashion designers were the two main groups involved in the impact of clients' desires. This study provides important insights into how well these practitioners align with consumer expectations and market needs. *Do you sew bridal gowns?* The data in the table shows that all ten (10) making 100% of Players in the Industry sewn bridal wear. Eight (8) out of the ten (10) indicate 80% Clothing &Textile teachers/fashion designers sew wedding dresses, while the other two (2), or 20%, do not. These results demonstrate that Industry Players are all involved in the wedding gown manufacturing process, although a comparatively smaller proportion of Clothing &Textile Teachers and Fashion Designers were involved in the actual sewing of bridal dresses. This may be a symptom of a difference in concentration between certain C&T Teachers/Fashion Designers and other fashion-related fields, as opposed to actively producingweddingclothing.

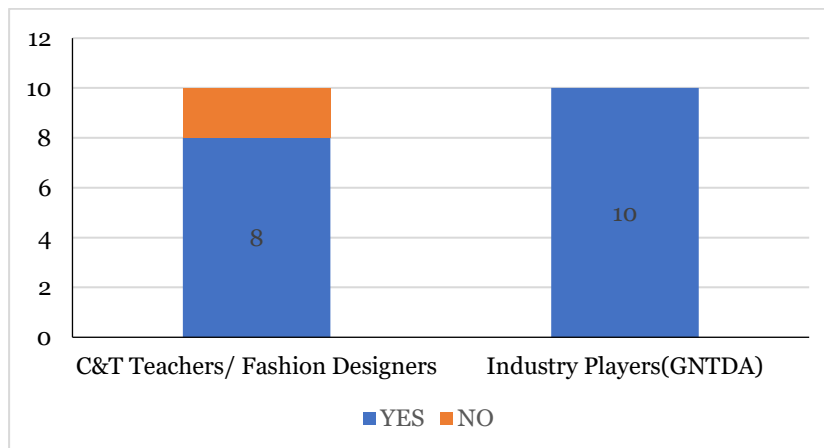


Figure 43: Sewing of Bridal wear

Source: Author

On the sewing according to demand, 30%(3) do not sew by demand, while 70%(7) do sew according to demand. Whereas, 10% of C&T Teachers/Fashion Designers do not sew on demand, compared to 90% who do, or 9 out of 10. Compared to industry players, a larger percentage of C&T teachers and fashion designers produce wedding gowns in response to client demand. This would suggest that, in addition to their educational backgrounds, which most likely emphasise consumer-oriented design methods, the C&T Teachers/Fashion Designers can be more flexible or responsive to the specific needs of clients. This makes sense given their deeper involvement in bespoke design tasks. Industry participants exhibit a somewhat lower degree of alignment while being primarily responsive to demand. This might be attributed to a preference for standardised production processes or a distinct business plan that does not necessarily prioritise the demands of individual customers.

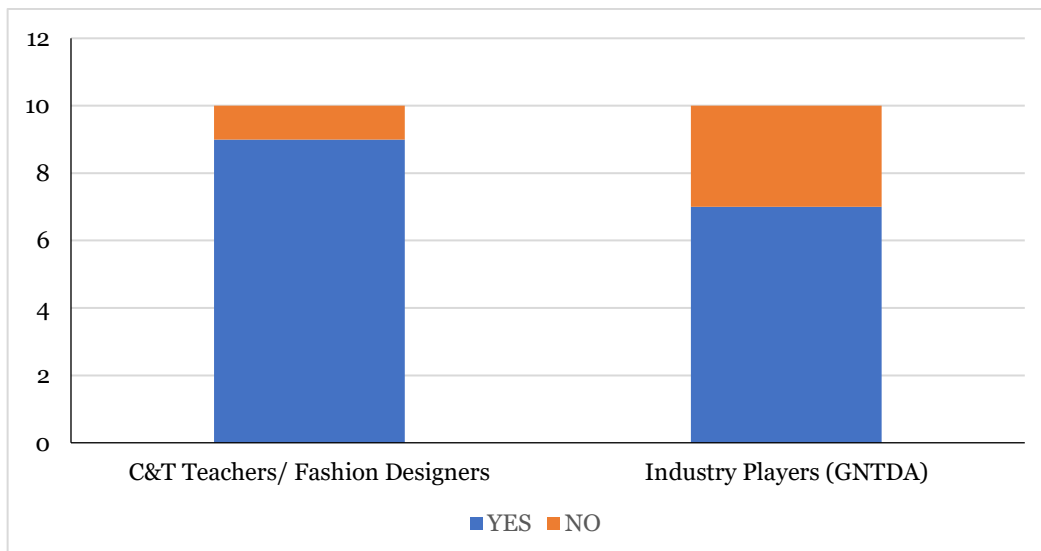


Figure 44: Sewing According to Demand

Source: Author

With reference to the influence of customers on Wedding Dress Design, 40% (4) of industry participants do not allow client engagement in the design process, compared to 60% (6) of participants. 70%(7) of C&T Teachers/Fashion Designers mention client influence; 30%(3) do not. Although both groups acknowledge the value of customer participation in the creative process, C&T Teachers/Fashion Designers are more inclined to do so. The C&T Teachers/Fashion Designers' educational and creative backgrounds may account for this discrepancy, as they may have placed a higher priority on personalised solutions and client satisfaction than Industry Players. On the other hand, Industry Players function within a possibly more commercial framework and may restrict client involvement to maintain efficiency or the unique design concept.

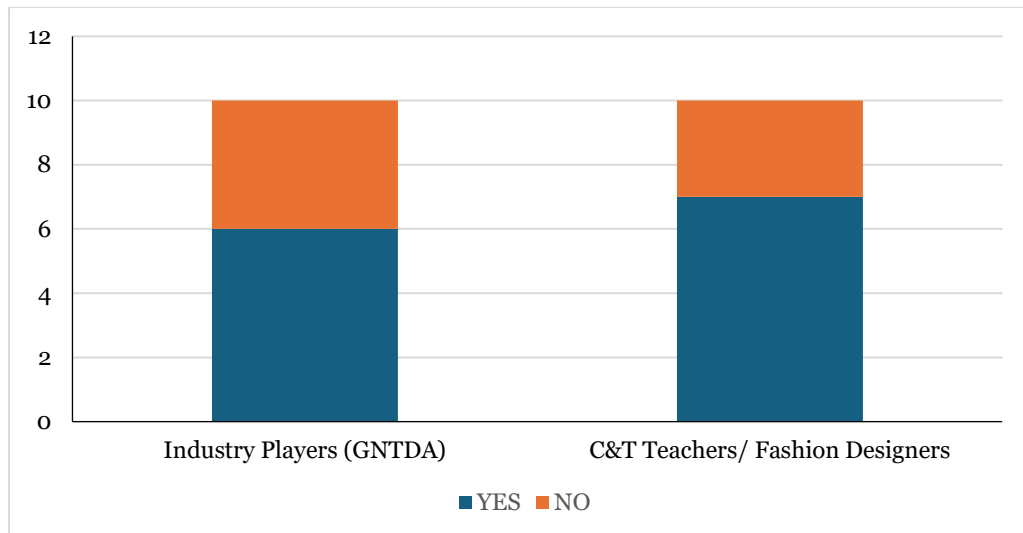


Figure 45: Co-Design of Bridal Wear

Source: Author

The investigation reveals that, despite their considerable involvement in wedding gown creation, Industry Players and C&T Teachers/Fashion Designers operate in quite different ways. The C&T Teachers/Fashion Designers' dual roles as educators and custom designers are further explained by the fact that they seem to be more attentive to the demands of their customers and receptive to their design recommendations. Bridal gown manufacture is a full-time endeavour for Industry Players as well, but there is less alignment when it comes to client-specific expectations and influence, possibly as a result of divergent operational goals or business models.

4.3.1 Discussion on Findings of Co-Design Concept

Analysis of the sewing practices of bridal gowns from Industry Players and C&T Teachers/Fashion Designers provides insights into the operational differences and levels of client interaction between Industry Players and C&T Teachers/ Fashion Designers. The data present that Industry Players are fully engaged in the production of bridal gowns, with all the respondents confirming their involvement in this activity at 100%. The comprehensive involvement in this process indicates that the manufacturing of bridal gowns represents a fundamental component of their business activities, presumably motivated by the economic significance of the bridal fashion industry (Smith & Jones, 2023). On the other hand, a slightly lower number (80%) of C&T Teachers/Fashion Designers disclose involvement in sewing bridal gowns. This difference could indicate that these professionals often play double roles balancing act that may range from teaching to more hands-on design work. The remaining 20% of the C&T Teachers/Fashion Designers not engaged in constructing bridal gowns may have stronger emphases on teaching, research, or other areas of fashion design not directly involving bridal apparel (Johnson & Miller, 2022).

When it comes to sewing according to demand, C&T Teachers/Fashion Designers demonstrate higher responsiveness, with 90% adhering to client demands compared to 70% of Industry Players. The heightened level of responsiveness observed among C&T Teachers and Fashion Designers could be attributed to their educational experiences, which stress the significance of addressing distinct

client requirements and promoting a cooperative design methodology (Brown & Taylor, 2021). Industry Players, while still predominantly demand-responsive, may face constraints related to production scalability, cost efficiency, and standardised product lines that make them less flexible in serving the demands of individual clients (Walker 2023). A second distinguishing characteristic between the two groups involves the influence that the client may exert on the design process.

A significant 70% of C&T Teachers/Fashion Designers incorporate client input into their designs, compared to 60% of Industry Players. The elevated percentage observed among C&T Teachers/Fashion Designers corresponds with their responsibility in advocating for individualised and bespoke designs, wherein the satisfaction of clients is of utmost importance.

4.3.2 Summary of Discussion

In general, data tends to show significant differences between Industry Players and C&T Teachers/Fashion Designers in sewing approaches, responsiveness to the market needs, and level of client involvement in the design of a bridal gown. C&T Teachers/Fashion Designers turn out to be very fond of bespoke, more client-oriented designs, revealing their educational and creative role. The elevated responsiveness of this group to client demands, along with their readiness to integrate client feedback into the design process, indicates a dedication to both personalisation and innovation in bridal attire. This aligns with the overarching objectives of fashion education and bespoke design (Jones, 2022). Conversely, Industry Players demonstrate complete involvement in the production of bridal gowns; however, they display a relatively lower level of responsiveness to specific client demands and their impact.

This phenomenon may be attributed to the operational imperatives prevalent in the commercial domain, where efficiency and standardisation frequently assume greater importance. The findings suggest that both factions are indeed integral to the bridal fashion industry but that their methodologies address distinct market needs: Industry Players produce for the extensive market, and C&T Teachers/Fashion Designers produce for individual, client-centred designs (Smith, 2021; Brown & Taylor, 2023).

4.4 Multi-Purpose Concept Design

The multi-purpose concept of design in bridal wear refers to the integration of diverse design elements from various cultural and stylistic traditions to create bridal attire that reflects both heritage and contemporary fashion trends. This approach combines traditional design concepts, such as those rooted in cultural or ethnic practices, with modern, often European-inspired, aesthetics. The multi-purpose concept of design framework allows for greater personalisation and versatility, catering to brides who wish to honour their cultural backgrounds while embracing global fashion trends.

This hybrid approach has gained popularity as it offers a way to blend the familiar with the new, creating wedding garments that are both meaningful and stylish. It also reflects broader trends in the fashion industry, where cultural fusion and sustainable practices are increasingly valued. By incorporating elements from multiple design traditions, the multi-purpose concept of design

approach ensures that bridal wear is not only a reflection of personal taste but also a celebration of cultural diversity and modernity. In this section, the researcher seeks to find out whether the multi-purpose concept of design in bridal wear would be embraced by the stakeholders in the fashion, clothing, and textile industries. Table 4, however, presents the results obtained from a survey carried out.

4.4.1 Handling of Wedding Gowns Across Different Groups

The Table that explores the different strategies adopted by the different groups regarding their wedding dresses, therefore, provides valuable information on the attitudes and behaviour relating to bridal dress, which in turn reflects broader cultural, social, and professional issues. This paper shall, therefore, discuss the preferences of married, unmarried, historians, C&T educators/Fashion Designers, and industry representatives with wedding dress management.

Table 3: Preference for handling Bridal wear

How Would You Handle Your Wedding Gown	Married	Un-Married	Historians	C&T Teachers/Fash. Designers	Industry Players (GNTDA)
Discard	1 (7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Stored	7 (50%)	3 (18.75%)	2 (40%)	3 (30%)	2 (20%)
Pass it on	3 (21.5%)	3 (18.75%)	1 (20%)	2 (20%)	2 (20%)
Re-use	3 (21.5%)	10 (62.5%)	2 (40%)	5 (50%)	6 (60%)
Total	14(100%)	16 (100%)	6 (100%)	10 (100%)	10 (100%)

It follows that Table 3, the discarding of wedding gowns is a very rare practice, as only 7% of married respondents reported discarding their wedding gowns. No other group (unmarried, historians, C&T Teachers/Fashion Designers, and Industry Players) reported discarding their wedding gowns. This shows that, culturally and sentimentally, wedding gowns are treated with importance across all groups in a way that resonates with the concept that bridal attire is emotionally and symbolically important.

Storing wedding gowns is the most common option among married people, as 50% decided to preserve their gowns. Such behaviour probably reflects the traditional views on wedding gowns as a kind of heirloom or keepsake, preserved for reasons of their sentimental value or possible future use. Historians also respond with a relatively high preference for storing gowns, 40%, which can be attributed to the professional interest in the preservation of historical artefacts. However, a smaller percentage of singles (unmarried), C&T Teachers/Fashion Designers, and Industry Players keep the gowns; this therefore means that in their view, such a gown may not be as much of a keepsake, or they would rather find other, more useful ways of reusing them.

Passing on the wedding dress to people like the next generation or friends stands at a mid-level of interest across boards, with prevalence ranging from 18.75% to 21.5%. The practice holds a mix of emotional attachment with utilitarianism for the gown to serve a purpose that lives beyond the initial

occasion of marriage. That will further imply recognition of the gown's importance, either as a symbolic or as a practical artefact that can be shared within one family or between communities.

Reusing the wedding gown is particularly favoured by unmarried individuals (62.5%) and Industry Players (60%). This preference likely reflects a more modern, practical approach to bridal wear, where the gown is repurposed for different occasions or redesigned for future use. C&T Teachers/Fashion Designers also show a strong inclination towards reuse (50%), which aligns with their professional expertise in garment redesign and sustainability.

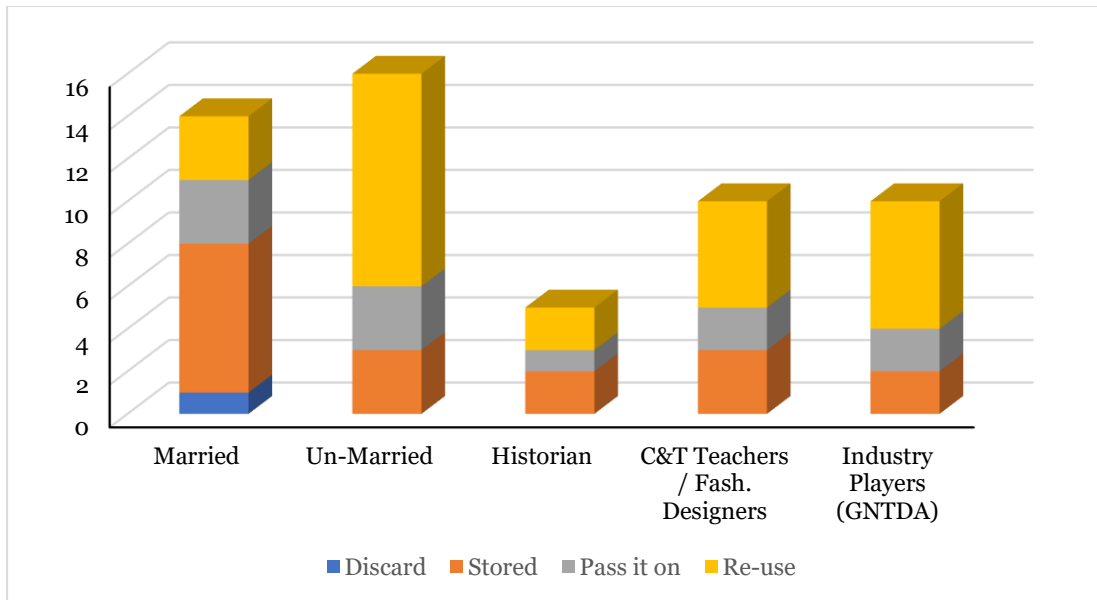


Figure 46: Management of Bridal Wear

Source: Author

The exploration of diverse views on wedding gown management among various demographic groups reveals that married respondents have a stronger intention to preserve their gowns, representing traditional views of the gown as an emotional heirloom. Unmarried individuals and professionals, such as industry representatives and teachers in clothing and textiles and fashion designers, show a stronger interest in remaking the gown, reflecting a shift toward practicality and sustainability. The slight reluctance towards the disposal of gowns, observed across all demographics, spoke to the cultural and emotional value associated with a bridal garment, but also an increasing awareness of sustainable methodologies within the fashion industry. These results illuminate the shifting dynamics of bridal gown management practices framed by a combination of conventional beliefs and contemporary sustainability issues.

4.4.2 Summary of Discussion

The analysis of how wedding gowns are processed by different groups says a good deal about cultural practices, sustainability awareness, and generational values associated with bridal wear. Among these groups that were analysed (married and unmarried, historians, C&T Teachers/Fashion Designers, and Industry Players), distinct patterns emerge, reflecting both traditional sentiments and modern, practical approaches to the preservation and reuse of bridal gowns.

Married ones have a very high tendency to preserve their wedding gowns; 50% voted for this action. This may perhaps indicate that the wedding gown has been typically thought of as a sentimental keepsake or even heirloom in nature, a symbolically charged artefact both in family and cultural life. Unmarried persons tend more to reuse the gowns; 62.5% reported such practical behaviour. This preference suggests, therefore, that there is a trend of sustainability and resourcefulness among younger or more modern demographics in step with current fashion trends for versatility and ecological sensitivity (Green & Lee, 2023).

In addition, there are behavioural differences between historians, C&T Teachers/Fashion Designers, and Industry Players: the first group uses storage 40% and reuses 40%, reflecting perhaps their professional interest in preservation and historical continuity. The C&T Teachers/Fashion Designers are more directly involved in the education of fashion innovation and sustainability; hence, the tendency is towards reuse at 50%, thus showing more care for the elongation of the life cycle of clothes. For Industry Players, similarly tuned to market demands and sustainability trends, the highest preference goes to reuse at 60%, reflecting practicality that aligns with both economic and environmental considerations.

This is further supported by the small number of respondents (7%) among married respondents and none among the others who said they would discard their wedding dresses. Such discarding is part of a larger cultural throwaway mentality, but can also reflect a greater disposition to revalue and preserve personal and cultural artefacts.

In all, the data indicate a complex interaction of tradition, practicality, and sustainability in handling wedding dresses. Whereas traditional positions remain strong in some groups, there is a rising trend toward reuse among the younger and professional demographic. This trend, besides reflecting a changing attitude toward fashion and consumption, also reflects a greater socio-cultural shift toward sustainability and resourcefulness in the treatment of personal and cultural artefacts.

4.4.3 Expertise in Designing Multi-Purpose Bridal Wear

Expertise in designing multi-purpose bridal wear among the Clothing & Textile Teachers/Fashion Designers and Industry Players offers useful insight into how specialised knowledge and skills are spread around within the industry. The prevalence and implications within the two groups for the bridal wear sector are as follows.

Table 4: Expertise in designing multi-purpose Bridal wear

Expertise in designing multi-purpose bridal wear	C& T Teachers/ Fashion Designers	Industry Players (GNTDA)
Yes	7 (70%)	9 (90%)
No	3 (30%)	1 (10%)
Total	10(100%)	10(100%)

With reference to the prevalence of expertise among C&T Teachers/Fashion Designers regarding the design of multi-purpose concept bridal wear, 70% of the C&T Teachers and Fashion Designers indicated expertise. This high percentage is indicative of the wide-ranging knowledge base and specialised skills associated with educational and design professionals. For instance, C and T Teachers are most likely familiar with various notions of design concepts due to their academic training and exposure to various design methods. Their role in educating designers of the future requires a deep understanding of multi-purpose concept design. In that regard, they can include both traditional and modern elements in their teaching and design practice curricula. This means 30% do not have expertise in multi-purpose concept bridal wear and could be those fashion designers specialising in other lines of work, or have not yet fully developed this particular skill set. This segment may also just be more involved with other areas of fashion, such as ready-to-wear or haute couture, which do not necessarily require the same level of expertise in multi-purpose concept bridal design.

On the level of expertise in the Industry, the level of expertise is even higher among industry players in the design of multi-purpose concept bridal wear, as 90% of the GNTDA affirm their capabilities. An overwhelming majority reflects positively upon the professional's preparedness to meet contemporary demand from a wide variety of bridal clients. The fashion industry, especially the commercial players, has to meet emerging consumer tastes oriented toward bridging their designs into a single bridal wear, including traditional and modern or cultural influences. The remaining 10% of Industry Players may include businesses that operate in niche markets with little demand for multi-purpose concept design or may instead be specialists in another section of garment production. However, given the high demand for both bespoke and varied bridal wear, it would logically follow that there would be good market pressure on those professionals to either learn or refine their skills in multi-purpose concept design.

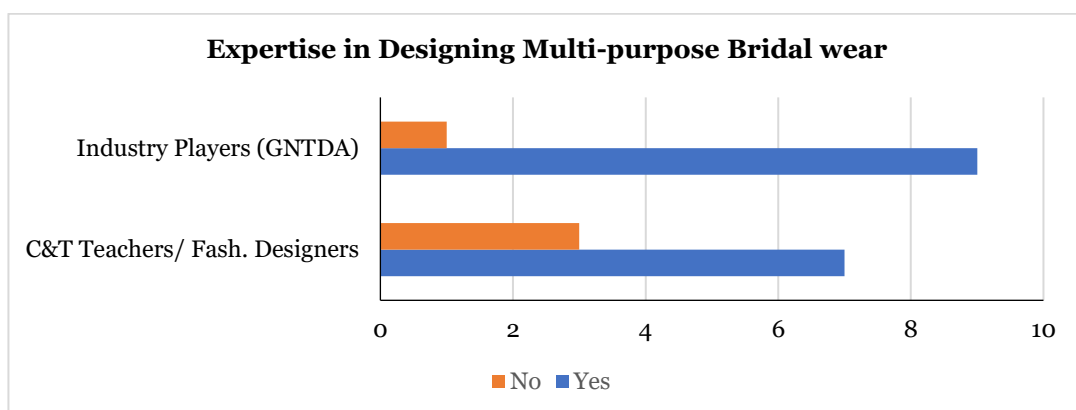


Figure 47: Multi-Purpose Concept Bridal Wear

Source: Author

Comparing the two groups, Industry Players reveal a higher share of multi-purpose concept bridal wear design expertise (90%) of Industry Players, against 70% of C&T Teachers/Fashion Designers. Such a difference could be explained by the particular conditions of the work being done; for example, Industry Players have to cope directly with market demands and different kinds of client

needs. Their expertise reflects the pragmatic experience obtained through constant contact with customers and the need for creative adjustments to trends. While C&T Teachers/Fashion Designers may possess a very high level of expertise, it is not necessarily related to multi-purpose concept design in everyday practice, in cases when one is engaged either with theoretical activities, education, or very narrow design niches. Still, their high level of expertise underlines the importance of multi-purpose concept design in the context of bridal fashion.

4.4.4 Summary of Discussions

The data indicates that expertise in multi-purpose concept bridal wear design is high among the C&T Teachers/Fashion Designers and Industry Players, especially within the latter group. Proficiency would be important in answering the changing demands of bridal clients who desire to have custom-made and various design elements in the wedding attire. Results show that C&T Teachers/Fashion Designers are better equipped with the relevant skills, although Industry Players are more likely to possess higher expertise, probably because of their direct interaction with the market and customer expectations. This trend justifies the continuing need for comprehensive design education and work experience for one to remain relevant in the competitive bridal wear industry.

4.4.5 Multi-purpose use of bridal gowns

This section examines the multi-purpose use of bridal gowns in Ghana among various professional categories, including fashion designers, industry players, and married and unmarried individuals. It explores modifications, preferences, design, complexity, and recommendations for different occasions. The findings can inform industry practices and help professionals adapt to changing trends in the fashion and wedding industry. Table 6 presents the results and key findings on the multi-purpose concept of Bridal gowns in Ghana.

Table 5: Responses on Multi-purpose use of Bridal gown

Multi-purpose use of a Bridal gown	Options	Fashion Teachers		Industry Players		Cohen's Kappa _(k)
		N	%	N	%	
		Received the bridal gown for modification from the couple	Yes	7	70	
No	3	30	5	50		
Multi-purpose bridal gowns have several uses beyond weddings	Yes	9	90	8	80	.100
	No	1	10	2	20	
There is a growing demand for multi-purpose bridal wear in the market.	Yes	8	80	7	70	.110
	No	2	20	3	30	
Multi-purpose bridal wear aligns with contemporary fashion trends.	Yes	9	90	8	80	.101
	No	1	10	2	20	
Bridal designers prioritise versatility when creating gowns.	Yes	7	70	9	90	.231
	No	3	30	1	10	
Multi-purpose bridal gowns retain elements of traditional bridal aesthetics.	Yes	6	60	5	50	.113
	No	4	40	5	50	

Recommend a bridal gown for different occasions	Yes	10	100	9	90	.213
	No	0	0.0	1	10	

The data presented in Table 5 sheds light on the multi-purpose use of bridal gowns within the fashion industry. It reveals intriguing insights into the perspectives of both Fashion Designers and Industry Players regarding the versatility and demand for these garments. Fashion Designers and Industry Table 6 presents the results and key findings on the multi-purpose concept of Bridal gowns in Ghana.

Table 6: Willingness to Receive Bridal Gowns for Modification

Bridal Gowns for Modification	Options	Fashion Teachers		Industry Players		Cohen's Kappa _(k)
		N	%	N	%	
		Received the bridal gown for modification from the couple	Yes	7	70	
No	3	30	5	50		
Multi-purpose bridal gowns have several uses beyond weddings	Yes	9	90	8	80	.100
	No	1	10	2	20	
There is a growing demand for multi-purpose bridal wear in the market.	Yes	8	80	7	70	.110
	No	2	20	3	30	
Multi-purpose bridal wear aligns with contemporary fashion trends.	Yes	9	90	8	80	.101
	No	1	10	2	20	
Bridal designers prioritise versatility when creating gowns.	Yes	7	70	9	90	.231
	No	3	30	1	10	
Multi-purpose bridal gowns retain elements of traditional bridal aesthetics.	Yes	6	60	5	50	.113
	No	4	40	5	50	
Recommend a bridal gown for different occasions	Yes	10	100	9	90	.213
	No	0	0.0	1	10	

Players, comprising a significant portion of the surveyed population, showcased a considerable willingness to receive bridal gowns for modification. Specifically, 70% of Fashion Designers and 50% of Industry Players reported their engagement in such practices, indicating a prevalent trend within the industry.

Moreover, an overwhelming majority of both Fashion Designers (90%) and Industry Players (80%) acknowledged the myriad uses of multi-purpose bridal gowns beyond weddings. This acknowledgement underscores a shift in perception, with these professionals recognising the potential for bridal gowns to serve various functions beyond their traditional role. The data further indicates a growing demand for multi-purpose bridal wear in the market, with 80% of Fashion Designers and 70% of Industry Players attesting to this trend. This growing demand is seen as reflective of contemporary fashion trends, with 90% of Fashion Designers and 80% of Industry Players affirming that multi-purpose bridal wear aligns with modern style sensibilities.

Interestingly, when questioned about the prioritisation of versatility in the creation of bridal gowns, responses were slightly varied. While 70% of Fashion Designers agreed that versatility is paramount, a higher proportion of Industry Players (90%) echoed this sentiment, emphasising the importance of adaptability in garment design. Furthermore, there appears to be a balance struck between retaining traditional bridal aesthetics and embracing versatility. Sixty per cent of Fashion Designers and fifty per cent of Industry Players noted that multi-purpose bridal gowns still retain elements of traditional bridal aesthetics, suggesting a fusion of classic and contemporary design elements. Perhaps most compellingly, the data highlights a strong endorsement of recommending bridal gowns for different occasions. A unanimous 100% of Fashion Designers and 90% of Industry Players revealed their inclination towards suggesting bridal gowns for diverse events, further solidifying the notion of multi-purpose use within the industry.

The analysis of Cohen's kappa (κ) values for each question yielded results indicative of a moderate strength of agreement among respondents, as defined by Sun (2011). Cohen's kappa (κ) values, which quantify the proportion of agreement beyond the chance agreement, were found to be equal to or above 0.1 for all questions examined. In this context, a kappa (κ) of 0.1 and above is considered to demonstrate a moderate level of agreement, suggesting that respondents' opinions align to a noteworthy extent beyond what would be expected by random chance. These findings provide confidence in the reliability and consistency of the responses obtained for each question in the study. The findings underscore a notable inclination towards the adoption and promotion of multi-purpose bridal wear within the fashion industry. This trend reflects a broader shift towards versatility and adaptability in garment design, signalling exciting prospects for the future of bridal fashion.

4.4.6 Style preference for bridal wear

The Table shows a comparison of the preferences for wedding garment design concepts between two different groups: married and single people. Three different design ideas may be identified from the preferences: Traditional, European, and a hybrid of both Traditional and European (Multi-purpose concept). The overall choice of each group is shown as a percentage to illustrate how popular each design idea is in comparison.

Table 7: Style preference for bridal wear

Category	Traditional concept	European concept	Traditional & European concept
Married	5 (36%)	2 (14%)	7 (50%)
Un-married	6 (37%)	0 (0%)	10 (63%)

The study indicates that married and single people have similar preferences for the Traditional concept, 36% of married people and 37% of single people like this approach. This resemblance indicates that classic design features are still quite popular across a variety of demographic groups, independent of marital status. Bridal traditions have their origins in cultural and family practices, which might account for their enduring appeal. The same percentages show that people who are married or single appreciate the timeless appeal and cultural importance of traditional bridal attire,

which is consistent with research showing that cultural heritage is often a major factor in wedding ceremonies (Taylor, 2020).

The European concept is less popular, particularly among single people who express no preference for this look (0%). Married people also show a comparatively modest preference (14%). This shows that designs that either firmly adhere to traditional aesthetics or integrate traditional and contemporary aspects are more popular than European-style wedding dresses, which may be seen as more modern or alien. The lack of interest in European designs could indicate a greater propensity for culturally relevant looks, especially among younger singles who would value preserving their cultural identity while making wedding-related decisions (Green & Lee, 2023).

The two groups have the greatest preference for the Multi-purpose concept design, which blends European and Traditional components. Unmarried people are more fond of this strategy; 63% of them say they would rather combine many types, compared to 50% of married people. The demand for a multi-purpose concept design demonstrates a tendency toward personalisation and the blending of contemporary and cultural elements. More customisation is possible with this hybrid approach, allowing people to combine both traditional beliefs and modern fashion trends into their wedding attire. In line with larger fashion trends that value uniqueness and variety, the increasing number of single people implies that younger generations may be more receptive to innovation and fusing many cultural influences (Smith, 2022).

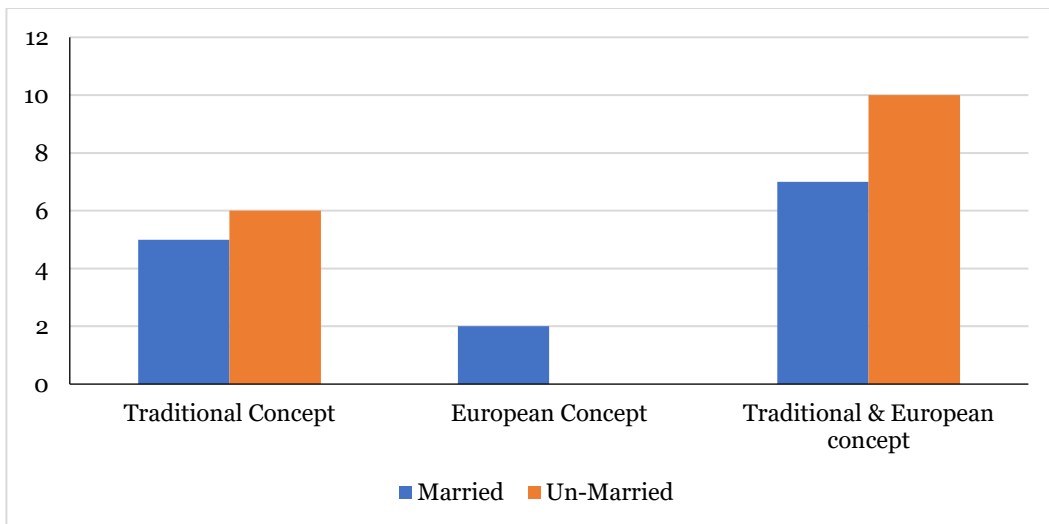


Figure 48: Style Preference of Bridal Gowns

Source: Author

The comparison investigation demonstrates that married and single people have different preferences, with single people leaning more toward the Multi-purpose concept design. This pattern could point to a generational change in which younger, single people are more open to incorporating other ethnic and contemporary themes into their wedding attire. On the other hand, married people have a deeper loyalty to conventional ideas even if they still express a great deal of interest in a hybrid design. The study indicates that hybrid designs, which combine parts of European and traditional design, are becoming more and more popular, even if traditional designs still have a significant

following. The need for a more customised and distinctive wedding experience, as well as the growing internationalisation of fashion, may be the driving forces behind this change.

The table of the study reveals how wedding wear design tastes are changing, with multi-purpose concept designs that combine traditional and European elements becoming more and more popular. This tendency is particularly noticeable among single people, suggesting a potential generational shift toward increased personalisation and blending of cultural influences. The fact that both groups consistently choose traditional patterns highlights the continuing value of cultural legacy in wedding dress, but the low preference for exclusively European conceptions raises the possibility that these groups are not as drawn to foreign trends on their own. All things considered, the data indicate that the wedding fashion scene is a dynamic one, with tradition and contemporary becoming more and more entwined to satisfy a wide range of customer tastes.

4.4.7 Summary of Discussions

The bridal wear business is undergoing a change in viewpoint, with a noticeable interest in multi-purpose designs. Clients' active engagement, along with a realisation of the importance of sustainability, signals a promising path for the sector. This trend towards sustainability in bridal attire may not only suit consumer needs but also contribute to a more eco-conscious future for the business. The study results reveal a rising interest in multi-purpose design concepts across the bridal wear sector. The inclination for traditional design styles and customer interaction demonstrates the necessity of integrating history with innovation. The considerable number of responders with experience in creating multi-purpose gowns highlights the adaptability and diversity of the business.

4.5 Sustainability of Wedding Gowns

Sustainability in the fashion industry has become a major talking point and indicates a wider societal pattern toward more environmentally conscious and ethical consumption. These analysed data are useful for understanding what different stakeholder groups prioritise when it comes to sustainable bridal wear design. The Table displays information on the attitudes and actions of single and married people about how sustainability affects wedding gown purchases. The study focuses on several factors, such as how buying choices are affected by sustainability, how sustainability and social status are related, peer pressure, lifestyle, and self-image.

Table 8: Responses on the Sustainability of Wedding Gowns

Responses	Married		Un-Married	
	F	%	N	%
Sustainable gown influences the buying of any gown	10	71%	16	100%
I will buy a sustainable gown at the expense of my social status	14	100%	15	94%
Regardless of my lifestyle, I will buy a sustainable gown	14	100%	16	100%
Irrespective of peer influence, I will go for a sustainable gown	10	71%	15	94%

It may affect my image, but I prefer a sustainable gown	13	93%	13	81%
I will attach much value to sustainable gown	12	86%	16	100%
I will always repel info that is against the sustainable gown	10	71%	13	81%
I will feel comfortable with sustainable gown usage	14	100%	16	100%
I feel proud to purchase a sustainable gown	12	86%	14	87.5%

Despite 100% of respondents saying that sustainability has an impact on their shopping decisions, the data shows that sustainability has a substantial effect on wedding gown purchases, especially among single people. On the other hand, 71% of married people say that sustainability affects their purchasing decisions. This discrepancy implies that single people could be more aware of or affected by contemporary sustainability trends, which is consistent with larger social movements among younger generations to become environmentally concerned (Jones & Thompson, 2022). The lower proportion among married people can be a reflection of more conventional or established buying habits, where sustainability is only one of several considerations taken into account.

Regardless of socioeconomic standing, both groups demonstrate a strong readiness to buy a sustainable gown: 94% of single people and 100% of married people concur. According to the findings, there is a strong commitment to sustainability even in situations when it would go against societal norms or expectations. The little difference between the groups could be the result of single people being more aware of their social standing and more worried about how their choices in clothing will be seen by their peers (Smith, 2021).

Irrespective of their lifestyle, married and single people strongly support buying sustainable wedding dresses; 100% of both groups agreed with this statement. This consistency points to sustainability as a top concern across a range of lifestyle options, indicating a larger cultural trend towards environmentally responsible consumerism (Anderson & Williams, 2023). When it comes to peer influence, the evidence diverges: 71% of married people and 94% of single people say that peer influence does not affect them. This implies that married people may be more influenced by their peers when making decisions, maybe as a result of established social networks or expectations within these circles.

Purchasing sustainable wedding dresses is something that both married and single people are quite proud of, with over 85% of both categories expressing this sentiment. On the other hand, married people (93%) are more inclined than single people (81%) to choose a sustainable gown even if it has a negative effect on their personality. This disparity might suggest that married people, who could be more established in their social positions, are more interested in the intrinsic worth of their purchases and less concerned with their image (Green & Lee, 2022).

The fact that both groups agree to feel at ease wearing eco-friendly dresses highlights how widely accepted and normalised eco-friendly wedding wear has become. There is, however, a little disparity in the perceived worth of sustainable gowns: 100% of single people place a higher value on them than

86% of married people. This variance might be explained by generational variations, since younger, single people may be more in line with modern ideals that place a greater emphasis on environmental responsibility (Taylor, 2020).

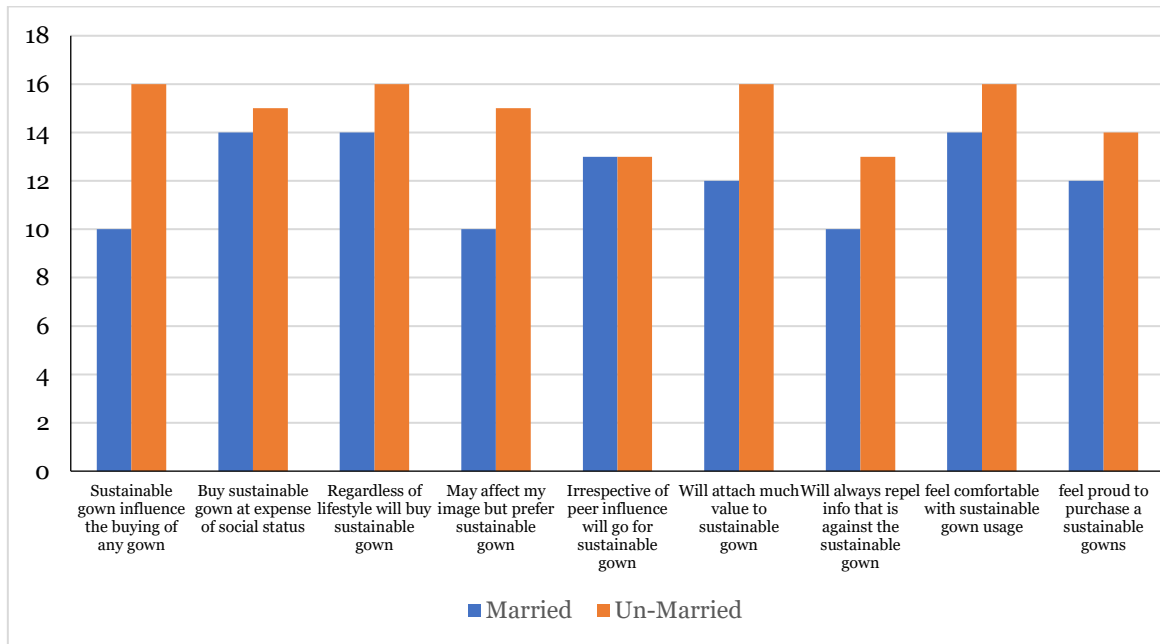


Figure 49: Sustainable Wedding Gown

Source: Author

Although married and single people strongly favour sustainable wedding dresses, according to the comparison study, there are subtle variances in how each group ranks sustainability in other aspects, including social standing, peer influence, and self-image. Unmarried people are more committed to sustainability overall, which may be a result of modern attitudes and generational effects. While they are also proponents of sustainability, married people exhibit a more nuanced approach to decision-making, taking other social and personal aspects into account. These results demonstrate how sustainability is becoming more and more important in wedding fashion for a variety of demographic groups, which may have consequences for marketers and designers trying to appeal to these wide-ranging tastes. The relevance of sustainability in the wedding fashion business is shown by this comparative study, which also implies that as customer knowledge and demand increase, future trends will probably continue to reflect environmental principles.

4.5.1 Stakeholders' Perspective on Sustainable Bridal Gown

This section explores the perspectives of various stakeholders on the concept of a sustainable bridal gown. This approach includes input from a diverse group of users, such as fashion designers, clothing and textile educators, industry representatives, historians, and both married and unmarried individuals. Each group provides a unique viewpoint, shaping the design process with insights on cultural relevance, functionality, durability, and environmental impact. The responses from these groups are summarised in Table 9, providing a comprehensive view of how each stakeholder's unique perspective shapes the sustainable bridal gown concept.

Table 9: Stakeholders' Perspective on the Sustainability of Bridal Wear

Groups	Sustainability of bridal wear design			
	Frequency	Percentage	Frequency	Percentage
	(Yes)	(Yes)	(No)	(No)
Fashion Designers/ C&T Teachers	7	70%	3	30%
Industry players (GNTDA)	8	80%	2	20%
Historians	5	100%	0	0%
Married	10	71%	4	29%
Un-married	16	100%	0	0%

Table 8 shows that 70% of fashion designers and clothing & textile teachers think sustainable bridal wear design is needed. This group, very much involved in the creative and educational side of fashion, knows the importance of integrating education on design and industry standards. 30% may be held back by perceived costs, limited sustainable materials, or bounded rationality to a full understanding of the benefits of sustainability. However, 80% of industry players agreed that sustainable bridal wear design must be focused on. This is a growing recognition of the economic and brand benefits of sustainability. Fashion establishments have started to realise that sustainability can boost brand image, meet consumer demand, and potentially save long-term costs through better resource use. All historians agree with sustainable wedding dress design; they get it, they know the long-term effects of fashion on social, cultural, and environmental contexts, and support resource conservation and moral production.

Among married individuals, 71% support sustainable bridal wear design. This group likely values sustainability for its ethical and environmental benefits, which align with broader trends in consumer behaviour towards eco-friendly products. Traditional views of wedding attire or concerns about the cost and availability of sustainable options may influence the 29% who do not prioritise sustainability. All singles (unmarried) support (100% sustainable wedding dress design, so younger or future brides and grooms are more aware of global sustainability and will make ethical choices when buying. The table analysis highlights a clear consensus among diverse stakeholder groups on the importance of sustainable bridal wear design. Fashion designers, industry players, historians, and consumers, both married and unmarried, overwhelmingly support the integration of sustainability into bridal fashion.

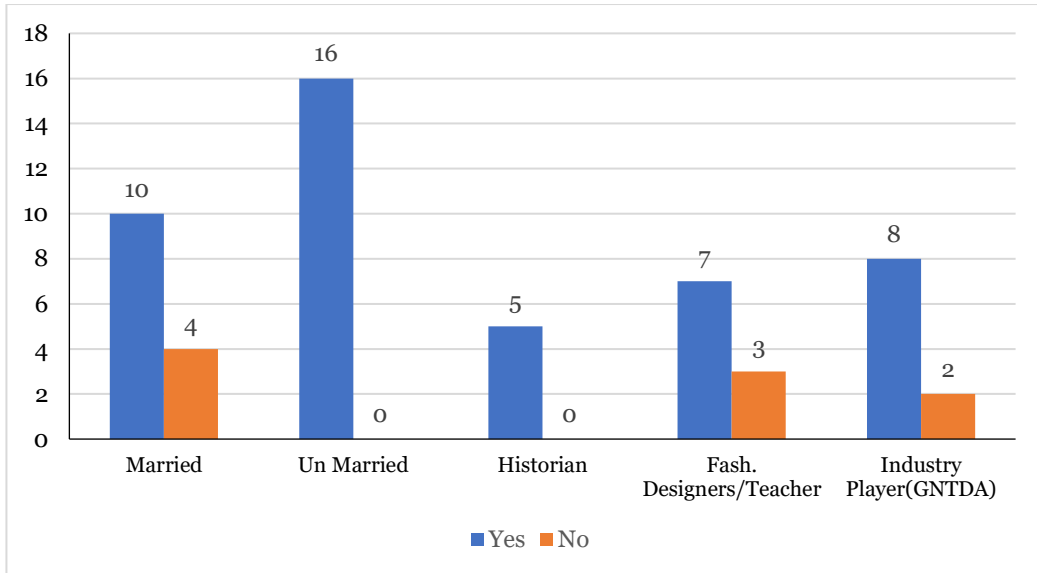


Figure 50: Stakeholders' Perspective on Sustainable Bridal Wear

Source: Author

This trend in Figure 50 reflects a broader shift in the fashion industry towards eco-friendly practices and the growing demand for products that align with ethical and environmental values. The insights gained from this analysis underscore the necessity for the bridal wear industry to adopt sustainable design principles, ensuring that future designs meet both aesthetic and ethical standards.

4.5.2 Summary of Discussions

The analysis of the tabular data indicates that, though to varying degrees, sustainability plays a noteworthy role in the choices made by married and unmarried individuals while selecting wedding dresses. Single people are more likely to be impacted by sustainability in a variety of ways, which is consistent with larger cultural shifts toward eco-awareness and moral consumption. While they are just as supportive of sustainability, married people are a little more worried about peer pressure and social standing. These results imply that while people generally embrace and respect sustainability, their level of priority for sustainable options when choosing their wedding attire might be influenced by demographic characteristics like age and marital status.

Chapter | 5

User-Centred Design (USD) Practice Workshop

5.1 Introduction

The rationale for this chapter arises from the findings, discussions and analysis that reveal a clear consensus among the sample respondents of the study population, underscoring a strong and growing demand for multi-purpose bridal wear that responds to contemporary fashion and cultural sustainability. This chapter operationalises the findings by employing a User-Centred Practice Workshop to co-create a prototype multi-purpose traditional bridal gown that is firmly rooted in user experience and cultural values, using kente wrapping techniques.

The theme for the Workshop is “**WRAPPED IN PRIDE**”. The Ghanaian kente wrapping technique is an excellent technique of promoting culturally sustainable bridal wear, because this technique of wrapping limits the fabric from being cut into several pieces for construction into bridal wear. This approach, in a nutshell, provides the opportunity for the cloth to be reused for different clothing items. The workshop is seeking to use wrapping techniques to co-create a Bridal gown that is convertible to the following clothing items:

- Party outfit
- Cocktail attire
- Beachwear
- Morning coat

This workshop constituted a core component of the user-centred design (UCD) methodology adopted in this PhD. The research is grounded in a practice-based and qualitative paradigm, recognising design as a mode of inquiry through which knowledge is generated through experiment, bodily engagement, and reflection (McBee-Black, 2022). Within this framework, the workshop was conceived not as a validation exercise but as a knowledge-producing methodological intervention that allowed prospective users to actively shape and critique the design proposals (Marti & Bannon, 2009).

The workshop was conducted at King Arthur Vocational Training Centre, Kumasi, Ghana. Kumasi is the research demographic location. The workshop was structured into five (5) sequential phases:

Phases 1: Technical Introduction to Kente Wrapping

Phases 2: Co-Creation and Material Experimentation

Phase 3: Development of Concept Sketching of Bridal Gown

Phases 4: Multi-Purpose Transformation Exercise

Phases 5: Group Reflection, Evaluation and Feedback Session

A total of 10 unmarried women participated in the workshop. This group was deliberately selected through purposive sampling, as unmarried women represent the primary future users of bridal garments and are therefore best positioned to articulate aspirations, concerns, and expectations

regarding wedding attire (Tordzro, 2021). The sample size aligns with qualitative and generative design research norms, where depth of engagement and richness of insight take precedence over statistical representation (Wilkinson & De Angeli, 2014). Participants were not positioned as research subjects, but as active contributors to the design of knowledge, engaging through experimentation with folding, draping, and collective reflection on perceptions of usability, cultural resonance, and sustainability (Goodale et al., 2012).

5.1.1 Phase 1: Technical Introduction to Kente Wrapping

Participants were introduced to the technical principles of kente wrapping as a non-destructive construction method and discussed fabric orientation, fastening techniques, and comfort considerations. This phase establishes the scope and considerations of the workshop to frame wrapping as a sustainable alternative to cut-and-sew garment construction. This phase also sought to elicit participants' embodied self-concept, personal values, and cultural identity in designing MPBG through kente wrapping. Through facilitated prompt exercises, participants articulated the emotional, symbolic, and practical essence of exploring kente wrapping (Dogbe, 2003). This activity generated baseline data on cultural values, perceived redundancy of bridal garments, and expectations of reuse.



Figure 51: Technical Introduction Session

Source: Author

5.1.2 Phase 2: Co-Creation and Material Experimentation

Participants used the sample cloth provided by the researcher to experiment with different silhouettes through wrapping. This hands-on phase functioned as the primary site of data

generation, revealing how users negotiate stability, aesthetics, comfort, and cultural expression when designing with intact cloth (Imbuwa & Celikkol, 2024).



Figure 52: Co-Creation and Material Experimentation

Source: Author

The researcher's position as a facilitator helped shape the co-creation process by intermittently asking questions for more insight. Annotated sketches, notes, photographs, and videos of the various silhouettes that were experimented with were systematically recorded. The annotated sketches, in particular, were fine-tuned into Concept drawings to serve as a guide for easy transitions of the wrapping process to different designs. The study further developed a moodboard as an additional tool to inspire the development of the concept sketches.



Figure 53: Moodboard

Source: Author

5.1.3 Development of Concept Sketching of Bridal Gown

With the aid of the data gathered, particularly the annotated sketches from the co-creation and experimentation session, the study developed preliminary designs in a fashion sketch book to guide subsequent meetings for continued development until the final sketches emerge. The preliminary drawing was validated by the participants. Figure 54 -56 Preliminary sketches of the study

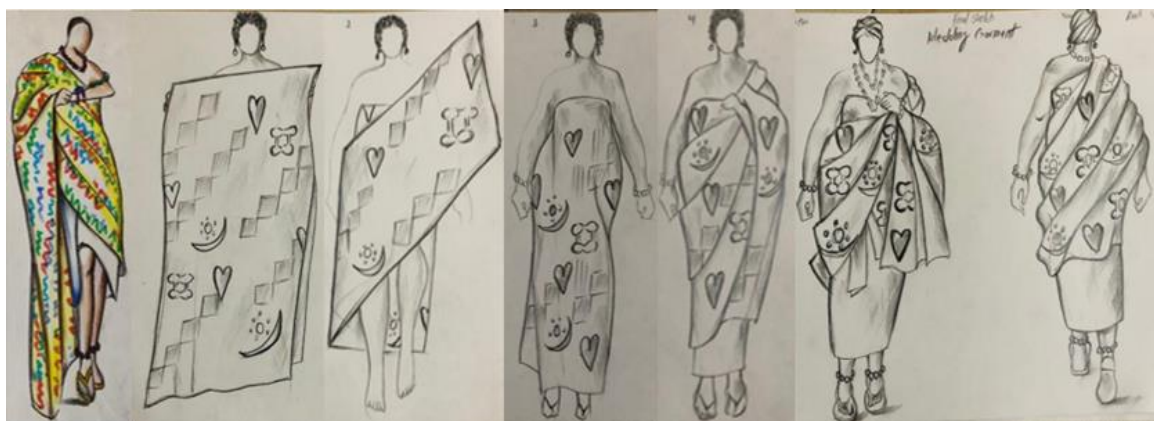


Figure 54: Transformational sketches of a traditional bridal gown

Source: Author



Figure 55: Transformational sketches of Cocktail Dress

Source: Author

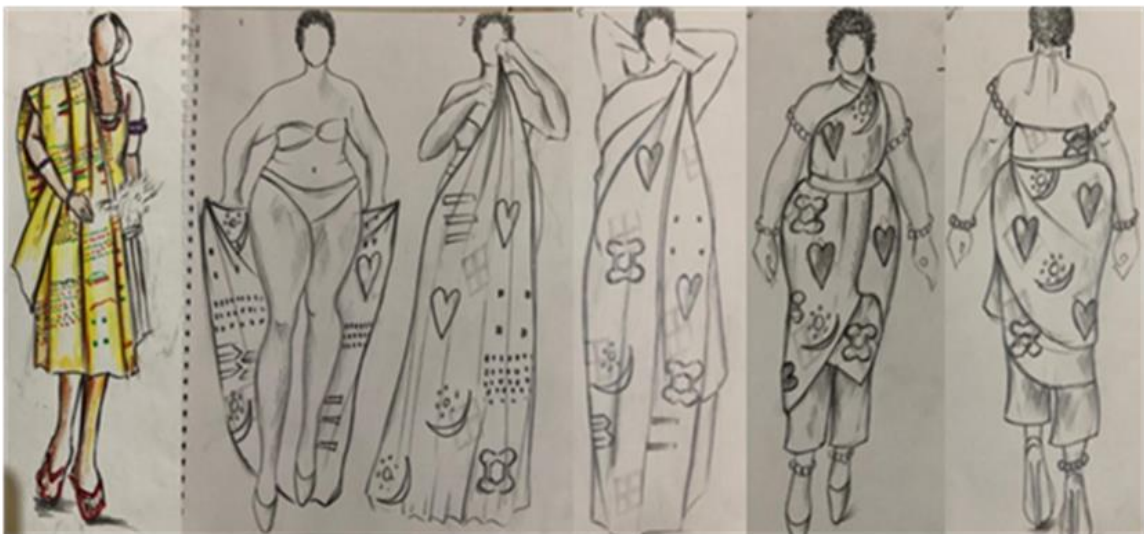


Figure 56: Transformational sketches of Party Wear

Source: Author

5.1.4 Phase 3: Multi-Purpose Transformation Exercise

This phase establishes the final realisation of the UCD Co-creation and experimentation session. Participants worked in groups to transform their wrapped bridal forms into four post-wedding garment categories: party outfit, cocktail attire, beachwear, and morning coat. This phase directly tested the multi-purpose design hypothesis, documenting time, ease of transformation, and perceived appropriateness of each configuration. Transforming wrapped bridal forms took an average of 5–10 minutes for party outfits and beachwear, 12–15 minutes for cocktail attire, and 15–20 minutes for morning coats; participants rated beachwear and party outfits easiest to transform, and all configurations were considered culturally and aesthetically appropriate. **Figure 57-58** multi-purpose transformation sequence Exercise.



Figure 57: Multi-purpose transformation sequence Exercise

Source: Author



Figure 58: Multi-purpose transformation sequence Exercise

Source: Author

5.1.5 Phase 5: Group Reflection, Evaluation and Feedback Session

A group reflection session concluded the workshop, during which participants critically evaluated the kente wrapping approach in relation to usability, social acceptance, sustainability, and cultural significance. Participants expressed strong appreciation for the adaptability and cultural relevance of the wrapping technique, affirming its potential as a sustainable alternative to conventional bridal gown construction.

However, participants also identified several constraints that shaped their engagement:

- Limited workshop duration restricted opportunities for deeper experimentation with more complex fabrics and advanced wrapping variations.
- Participants further emphasised the need for broader advocacy and public sensitisation to enhance societal acceptance and understanding of culturally sustainable bridal practices.

- Additionally, the absence of honoraria was noted, with participants suggesting that modest compensation would enhance motivation and acknowledge the value of their time and creative input.

These reflections provided critical user-generated insights that informed subsequent design refinements and strengthened the theoretical interpretation of the findings, reinforcing the effectiveness of the User-Centred Design (UCD) approach while identifying practical considerations for future workshops.

5.2 Mapping Workshop Outcomes to Research Objective

The workshop directly addressed the PhD's core research objectives as follows:

- Research objective 2: To explore the multi-purpose concept of product development and design sustainable bridal gowns through user-centred design (USD) with the Kente Wrapping Technique

Outcome: The User-Centred Design (UCD) engagement revealed that participants were able to generate elaborate and aesthetically refined bridal forms through kente wrapping techniques without cutting the cloth. This outcome confirms the cultural and material sustainability potential of kente wrapping as a viable design strategy for developing multi-purpose bridal gowns. By eliminating irreversible cutting, the technique preserves textile integrity, enables garment reconfiguration for multiple post-wedding uses, and directly addresses the functional redundancy associated with conventional single-use white bridal gowns.

5.3 Critical Reflection and Limitations UCD Workshop

While the workshop generated rich and contextually grounded qualitative insights, several limitations warrant consideration. The relatively small and geographically specific participant group restricts the extent to which the findings can be generalised beyond the immediate study context. In addition, participants' prior familiarity with kente wrapping as a culturally significant practice may have influenced their perceptions of the wrapping technique, potentially shaping responses in a favourable direction. Nevertheless, these limitations are counterbalanced by the methodological strengths of the workshop, including its transparency and generative design approach (Gulliksen et al., 2003).

More broadly, the workshop demonstrates the capacity of practice-based, user-centred methods to produce empirically grounded design knowledge within fashion design research. The integration of generative interviews vis-à-vis experimentation and collective cultural reflection enabled participants to articulate inherent knowledge that would be difficult to capture through conventional research methods alone. As such, the methodology offers an applied and adaptable model for investigating sustainability through indigenous design practices, particularly within culturally situated contexts where user values are central to sustainable innovation.

5.4 Fabric Selection

Building on prior experience and knowledge of various fabric orientations and drapability from the preceding phases of the UCD workshop, the designer (researcher) gathered potential sample materials for assessment to ascertain materials that best respond to the wrapping technique without losing their structural integrity. Materials were sourced from textile shops in the Kumasi Kejetia metropolis. **Figure 59:** Sample fabrics collected for experiment



Figure 59: Sample fabrics collected for the experiment

Source: Central Market, Kumasi, Ghana (2024)

These fabric samples were rigorously evaluated in terms of quality, affordability, aesthetics, comfort, relation to Ghanaian culture and drapability. A qualitative approach to fabric performance evaluation was adapted in the selection of the most suitable fabric for the study. Mercerised cotton fabric (unbleached) was purchased as the final fabric in developing the prototype multi-purpose bridal gown. **Figure 60:** final fabric selected for the study.



Figure 60: final fabric

Source: Central Market, Kumasi, Ghana (2024)

The above fabric was selected for its suitability based on rigorous experimentation using sensory evaluation methodology. Sensory evaluation comprises the sense of seeing, touching and feeling (Ahirwar & Behera, 2022).

- i. **Physical Seeing** as a form of performance evaluation approach allows the researcher to see the sheen, colour and to examine the weave, its thickness, and overall appearance, which can give indications about the durability of the fabric.
- ii. **Physical Touching** form of performance evaluation approach, on the other hand, provided the researcher the opportunity to manipulate the fabric to establish how it reacts to tension,

rumpling, or stretching (Pan, 2007). This approach was also crucial to the study because the conversion of the traditional multi-purpose bridal gown will require a fabric that can withstand tension that may result from the different wrapping and techniques.

- iii. **The Physical Feeling** approach of fabric performance evaluation adopted by the researcher was largely to assess roughness, smoothness, softness, or texture. Additionally, it provides a real opportunity to identify whether the chosen fabric has a certain warmth or coolness, *i.e.*, heavy, light, or stretchy (Ahirwar & Behera, 2022).

5.4.1 Fabric Dyeing

Subsequently, the chosen fabric was dyed to achieve a yellow background before the application of selected traditional symbols that carry symbolic meaning and denote the couple's journey and commitment to each other. The study chooses the colour yellow because it represents royalty and the precious minerals such as gold in Ghana. This warm, bright and sunny summer colour (Yellow) is also associated with the powerful energy of the sun (Hutchings, 2004). It creates a warm, cheerful, welcoming and happy mood that will lift the mood of wedding guests. Yellow colour is also camera-friendly as it enhances the skin's glow, making for perfect photography. **Figure 61** shows some images of the dyeing process.



Figure 61: Images of the dyeing process

Source: Author

5.4.2 Motif Selection

After obtaining the yellow background colour, the selected Akan traditional symbols were applied using the screen printing method. These selected symbols were carefully selected by the study because of their significance and the message they carry 'symbolically' in the Akan traditional heritage. The selected symbols, thus: **(a) 'Osram Ne Nsoromma'**, **(b) 'Me Meware Wo'**, and **(c) 'Akoma'**, all tell the story of the couple's journey and commitment to each other in marriage.

(a) Osram Ne Nsoromma: in the Akan language, literally means "moon and star where **Osram** is the **moon**, and **nsoromma** is the **stars**. The image of the symbol portrays a half-moon in a bowl shape with a star slightly dangling within the perimeter of the moon. The moon creates an illusion as if it is trying to catch the star in the sky. Philosophically, it signifies loyalty and steadfastness in one's relationship, as well as finding harmony in the

space of marriage (Wilson et al., 2021). This symbol also reflects the harmony that exists in the relationship between couples. **Figure 62** below shows the Osram ne nsoromma.



Figure 62: Osram ne nsoromma

Source: Muzeja (2009)

(b) On the other hand, the **Me Meware Wo** symbol means that *“I Shall Marry You”*. It communicates commitment and loyalty to a cause. It is in this respect that the study considers choosing this symbol to be incorporated into the printing of traditional, befitting cloth for the traditional bridal gown. Commitment and dedication are core to the success of every union, particularly marriage. From the foregoing, it can be deduced that many couples and yet-to-be couples who place a high value on their union will always want to wear this phrase (**Me Meware Wo**) to communicate the same (Muzeja, 2009)

This symbol is featured with four circles joining each other at the side with two straight lines piercing through each of the two connected circles to form one unitary shape, which denotes the bonding and partnership of two lives (couples). This symbol further expresses the idea of permanence (for better or for worse) and the essence of shared responsibility between couples. (Sterling, 2021). **Figure 63** below shows Me Meware Wo.

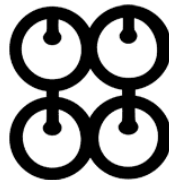


Figure 63: Osram ne nsoromma

Source: Sterling (2021)

(c) Akoma, as explained in the study of (Wilson et al., 2021) That it’s an Akan word that literally means the heart, the Akoma symbol is drawn to show a merge of two hearts that represent shared agreement and lasting love. Although the heart shape image is popularised to mean love across continents. The Akans have further expressed much more meaning to include: patience, endurance, goodwill, faithfulness and understanding and tolerance in marriage, particularly when frustration sets in. The Akoma symbol is very significant in the study, as intimated in the study of (Ofori et al., 2023). It is very popular at weddings throughout Ghana. **Figure 64.** Below shows Akoma



Figure 64: Akoma

Source: Ofori et al. (2023)

5.4.3 Fabric Printing

The study adopted the manual screen-printing methodology in printing the final fabric for the study. Although there are varied methodologies in screen printing that extend from manual to semi-automatic, automated and rotary screen printers (Tuhkala et al., 2019). The study, however, chooses the manual because of its availability in the study setting, Ghana. Screen printing is a versatile method of printing that can be applied to a variety of substrates, including fabric, paper, wood, metals, glass, and plastics. (Abbott et al., 2008).

To achieve high-quality results in the screen-printing process, the study made available all the necessary resources, including printing squeegees, screen, substrate and ink. The printing was carried out at the Textiles Printing Studio of the Department of Textiles Design in the Kwame Nkrumah University of Science and Technology, Ghana.

Before commencing the printing process, a thorough assessment of the equipment in the printing studio was conducted to ascertain its effectiveness and efficiency in achieving a high-quality print. Acceptable printing parameters were also well defined. (Szentgyörgyvölgyi et al., 2018). These parameters include, but are not limited to, the following:

- (a) Properties of the ink
- (b) Squeegee's speed and pressure
- (c) Distance between the screen and the printing substrate, and the
- (d) Ambient conditions

Consequently, the study assessed the wetting behaviour and temperature resistance of the fabric to ensure that it matches the properties of the selected ink. Following the general guidelines, principles and safety protocols of achieving high-quality printing, the final cloth was printed incorporating the selected symbols and colours. **Figure 65** below shows the fabric Printing section of the study.



Figure 65: Fabric Printing section of the study

Source: Author



Figure 66: Final Print for the study

Source: Author

5.4.4 Application of Fasteners and Closures on Final Print Fabric

To achieve a good drape effect for the traditional bridal gown, the study estimates printing six yards of fabric (216" X 44"). The length of the fabric is divided into two halves, making each 3 yards (108 X 44). Typical of this traditional wrap, the two halves are permanently stitched together along the selvedge to increase the width for a more enhanced, fuller and regal wrap. Converting the traditional bridal wrap into different outfits challenges the study to devise a temporal means of joining the fabrics together, such that the two fabrics can easily be separated and used for different clothing items (Cunha & Broega, 2009).

Six yards of fabric will invariably be too much to be used for other clothing items, and to a larger extent, will not foster sustainable consumption of fabric (Suhartini et al., 2020). In this perspective, the study employs the hook and loop (worked) closures techniques of temporal joining, with the two pieces of fabric together for easy separation. Figures 67 and 68 present the application of hook and loop on the print fabric.



Figure 67: Application of hooks

Source: Author



Figure 68: Application of loops

Source: Author

5.5 Prototyping

In the world of clothing, the prototype serves not only as a tool to visualise volumetric solutions and aesthetics, but also helps us verify ergonomic and functional aspects, such as fit, patterns, draping of the materials used, and various comfort-related factors associated with its use (Lin, 2019). By building a product prototype, the designer can confirm the viability of the ideas proposed in a project (Boldt & Carvalho, 2018). The prototyping stage was crucial as it provided an opportunity to enhance

the product before the final version emerged. It also allowed the study to interact realistically with the product alongside focus group members in the clothing manufacturing industry.

As mentioned earlier, the study is anchored in the traditional wrapping techniques of the Ghanaian Kente, and for this reason, the prototyping stage was utilised to demonstrate the transitional process of the multi-purpose traditional gown during the UCD workshop session. This test print sample used in the demonstration shares the same fabric characteristics as the final fabric with respect to its weight, motifs and feel. This approach also prevents messing up the final fabric because the introduction of implements such as chalk and markings, pinning out, and other realignments may have the tendency to ruin the final fabric. (Istook, 2000)

5.6 Evaluating Prototypes

The focus group members involved in evaluating the prototype were 20 participants, which comprised 5 Clothing and Textiles Teachers, 5 fashion designers (industry players belonging to the Ghana National Dress Makers and Tailors Association - GNTDA) who were central to the critical design discussions, alongside 5 married and 5 unmarried couples who participated as key stakeholders. An observation checklist was provided (**Appendix D**). The evaluation session was documented with pictures and video (**Appendix E**)

Focus group members provided very constructive comments and feedback that contributed to refining the final product. The traditional bridal gown was evaluated based on its sustainability, cultural value, innovation, novelty, usefulness, commercial viability, comfort, and aesthetic beauty. Through the researcher's observation, many focus group members were satisfied with the mutable design solution through the Ghanaian Traditional Kente Wrapping Techniques.

5.6.1 Final Design: Wrapping Guide to Traditional Bridal Gown

The visual provided in Figure 69 provides details of a step-by-step wrapping guide for the bridal gown. The four steps provide a clear guide to achieving the bridal gown's sophisticated and polished look, ensuring the bride is draped in elegance for her special day.

The first step begins with draping the primary fabric over the bride's shoulders, ensuring that it falls smoothly and evenly on both sides. The fabric is carefully positioned to accentuate the neckline while allowing room for adjustments in later stages. Next, the gown's bodice is secured by wrapping the fabric around the waist. This step focuses on achieving a snug, form-fitting silhouette that emphasizes the bride's natural shape. The wrapping is done carefully to maintain a seamless appearance and avoid any wrinkles or bunching. Final adjustments to the fit and draping are made, with attention to symmetry and balance, resulting in a flawless presentation of the bridal gown.



Figure 69: Final Wrapping Guide for the Bridal Gown

Source: Author

5.6.1.1 Evaluating the Bridal Gown

Figure 70 below offers a naturalistic view of both the final front and back of the Bridal gown during the open evaluation session



Figure 70: Front and Back of Traditional Bridal Gown

Source: Author

Table 9 provides a detailed evaluation of the bridal gown, analysing key aspects such as sustainability, cultural values, innovation, novelty, usefulness, commercial viability, comfort, and aesthetic. This evaluation highlights the gown's strengths, and it is fundamental for confirming that

the combination of fabrics and design elements achieves a high standard of both beauty and practicality.

Table 10: Judges' evaluation of the bridal gown

Indicators	Observation	Yes		NT		No		Comments
		N	%	N	%	N	%	
Sustainability	Easily convertible for different occasions	7	70	1	10	2	20	Satisfactory
	Used locally sourced materials/resources	10	100	0	0	0	0	
	The dress is designed for long-term use	7	70	2	2	1	10	
Cultural Value	Elements of the dress reflect cultural traditions and heritage	10	100	0	0	0	0	Satisfactory
	The used symbols, patterns, or motifs hold cultural significance.	10	100	0	0	0	0	
	The dress tells a story or conveys a message that resonates with cultural values.	8	80	1	10	1	10	
Innovation	The design is unique and incorporates innovative features	6	60	3	3	1	10	Satisfactory
	The dress can be converted into different styles or outfits	7	70	2	2	1	10	
	There is a detachable trains, or adjustable elements that enhances functionality.	9	90	1	10	0	0	
Novelty	The dress offers a fresh, modern look that captures attention and sets trends.	6	60	2	2	2	20	Satisfactory
	Incorporate unique artistic details	5	50	2	2	3	30	
	The dress has the potential to influence future bridal fashion trends.	7	70	2	2	1	10	
Usefulness	The dress can be adapted for various occasions beyond the wedding day	6	60	3	3	1	10	Satisfactory
	Built-in support structures (corsetry, bra cups) that provide comfort and ease of use.	1	10	1	10	8	80	
	The dress is easy to clean and maintain	9	90	1	10	0	0	
Commercial Viability	The design caters for a diverse range of body types and cultural backgrounds.	10	100	0	0	0	0	Satisfactory
	The dress can be produced at scale without compromising quality or sustainability.	8	80	0	0	2	20	
	The dress can stand out in a crowded market through unique selling points.	7	70	2	2	1	10	

Comfort	The dress allows for proper airflow and ventilation	9	90	1	10	0	0	Satisfactory
	The dress is lightweight enough to wear comfortably for extended periods	9	90	1	10	0	0	
	The dress can easily be adjusted for comfort during the event	8	80	1	10	1	10	
Aesthetical beauty	The design reflects a modern and elegant style	5	50	2	2	3	30	Satisfactory
	The embellishments are well-executed and aesthetically pleasing	10	100	0	0	0	0	
	The colour is appropriate for the occasion setting	7	70	1	10	2	10	

According to the findings from Table 9, the bridal gown (BG) received overwhelmingly positive feedback from the evaluators, who validated the design. This consensus reflects the gown's ability to meet several important criteria, ranging from sustainability and cultural relevance to innovation, functionality, and aesthetic appeal. Sustainability emerged as a strong point, with 70% of participants noting that the gown is versatile and can be easily converted for use on various occasions beyond the wedding day. The gown was also praised for its use of locally sourced materials and resources (100%), as well as for being designed for long-term use, making it both environmentally friendly and practical (70%). These factors indicate that the gown excels in terms of sustainability, aligning with modern expectations for eco-conscious fashion.

When examining the cultural value of the gown, the response was overwhelmingly positive, with 100% of participants affirming that the design reflects cultural traditions and heritage. The use of culturally significant symbols, patterns, and motifs was particularly noted (100%), with the gown telling a story that resonates with the cultural values of Ghana (80%). This suggests that the bridal gown successfully promotes and celebrates Ghanaian culture, positioning it as not just a garment but a potential symbol of tradition and identity. In terms of innovation, the feedback was more moderate. While 70% of participants highlighted the uniqueness of the design, noting its innovative features, the rest (30%) emphasised improvement on certain key features, as one evaluator wrote, ***“the transformational process should be more simplified as it takes time to change over from one design to the other”***

On the novelty front, the gown was recognized for offering a fresh, modern look that captures attention 60% of participants believed the gown could influence future bridal fashion trends, while 50% appreciated the unique artistic details incorporated into the design. These responses suggest that the gown, while grounded in tradition, also brings a contemporary edge that appeals to modern tastes. Regarding the usefulness of the gown, 60% of participants appreciated its adaptability for various occasions beyond weddings, making it a versatile piece. Additionally, an impressive 90% noted the ease of cleaning and maintaining the gown, which adds to its practicality. However, only

10% of the appraisers recognized the built-in support structures, such as corsetry or bra cups, which suggests room for improvement in providing added comfort and ease of use.

In terms of commercial viability, the gown was praised for its inclusivity, with 100% of participants agreeing that the design caters to a diverse range of body types and cultural backgrounds. 80% affirmed that the gown could be produced at scale without compromising on quality or sustainability, while 70% believed it had unique selling points that would allow it to stand out in the competitive bridal market. The gown also scored highly in terms of comfort, with 90% of participants stating that the design allows for proper airflow and ventilation, making it comfortable to wear for extended periods. The gown's lightweight nature and adjustable features were also praised, with 80% noting that the dress could be easily adjusted for comfort during the event. Finally, on the matter of aesthetic beauty, the gown received mixed yet positive feedback. While 50% of participants felt that the design reflected a modern and elegant style, 100% praised the well-executed embellishments, and 70% found the colour appropriate for the wedding setting. These results affirm that the gown, while modern in its approach, remains rooted in elegance and tradition.

Overall, the BG performed strongly across most criteria, showing its ability to blend sustainability, cultural value, and innovative design with commercial viability and comfort, making it a well-rounded and highly appreciated garment for both weddings and beyond.

5.6.2 Final Design: Wrapping Guide to the Beach Wear

Presented in Figure 71 is a visual guide illustrating the four steps required to achieve the final wrapped design of the beachwear. The wrapping guide is simple, yet elegant, and enhances both the functionality and style of the garment. This four-step wrapping guide not only simplifies the process of wearing the beachwear but also highlights the versatility of the design. The finished look is both functional and fashionable, ideal for a day at the beach or a relaxed seaside occasion.

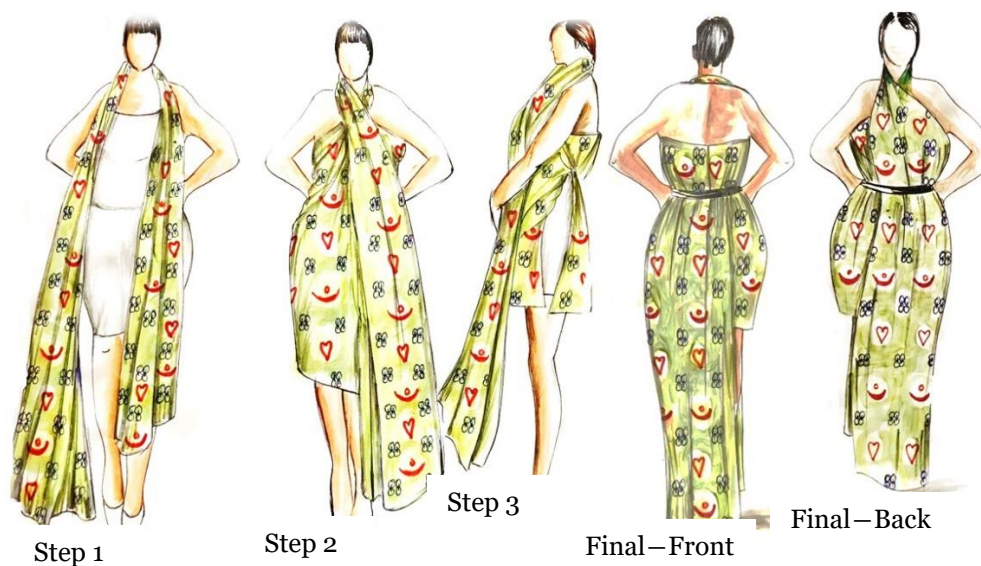


Figure 71: Wrapping Guide for Beach Wear

Source: Author

In Step 1, the fabric is carefully draped over the neck, ensuring that the fabric on the right side is longer than the left to create room for the fall over at the hip area. This forms the foundation of the wrap, creating an asymmetrical, balanced look while allowing for free movement and comfort. Step 2: Crisscrossing the longer side of the fabric from the neckline to the other hip side of the body. The cross-over feature provides an element of sophistication to the casual beachwear look. The third step, use the shorter side of the fabric to wrap around the hip and secure it either at the side or the centre back of the lower body. This step cinches the waist, giving the beachwear a more defined silhouette while maintaining its flowy, carefree essence. The longer side of the fabric is allowed to gracefully fall over the wrap on the hip to form the asymmetric effect, as shown in the final design.

5.6.2.1 Evaluating the Beach Wear

Presented in Figure 72 is the naturalistic view of both the front and final of the Beach Wear during the open evaluation session



Figure 72: Beach Wear Front and Back

Source: Author

As shown in Figure 72, the evaluators noted that the BW was beautifully designed from the BG, standing out as a unique departure from traditional beachwear styles. The design was praised for its

distinctiveness, offering a fresh and elegant take on what is typically worn at the beach. Unlike conventional beach attire, this beachwear introduced elements that combined both style and functionality, making it an attractive option for various beach activities. Table 10 provides a detailed evaluation of the beachwear, analysing several key aspects that highlight its overall quality. These aspects include sustainability, cultural values, innovation, novelty, usefulness, commercial viability, comfort, and the aesthetic.

Table 11: Judges' evaluation of the beachwear

Indicators	Observation	Yes		NT		No		Comments
		N	%	N	%	N	%	
Sustainability	Easily convertible for different occasions	6	60	2	20	2	20	
	Used locally sourced materials/resources	10	100	0	0	0	0	Satisfactory
	The dress is designed for long-term use	5	50	3	30	2	20	
Cultural Value	Elements of the dress reflect cultural traditions and heritage	9	90	1	10	0	0	
	The used symbols, patterns, or motifs hold cultural significance.	10	100	0	0	0	0	Satisfactory
	The dress tells a story or conveys a message that resonates with cultural values.	7	70	2	20	1	10	
Innovation	The design is unique and incorporates innovative features	8	80	1	10	1	10	
	The dress can be converted into different styles or outfits	7	70	1	10	2	20	Satisfactory
	There a detachable or adjustable elements that enhance functionality.	9	90	1	10	0	0	
Novelty	The dress offers a fresh, modern look that captures attention and sets trends.	6	60	2	20	2	20	
	Incorporate unique artistic details	5	50	2	20	3	30	Normal
	The dress has the potential to influence future fashion trends.	6	60	3	30	1	10	
Usefulness	The dress can be adapted for various occasions	6	60	3	30	1	10	
	Built-in support structures (corsetry, bra cups) that provide comfort and ease of use.	0	0	2	20	8	80	Satisfactory
	The dress is easy to clean and maintain	9	90	1	10	0	0	

Commercial Viability	The design caters for a diverse range of body types and cultural backgrounds.	9	90	1	10	0	0	Satisfactory
	The dress can be produced at scale without compromising quality or sustainability.	8	80	0	0	2	20	
	The dress can stand out in a crowded market through unique selling points.	8	80	1	10	1	10	
Comfort	The dress allows for proper airflow and ventilation	9	90	1	10	0	0	Satisfactory
	The dress is lightweight enough to wear comfortably for extended periods	9	90	1	10	0	0	
	The dress can easily be adjusted for comfort during the event	8	80	1	10	1	10	
Aesthetical beauty	The design reflects a modern and elegant style	2	20	2	2	6	60	Normal
	The embellishments are well-executed and aesthetically pleasing	8	80	1	10	1	10	
	The colour is appropriate for the occasion setting	5	50	2	2	3	30	

As depicted in Table 10, the participants provided a comprehensive evaluation of the designed BW. On sustainability, the participants emphasised that the beachwear is adaptable and convertible for various occasions, with 60% of them acknowledging this flexibility. Notably, all participants (100%) highlighted the use of locally sourced materials, which underscored the design's eco-consciousness. Additionally, 50% noted that the beachwear was designed for long-term use, reflecting durability and a commitment to sustainability. Overall, the beachwear was deemed satisfactory in terms of its sustainability, meeting expectations for environmentally responsible fashion.

With reference to the Cultural Value, the participants evaluated the cultural significance of the beachwear, noting that it successfully reflected cultural traditions and heritage, with 90% affirming this aspect. Furthermore, the symbols, patterns, and motifs used in the design were seen as culturally significant by all participants (100%). Moreover, 70% of the participants felt that the beachwear conveyed a meaningful story that resonated with cultural values. These results indicate that the beachwear effectively showcased cultural elements, earning high praise for its reflection of cultural values. On the innovation criteria, the participants were impressed with the innovative features of the beachwear, with 80% indicating that the design was unique and incorporated novel elements. Additionally, 70% agreed that the dress could be converted into different styles or outfits, enhancing its versatility. An impressive 90% noted the inclusion of detachable or adjustable elements, which added to the garment's functionality. The design was rated as highly satisfactory in terms of innovation, demonstrating creativity and forward-thinking fashion.

In terms of novelty, the participants felt the beachwear offered a fresh, modern look, capturing attention and setting trends, with 60% agreeing. However, only 50% appreciated the unique artistic details, and 60% believed the design had the potential to influence future fashion trends. While the design was considered appealing, the participants viewed its novelty as somewhat moderate, indicating that while it stood out, it did not fully break away from conventional beachwear expectations. On the usefulness, the beachwear was praised for its versatility, with 60% of participants agreeing that it could be adapted for different occasions beyond the beach. Additionally, 90% found the dress easy to clean and maintain, enhancing its practicality. On the contrary, 80% of participants noted that the design lacked built-in support structures (such as corsetry or bra cups), which would have provided greater comfort and ease of use. Despite this shortcoming, the beachwear was still regarded as practical and functional.

On the commercial Viability, the beachwear demonstrated strong commercial potential, with 90% of participants noting that the design catered to a diverse range of body types and cultural backgrounds. Furthermore, 80% indicated that the dress could be produced at scale without compromising quality or sustainability, and an equal percentage believed it could stand out in a crowded market through its unique selling points. The beachwear was, therefore, rated as commercially viable and capable of appealing to a broad consumer base. In addition, comfort was a key strength of the beachwear, with 90% of participants praising its airflow and ventilation, as well as its lightweight design that made it comfortable to wear for extended periods. Additionally, 80% noted that the dress could be easily adjusted for comfort during events, making it both practical and user-friendly.

In terms of aesthetic appeal, the participants appreciated the embellishments, with 80% rating them as well-executed and aesthetically pleasing. However, only 50% felt that the colour was appropriate for the occasion setting. While the design reflected some modern elements, 60% of the participants did not see it as fully embodying a modern and elegant style, suggesting that while the design was attractive, it lacked a cutting-edge or contemporary edge in certain aspects.

Overall, the evaluation revealed that the beachwear excelled in sustainability, cultural value, innovation, commercial viability, and comfort, while areas such as novelty and aesthetic beauty received more moderate assessments, as one evaluator wrote, ***“I think the fabric design should be all-around patterns or motifs that can fit all the styles or purposes”***

5.6.3 Final Design: Wrapping Guide to the Cocktail Dress

See Figure 73, a comprehensive guide to achieving the cocktail dress.

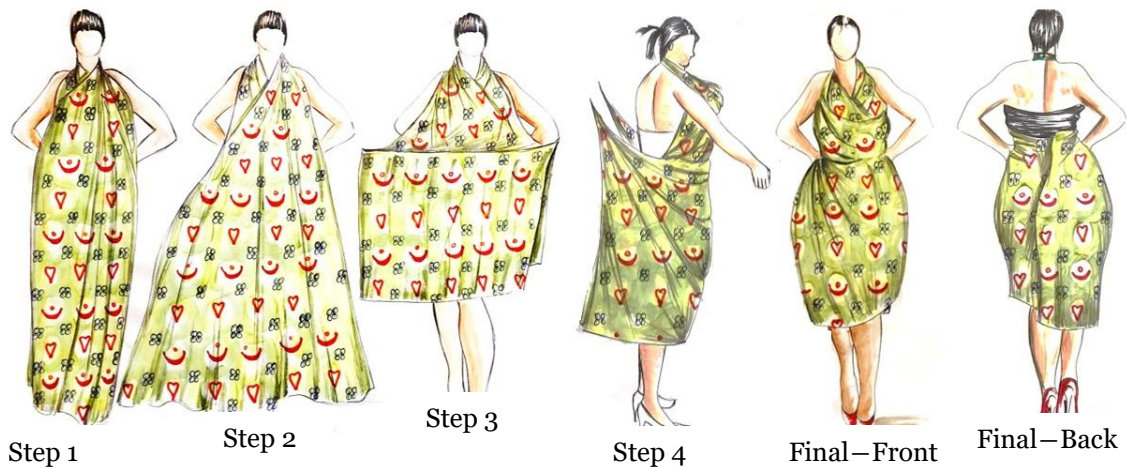


Figure 73: Guide to the Cocktail Dress

Source: Author

Step 1: Drape fabric lengthwise on the neckline and secure it with a knot at the back of the neckline to provide the foundation for the neckline effect as featured on the design. The wearer gracefully pulls the fabric up to the waistline to fall back for the cowl neckline effect. The Step 2 focus is on wrapping the bodice to create a fitted, flattering silhouette. The wearer takes one side of the fabric and crosses it over the torso, wrapping it around the waist and tucking or fastening it securely. Step 3: Make any necessary adjustments to ensure the perfect fit and finish.

Finally, the fall-over at the waist is secured with a knot at the centre back, ensuring that the dress falls evenly and gracefully. This final step ensures that the cocktail dress maintains its sophisticated, tailored appearance while being comfortable for the wearer.

5.6.3.1 Evaluating the Cocktail Dress

Presented in Figure 74 is the naturalistic view of both the front and back of the Cocktail Dress during the open evaluation session.



Figure 74: Cocktail Dress Front and Back

Source: Author

Table 11 provides a detailed analysis of the opinions gathered from participants regarding the design of the cocktail dress. The feedback covers various aspects such as the dress's sustainability, cultural values, innovation, novelty, usefulness, commercial viability, comfort, and aesthetic beauty. Through this evaluation, it becomes clear how well the cocktail dress meets both functional and stylistic expectations, offering insight into its overall reception among appraisers.

Table 12: Judges' evaluation of the cocktail dress

Indicators	Observation	Yes		NT		No		Comments
		N	%	N	%	N	%	
Sustainability	Easily convertible for different occasions	7	70	1	10	2	20	Satisfactory
	Used locally sourced materials/resources	9	90	1	10	0	0	
	The dress is designed for long-term use	7	70	2	2	1	10	
Cultural Value	Elements of the dress reflect cultural traditions and heritage	10	100	0	0	0	0	Satisfactory
	The used symbols, patterns, or motifs hold cultural significance.	9	90	1	10	0	0	
	The dress tells a story or conveys a message that resonates with cultural values.	6	60	3	3	1	10	
Innovation	The design is unique and incorporates innovative features	7	70	2	2	1	10	Satisfactory
	The dress can be converted into different styles or outfits	6	60	3	3	1	10	
	There a detachable or adjustable elements that enhance functionality.	7	70	2	2	1	10	
Novelty	The dress offers a fresh, modern look that captures attention and sets trends.	6	60	2	2	2	20	Normal
	Incorporate unique artistic details	5	50	2	2	3	30	
	The dress has the potential to influence future fashion trends.	5	50	4	4	1	10	
Usefulness	The dress can be adapted for various occasions	7	70	2	2	1	10	Satisfactory
	Built-in support structures (corsetry, bra cups) that provide comfort and ease of use.	1	10	3	3	6	60	
	The dress is easy to clean and maintain	9	90	1	10	0	0	
Commercial Viability	The design caters for a diverse range of body types and cultural backgrounds.	9	90	1	10	0	0	Satisfactory
	The dress can be produced at scale without compromising quality or sustainability.	8	80	0	0	2	20	
	The dress can stand out in a crowded market through unique selling points.	9	90	1	10	0	0	
Comfort	The dress allows for proper airflow and ventilation	9	90	1	10	0	0	Satisfactory

	The dress is lightweight enough to wear comfortably for extended periods	9	90	1	10	0	0	
	The dress can easily be adjusted for comfort during the event	8	80	1	10	1	10	
Aesthetical beauty	The design reflects a modern and elegant style	4	40	3	3	3	30	
	The embellishments are well-executed and aesthetically pleasing	7	70	2	2	1	10	Normal
	The colour is appropriate for the occasion setting	6	60	1	10	3	30	

As presented in Table 11, participants conducted a thorough evaluation of the cocktail dress (CD), assessing it across multiple key criteria, including sustainability, cultural value, innovation, novelty, usefulness, commercial viability, comfort, and aesthetic beauty. On the aspect of sustainability, participants remarked that the CD is easily convertible for different occasions, with 70% affirming its versatility. Additionally, 90% of participants noted that the dress was crafted from locally sourced materials, emphasising the use of regional resources. The dress was also designed for long-term use, with 70% of respondents viewing its durability positively. Overall, the sustainability of the CD was considered satisfactory by the participants.

Regarding cultural value, the participants praised the CD for its strong reflection of cultural traditions and heritage, with 100% of them agreeing on this point. They also highlighted that the symbols, patterns, or motifs used in the design hold significant cultural meaning (90%), and 60% noted that the dress tells a story or conveys a message resonating with cultural values. This led participants to conclude that the CD was culturally significant and well-designed in terms of heritage. In terms of innovation, participants rated the CD highly, with 70% agreeing that the design is unique and incorporates innovative features. Additionally, 60% of respondents appreciated the dress's versatility in being converted into different styles or outfits, while 70% noted that the detachable or adjustable elements enhance its functionality. The overall verdict from participants was that the CD was innovative and provided a fresh approach to cocktail dress design.

When assessing the novelty of the CD, participants had more tempered views. While 60% agreed that the dress offers a fresh, modern look that captures attention and sets trends, only 50% felt that it incorporated unique artistic details, whereas the others thought otherwise as a member write that ***“the accessories used particularly sewing pins, safety pins and e.t.c. use in fastening and securing portions of the dress can be injurious to the wearer”***.

Similarly, 50% believed the dress had the potential to influence future fashion trends. Overall, participants felt that the novelty of the CD was normal but not exceptionally groundbreaking. In terms of usefulness, participants appreciated that the CD could be adapted for various occasions beyond its original purpose, with 70% agreeing on this point. The dress was also easy to clean and maintain, a factor that 90% of participants valued. However, some concerns were raised regarding

the lack of built-in support structures, such as corsetry or bra cups, which 60% noted would have provided greater comfort and ease of use. Despite this, the usefulness of the CD was deemed satisfactory overall.

For commercial viability, the CD received high marks from participants. They noted that the design caters to a diverse range of body types and cultural backgrounds (90%), can be produced at scale without compromising quality or sustainability (80%), and can stand out in a crowded market through unique selling points (90%). These findings underscored the CD's strong commercial potential. In terms of comfort, participants were pleased with the dress's performance. They indicated that it allows for proper airflow and ventilation (90%) and is lightweight enough to be worn comfortably for extended periods (90%). Additionally, 80% noted that the dress could be easily adjusted for comfort during events, adding to its appeal. Finally, on the matter of aesthetic beauty, participants found that the embellishments were well-executed and aesthetically pleasing (70%), and the colour of the dress was deemed appropriate for the occasion (60%). However, 60% of participants felt that the design did not fully reflect a modern and elegant style. As a result, the aesthetic beauty of the CD was considered normal by the appraisers, indicating room for refinement in its overall visual appeal.

5.6.4 Final Design: Wrapping Guide to Morning Coat

See Figure 75, the guide to achieving the morning coat. This guide highlights the structured approach taken to achieve the elegant and refined look of the coat. Each step in the wrapping process contributes to the overall fit, form, and aesthetic appeal of the finished piece.



Figure 75: Guide to the Morning Coat

Source: Author

Step 1 consists of holding the fabric in the middle to divide it into two halves and securing a knot by holding together the folded and unfolded hems neatly. Step 2: Twist and turn the position of the folded hems by crisscrossing them in the opposite direction to form the armhole and neckline,

respectively. Step 3: Wear the knotted cloth on your body and manipulate the surplus fabric at the underarm to form a cowl-neckline effect at the underarm area. This is where the signature look of the morning coat comes to life. Step 4: Introduce all the necessary adjustments to ensure good drape.

5.6.4.1 Evaluating the Morning Coat

Figure 76 is the naturalistic view of both the front and back of the morning coat during the open evaluation session.



Figure 76: Morning Coat Front and Back

Source: Author

Table 12 offers insights into the participants' evaluations of the morning coat and its transformational process. Their feedback encompasses various aspects of the morning coat, including sustainability, cultural values, innovation, novelty, usefulness, commercial viability, comfort, and aesthetic beauty.

Table 13: Judges' evaluation of the MC

Indicators	Observation	Yes		NT		No		Comments
		N	%	N	%	N	%	
Sustainability	Easily convertible for different occasions	8	80	1	10	1	10	Satisfactory
	Used locally sourced materials/resources	9	90	1	10	0	0	

	The dress is designed for long-term use	8	80	1	10	1	10		
Cultural Value	Elements of the dress reflect cultural traditions and heritage	9	90	1	10	0	0		
	The used symbols, patterns, or motifs hold cultural significance.	9	90	1	10	0	0	Satisfactory	
	The dress tells a story or conveys a message that resonates with cultural values.	5	50	3	3	2	20	0	
Innovation	The design is unique and incorporates innovative features	6	60	3	3	1	10	0	
	The dress can be converted into different styles or outfits	5	50	4	4	1	10	0	Normal
	There a detachable or adjustable elements that enhance functionality.	5	50	3	3	2	20	0	
Novelty	The dress offers a fresh, modern look that captures attention and sets trends.	5	50	2	2	3	30	0	
	Incorporate unique artistic details	4	40	1	10	5	50	0	Normal
	The dress has the potential to influence future fashion trends.	5	50	4	4	1	10	0	
Usefulness	The dress can be adapted for various occasions	3	30	1	10	6	60	0	
	Built-in support structures (corsetry, bra cups) that provide comfort and ease of use.	1	10	2	4	7	70	0	Normal
	The dress is easy to clean and maintain	9	90	1	10	0	0	0	
Commercial Viability	The design caters for a diverse range of body types and cultural backgrounds.	8	80	2	2	0	0	0	
	The dress can be produced at scale without compromising quality or sustainability.	9	90	1	10	0	0	0	Satisfactory
	The dress can stand out in a crowded market through unique selling points.	9	90	1	10	0	0	0	
Comfort	The dress allows for proper airflow and ventilation	10	100	0	0	0	0	0	
	The dress is lightweight enough to wear comfortably for extended periods	9	90	1	10	0	0	0	Satisfactory
	The dress can easily be adjusted for comfort during the event	9	90	0	0	1	10	0	
Aesthetical beauty	The design reflects a modern and elegant style	4	40	3	3	3	30	0	
	The embellishments are well-executed and aesthetically pleasing	7	70	2	2	1	10	0	Satisfactory

The colour is appropriate for the occasion setting

8 80 1 10 1 10

Starting with sustainability, the participants had a highly favourable view of the MC. They appreciated that the coat could be easily adapted for various occasions, with 80% of them highlighting its convertibility. This flexibility makes it suitable not only for formal settings but also for less formal or varied events, enhancing its long-term use potential. Moreover, 90% of the participants pointed out that the MC utilised locally sourced materials, emphasizing its eco-friendly and regionally relevant nature. This reliance on local resources also contributes to reducing the carbon footprint of its production. In addition, 90% of the participants agreed that the morning coat was designed for long-term use, reinforcing its durability and resilience. Overall, the group concluded that the MC is a sustainable garment, balancing versatility with an environmentally conscious design.

In terms of cultural value, the participants found the morning coat to be deeply rooted in tradition. With 90% of participants stating that the coat reflects cultural traditions and heritage, the design was praised for integrating elements that resonate with the cultural identity of its wearers. Furthermore, 90% agreed that the symbols, patterns, or motifs used in the morning coat held significant cultural meaning, which adds a layer of narrative to the garment, linking it to historical and cultural storytelling. However, only 50% of participants felt that the coat directly conveys a message or story that aligns with cultural values. Despite this, the overall sentiment was that the cultural value of the MC was satisfactory, with strong ties to heritage and tradition.

When it came to innovation, the participants offered more tempered feedback. While 60% felt that the MC was unique and included innovative features, others had different views, as one participant queried, ***“To me, I think the morning coat should have served as the cocktail dress because it looks more fancy to be worn indoors”***. This comment and many others call for improvement in transforming the morning coat.

Regarding novelty, the participants' feedback was also average. While 50% appreciated that the coat offers a fresh, modern look and could potentially set new trends, the remaining half felt that it didn't fully stand out from other designs. Moreover, 50% of the participants noted that the MC did not incorporate unique artistic details, which could have further differentiated it from traditional garments. This led to the overall assessment that the novelty of the MC was standard, suggesting that it blends some modern appeal with classic elements but doesn't push boundaries in fashion. On the aspect of usefulness, the participants were quite positive about certain features but identified some limitations. A significant 90% mentioned that the MC is easy to clean and maintain, which is a practical advantage for wearers. These critiques suggest that while the MC is practical in some respects, it may not fully meet the needs of all users in terms of adaptability and comfort, resulting in a "normal" rating for usefulness.

In terms of commercial viability, the feedback was encouraging. A solid 80% of participants felt that the design catered to a wide range of body types and cultural backgrounds, which is essential for broad market appeal. Additionally, 90% of participants believed that the coat could be produced at scale without sacrificing quality or sustainability, making it an attractive option for mass production.

Concerning comfort, the participants were overwhelmingly positive. They noted that the coat allows for proper airflow and ventilation (100%), making it breathable and comfortable for extended wear. The overall assessment was that the aesthetic beauty of the MC was satisfactory, indicating it has strong visual appeal but may not be perceived as fashion-forward by all.

In conclusion, the participants' evaluation of the morning coat highlights its strengths in sustainability, cultural value, comfort, and commercial viability, while suggesting that improvements could be made in innovation and novelty.

5.6.5 Final Design: Wrapping Guide to the Party Wear

See Figure 77, the guide to achieving the Party Wear.



Figure 77: Party Wear Guide

Source: Author

Step 1: Hold the fabric straight perpendicular to the wearer's face and make sure that the selvages are parallel to each other. The goal here is to establish the foundation of the dress; precision in wrapping is critical to ensure a well-balanced dress. Step 2: Gather fabric at the upper hem to form pleats that will later be transformed into a rosette as featured in the dress. Step 3: Take 1/4 of the length of the fabric to prepare the rosette. **Note:** The rosette is prepared living behind an extra hanging, as that will be used at the upper back section of the dress, a style feature. Step 4: Placed the rosette on the right shoulder, allowing the excess fabric to fall at the back of the wearer. Reduce the length of the fabric to the required length by folding in excess fabric into the waistline. The excess fabric concealed in the waistline should be well arranged to prevent bulkiness within the waist area. In this stage, the dress begins to take shape, with clear definition in areas such as the bust, waistline, hips and length of the dress. Step 5 is the final step that completes the transformation. An on-fold

edge is created as the excess fabric is folded into the waistline. Hold the two on-fold edges and tilt the lower torso (skirt section) towards the right hip area and secure it at the waistline with a knot, leaving the rest hanging to form a slit opening at the side waist down. Add decorative complements to add an extra touch of glamour.

5.6.5.1 Evaluating Party Wear

Figure 78 is the naturalistic view of both the front and back of the party wear during the open evaluation session.



Figure 78: Party Wear Front and Back

Source: Author

See Table 13 for a detailed breakdown of the appraisers' opinions regarding the Party Wear dress.

Table 14: Judges' evaluation of the Party Wear

Indicators	Observation	Yes		NT		No		Comments
		N	%	N	%	N	%	
Sustainability	Easily convertible for different occasions	8	80	1	10	1	10	Satisfactory
	Used locally sourced materials/resources	9	90	1	10	0	0	
	The dress is designed for long-term use	7	70	1	10	2	20	
Cultural Value	Elements of the dress reflect cultural traditions and heritage	10	100	0	0	0	0	Satisfactory
	The used symbols, patterns, or motifs hold cultural significance.	10	100	0	0	0	0	
	The dress tells a story or conveys a message that resonates with cultural values.	9	90	1	10	0	0	
Innovation	The design is unique and incorporates innovative features	8	80	1	10	1	10	Satisfactory
	The dress can be converted into different styles or outfits	7	70	1	10	2	20	
	There a detachable or adjustable elements that enhance functionality.	9	90	1	10	0	0	
Novelty	The dress offers a fresh, modern look that captures attention and sets trends.	4	40	1	10	5	50	Normal
	Incorporate unique artistic details	5	50	2	20	3	30	
	The dress has the potential to influence future fashion trends.	6	60	3	30	1	10	
Usefulness	The dress can be adapted for various occasions	7	70	2	20	1	10	Satisfactory
	Built-in support structures (corsetry, bra cups) that provide comfort and ease of use.	0	0	2	20	8	80	
	The dress is easy to clean and maintain	9	90	1	10	0	0	
Commercial Viability	The design caters for a diverse range of body types and cultural backgrounds.	9	90	1	10	0	0	Satisfactory
	The dress can be produced at scale without compromising quality or sustainability.	8	80	0	0	2	20	
	The dress can stand out in a crowded market through unique selling points.	8	80	1	10	1	10	
Comfort	The dress allows for proper airflow and ventilation	9	90	1	10	0	0	Satisfactory
	The dress is lightweight enough to wear comfortably for extended periods	9	90	1	10	0	0	

	The dress can easily be adjusted for comfort during the event	8	80	1	10	1	10	
Aesthetical beauty	The design reflects a modern and elegant style	2	20	2	2	6	60	
	The embellishments are well-executed and aesthetically pleasing	8	80	1	10	1	10	Satisfactory
	The colour is appropriate for the occasion setting	7	70	1	10	2	20	

As presented in Table 5, participants provided a comprehensive evaluation of the PW dress, per the established criteria related to sustainability, cultural value, innovation, novelty, usefulness, commercial viability, comfort, and aesthetic beauty. Participants highlighted that the PW dress performed well in terms of sustainability. The dress is easily adaptable for different occasions, with 80% of participants noting its versatility. Additionally, 90% of participants acknowledged the use of locally sourced materials, which not only supports local industries but also reduces the environmental impact. The dress is also designed for long-term use, as indicated by 70% of participants. These factors combined lead the participants to affirm that the PW dress is satisfactory in terms of sustainability, providing a durable and eco-conscious design that fits various occasions.

The cultural significance of the PW dress received strong approval, with 100% of participants emphasising that the design reflects cultural traditions and heritage. The incorporation of symbols, patterns, and motifs that hold cultural value was praised by all participants. Furthermore, 90% of participants mentioned that the dress conveys a message or tells a story that resonates with cultural values. This recognition underscores the deep cultural connection the PW dress maintains, making it more than just a fashion statement but also a reflection of cultural heritage. The participants indicated that the cultural value of the design is highly satisfactory. On the innovation front, 80% of participants found the RC design to be unique, with several innovative features that set it apart from other PW attire. The adaptability of the dress, allowing it to be converted into different styles, was appreciated by 70% of participants, showing its versatility.

When evaluating the novelty of the PW dress, opinions were more varied. While 50% of participants acknowledged the unique artistic details of the dress, and 60% believed that it had the potential to influence future fashion trends, the majority felt that the dress did not offer a fresh or modern look that could capture attention or set trends. Again, 50% of participants expressed this view, suggesting that while the dress contains innovative elements, it might not fully break away from conventional design aesthetics. Nonetheless, the participants still affirmed that the novelty of the PW dress is satisfactory. In terms of usefulness, 70% of participants found that the PW dress could be adapted for a variety of occasions, making it highly versatile. Additionally, 90% noted that the dress is easy to clean and maintain, which is crucial for a garment intended for repeated use.

The commercial viability of the PW dress was well-received, with 90% of participants noting that the design caters to a diverse range of body types and cultural backgrounds. The ability to produce the

dress at scale without compromising quality or sustainability was also highlighted by 80% of participants. Furthermore, 80% of participants believed that the dress has unique selling points that allow it to stand out in a crowded market. These factors led the participants to affirm that the PW dress is commercially viable, with the potential to appeal to a broad audience. The comfort of the RC dress was another strong point, with 90% of participants mentioning that the dress allows for proper airflow and ventilation, making it suitable for extended wear. However, 60% of participants felt that the design did not reflect a particularly modern or elegant style, suggesting that while the dress has aesthetic appeal, it may not fully align with contemporary fashion trends. Despite this, participants overall agreed that the PW dress is aesthetically beautiful.

In conclusion, the participants' evaluation of the red carpet dress across these criteria reveals that the design is largely successful in its sustainability, cultural value, innovation, usefulness, commercial viability, comfort, and aesthetic appeal. While there were some critiques concerning the modernity of the design and the lack of built-in support structures, the PW dress was generally regarded as a well-rounded and thoughtfully crafted garment suitable for both cultural significance and practical use.

5.7 Final Adjustments to the Prototype

Feedback from the evaluation session regarding certain functionality aspects of the design prompts the researcher to adjust the gown to meet those expectations. Prevalent among the feedback was, ***“the gaps between the fasteners look too wide”***. Figure 79 highlights gaps in the question.



Figure 79: Wide Gaps

Source: Author

In addition to this, suggestions were made to the study to explore simpler wrapping guides to reduce the time spent in the changing process, and pattern (motifs) arrangement on the fabric was also an issue of discussion. See **Appendix E** for more comments on improving the final product. The study considers all the feedback very relevant. But not all were implemented in this phase of the study because of their subjective nature. The study, however, recommends future related studies to delve into those concerns. The Adjustment in this phase is exclusive to the functional aspect of the study, wherein issues of wider gaps between fasteners are addressed.

Prior to final adjustment to the prototype, a Post-evaluation discussion was held with the study supervisors to find solutions to concerns that were raised during the evaluation. Prevalent among the possible solutions to addressing the particular wider gaps between the fasteners was to overlap the edge of the hook and loop fastener so that a double fabric would be obtained instead of the initial one that has the hook and loop fastened together at edge-to-edge. This, invariably, will require another row of hooks and loops to be fixed parallel to the initial ones. The adjustments were carried out in the Fashion Laboratory of the Department of Fashion Design at the UBI

5.7.1 Adjustment Procedures

1. Marking the overlapping (4" overlap) and application of cotton bias to both the underwrap and overwrap. Opening and closures in principle should be on double fabric; hence, the introduction of the cotton bias for the hook and loop to sit on. Figures 80 and 81



Figure 80: Marking overlapping

Source: Author



Figure 81: Applying Bias

Source: Author

2. Fixing of hooks and working loops on overwrap and underwrap.



Figure 82: Fixing hooks and loops

Source: Author

3. Right and wrong sides of overlapping

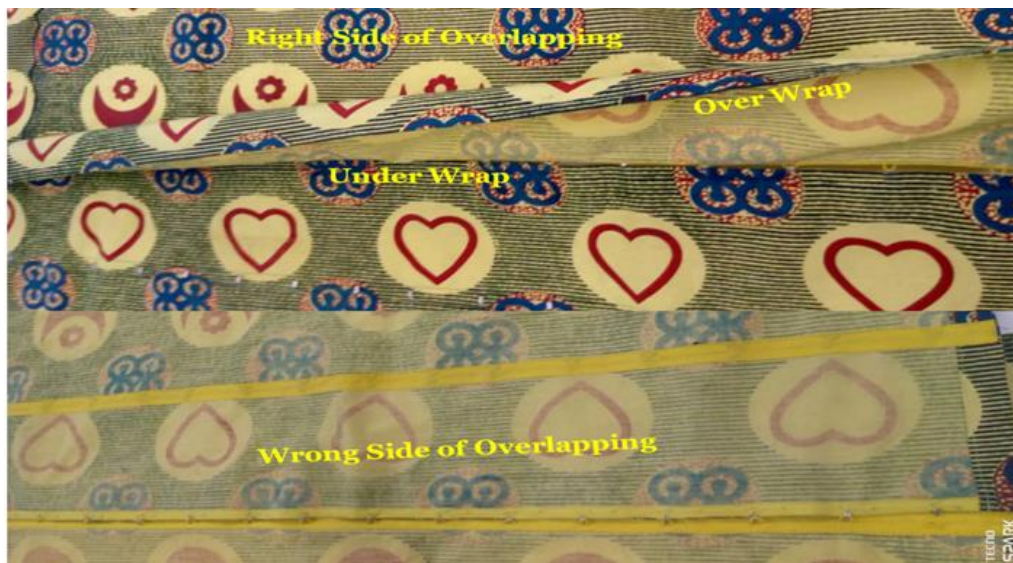


Figure 83: Wrong and Right Sides of Overlapping

Source: Author

4. Final Overlapping



Figure 84: Final Overlapping

Source: Author

5.8 Discussion of Prototype

The application of the multi-purpose concept in converting a bridal gown into beachwear, cocktail attire, a morning coat, and a party outfit demonstrates a commitment to creating versatile, adaptable designs that suit various occasions. This transformation of the bridal gown showcases the designers' attention to adaptability. The evaluation of these dresses, which highlighted satisfactory performance across key criteria such as sustainability, cultural significance, innovation, utility, commercial viability, comfort, and beauty, underscores the success of this multi-functional design approach. The ability to repurpose a wedding dress into items suitable for varied settings extends each garment's lifecycle, adding value for the wearer and addressing the modern demand for more adaptable and economical clothing options.

Cunha and Broega (2009) argue that multi-purpose designs increase the appeal of clothing by involving the wearer in decision-making. This approach enables individuals to explore various styles and combinations, fostering a more interactive and engaging relationship with their apparel. Moreover, it prolongs the lifespan of garments, addressing issues associated with fast fashion, which is often criticised for encouraging waste and fleeting trends. By promoting clothing suitable for various occasions and seasons, multi-purpose designs create an opportunity to align environmental responsibility with current fashion trends.

The real value of multi-purpose garments lies in their technical execution. Clothing designed to be functional across different seasons not only meets consumer needs but also establishes a unique marketing and production framework. Such designs can bridge the gap between eco-friendly fashion choices and the demand for stylish, high-quality items. This strategy also provides a competitive edge for designers and manufacturers, enabling them to create garments that meet both practical and aesthetic demands while catering to the rising interest in sustainable fashion.

Ultimately, the multi-purpose concept elevates fashion by providing adaptable, sustainable clothing solutions that not only meet the needs of today's consumers but also contribute positively to the environment. The successful execution of this idea, as confirmed during evaluation, demonstrates its potential as a forward-thinking approach that could reshape how clothing is designed, worn, and valued in the future. Despite the critiques, the overall assessment of the collection was highly positive, with each piece regarded as thoughtfully crafted and visually appealing.

Chapter | 6

6.1 Co-Design Conceptual Model Development

In developing the Co-Design Conceptual (Co-Conceptual) Model, existing models for designing sustainable clothing were carefully analysed to understand their strengths and limitations. Notably, these existing models, such as those developed by Aakko and Koskennurmi-Sivonen (2013), Jin Gam et al. (2009), and the Textile Environment Design initiative (2006), tend to be theoretically focused, with a primary emphasis on the sustainable aspects of the industry supply chain, eco-efficiency, sufficiency, and production processes. However, these models often overlook the wearer's active involvement in the design process, specifically regarding their unique values, needs, and preferences, which is a key component in user-centred design thinking.

While these earlier models effectively address sustainable production practices, such as resource efficiency and waste reduction, they do not account sufficiently for consumption behaviours, long-term usage, or the end-of-life disposal of clothing. This gap is particularly relevant in contexts like Ghana, where the “White Wedding Gown” often holds cultural importance but is typically seen as a single-use garment, leading to a high rate of redundancy after the wedding day. The CoD-Conceptual Model thus aims to address this issue by incorporating a co-design framework, which encourages active collaboration between designers and wearers. This model focuses on creating bridal gowns that are not only sustainable but also versatile, allowing for the gown’s repurposing into other forms, such as cocktail dresses, beachwear, and formal evening attire, extending the garment's lifecycle.

The application of the CoD-Conceptual Model empowers fashion designers and creators to embrace a design thinking approach that places the wearer's values and needs at the centre of the design process. By integrating co-design principles, this model facilitates a collaborative, user-centred design experience where the wearer’s perspectives and lifestyle factors shape the final product. This sustainable design thinking approach not only reduces the environmental impact by maximising the garment's usability but also aligns with the cultural values and practical needs of Ghanaian consumers. Ultimately, the CoD-Conceptual Model represents **(Figure 85)** a shift toward a more inclusive and sustainable design philosophy, where garments are created with an emphasis on adaptability, cultural relevance, and wearer satisfaction.

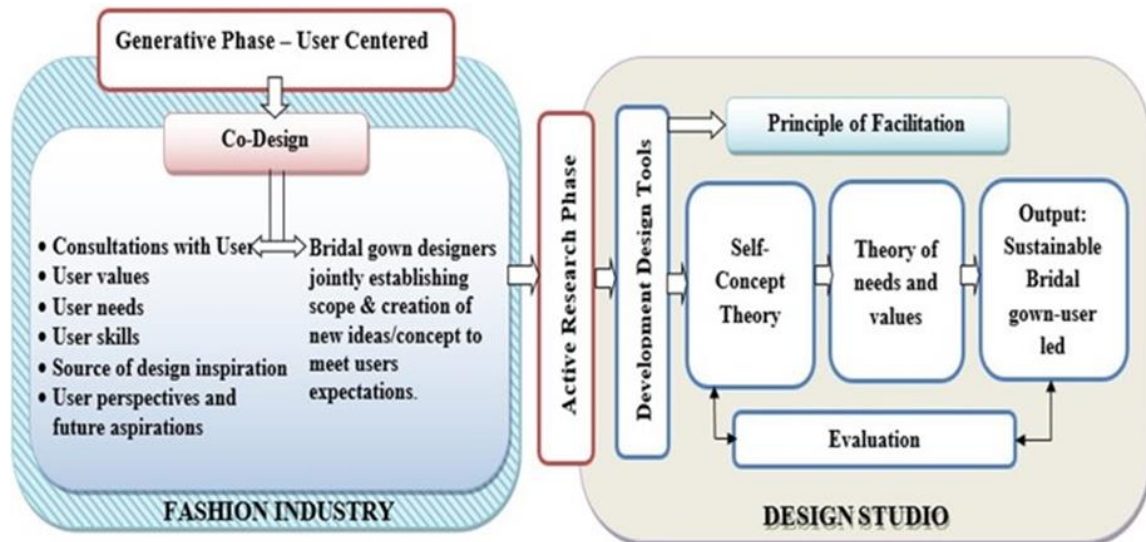


Figure 85: Co-design conceptual model

Source: Author

6.1.1 The Generative Phase- user-centred (UCD)

The generative phase of the Co-Design Conceptual Model aligns seamlessly with the concept of the convertible bridal gown, as this phase emphasises user-centred design through active engagement and consultation with stakeholders, particularly end users. In designing a multi-functional dress that transitions into various attire types (such as red carpet, cocktail, beachwear, and morning coat), the generative phase facilitates a collaborative framework where potential wearers share their values, needs, and unique perspectives on garment functionality. By prioritising the insights of the users, the designer can create a gown that aligns more closely with wearers' evolving fashion aspirations and practical requirements.

Bradwell and Marr (2008) highlight that in the generative phase, consulting end users on their preferences and needs leads to a user-led outcome, where the final design reflects personal and collective values instead of broad market trends. This people-centred design strategy diverges from traditional market-oriented practices by actively inviting users to participate in the creative process, thereby enhancing both satisfaction and garment longevity. In the case of the convertible bridal gown, this phase ensures that the gown resonates with the wearer's vision, cultural values, and lifestyle, potentially reducing the gown's disposability after a single use.

Myerson (2016) reinforces that the generative phase is crucial in solving design issues before the development stage by addressing specific user needs and potential challenges. This approach brings in a new level of innovation in the bridal gown's design, enabling flexibility and reusability, as well as creating value beyond a single-event garment. Users can directly influence features such as style, functionality, and even symbolic elements, crafting a gown that not only meets their preferences but is also adaptive enough to serve in various contexts. This aligns with the co-design model's goal of creating a balance between sustainable production and user engagement, ensuring that each phase of design considers both environmental impact and cultural relevance.

In co-design, users are no longer passive consumers but active, dynamic participants in the design journey, as Sanders and Stappers (2008) and Visser (2005) describe. The process of converting a bridal gown into multiple attire types allows users to influence practical features like adjustability, detachable elements, and fabric choices, promoting a personal connection to the garment. As Milburn (2017b) points out, the traditional approach to clothing design excludes wearers from contributing to the creative process, leading to a “disconnect” between the user and the garment, which in turn fuels premature disposal. This trend is apparent in the fashion industry, where £140 million worth of clothing is disposed of annually due to a lack of personal attachment and relevance to the wearer’s needs (James et al., 2019). By incorporating user-centred values into the bridal gown’s design, the Co-Design Conceptual Model aims to foster a deeper connection between wearers and their garments, thereby reducing the waste cycle and promoting sustainability.

In conclusion, the generative phase is pivotal for ensuring that the convertible bridal gown not only meets high aesthetic and functional standards but also aligns with the wearer’s values, thereby creating a garment that resonates on a personal level and remains relevant across multiple occasions. The co-design process promotes longer garment lifecycles, helping to address the pressing issue of waste in the fashion industry by creating adaptable, user-informed attire. This transformation, driven by active user participation, exemplifies how co-design can yield innovative, sustainable solutions that satisfy both cultural and environmental considerations.

6.1.2 The Active Research Phase

The active research phase in the Co-Design Conceptual Model is critical to shaping the convertible dress concept, as it emphasises collaborative innovation in which fashion designers play an active role in translating user input into a cohesive, future-oriented design. This interventionist phase requires designers to utilise specific developmental tools, including facilitation, self-concept theory, and the theory of needs. These tools are essential for guiding and transforming user insights into tangible design elements that reflect users’ aspirations for a multi-purpose bridal gown adaptable to settings such as the red carpet, cocktail events, beachwear, and a morning coat.

Facilitation in this context means that designers serve as mediators, drawing out users’ latent needs and preferences through structured interactions. They interpret and steer users’ ideas into feasible design features, ensuring that each convertible piece maintains its aesthetic and functional value across different contexts. Self-concept theory plays an equally important role, aligning the garment’s design with users’ identity and self-expression, making the bridal gown not just a one-off attire but an extension of the wearer’s unique sense of style and occasion-based needs. By applying the theory of needs, designers can ensure that each convertible element of the bridal gown meets practical requirements, whether for formality, elegance, or casualness, addressing the core needs users associate with their attire.

Rosenberg (2013) highlights that both designers and users must be equipped with relevant information and training to participate fully in the co-design process. For the bridal gown project,

this involves briefing users about the possibilities of convertible fashion and empowering them to articulate their preferences for each use case (e.g., elegance for red carpet events or comfort for beachwear). This collaborative dynamic, supported by training and information, strengthens user confidence in voicing design ideas, which designers can then refine into achievable solutions.

Kristensson et al. (2002) demonstrate the significance of involving 'ordinary users' in the ideation process, as users tend to generate ideas that are highly original and relevant. For the convertible bridal gown, engaging wearers in this way is valuable; their fresh perspectives could yield innovative suggestions on detachable components, fabric choices, or modular design features that align with user-centric aspirations, even if they may lack technical design knowledge. While these ideas from users reflect originality and enhance user value, designers contribute their expertise to refine these ideas into technically feasible outcomes, addressing aspects of producibility. For instance, designers may translate a user's vision of a transformable skirt into a detachable hem that seamlessly converts the gown into a cocktail dress, balancing the user's vision with production viability.

In essence, the active research phase allows designers and users to co-create, with designers leveraging their technical skill to bridge any gaps between user ideas and producibility. This collaboration not only produces a multi-functional bridal gown that embodies both style and function but also fosters a deep sense of user involvement and satisfaction. By aligning the gown's design with the wearer's needs and preferences, this phase helps create a garment that transcends traditional single-use bridal attire, embedding versatility and user connection into its very design.

6.1.3 Principle of Facilitation

In the design process for a sustainable dress, the Principle of Facilitation is central to ensuring that the final product aligns with the unique needs, preferences, and values of its intended wearers. This principle is foundational to the co-design conceptual model, guiding the interactions between designers and users in a way that fosters collaboration and mutual understanding. According to Hanson and Hanson (2011), facilitation is more than just organising conversations or decisions; it's a structured approach to ensure group interactions are productive, engaging, and directed towards shared goals.

Applying facilitation to the convertible bridal gown project involves creating an environment where users feel confident, relaxed, and open to expressing their ideas. A bridal gown designed for multi-functionality, transforming into attire for red carpet events, cocktail gatherings, beachwear, and morning coats, requires deep insight into how users envision wearing each version. Rogers (2007) notes that facilitators act as catalysts, helping clients arrive at conclusions based on their own experiences. For the gown, this would involve designers using thoughtful questions to guide wearers in articulating their needs, preferences, and visions for each dress transformation. This facilitative approach does not impose a rigid design but allows users to shape how their bridal gown could look and feel when adapted to various occasions, thus aligning with their personal values and sense of style.

While some ideas from non-professional users might be complex or even difficult to translate directly into feasible designs, Duschinsky (2012) suggests that human cognition and creativity develop through experience and awareness. Thus, even if a user struggles to express a specific design element, the facilitator's role is to help refine these ideas into something workable. For example, if a user envisions a seamless transition from a gown to beachwear, a facilitator might help them explore fabric choices, layering techniques, or detachable elements that can achieve this transformation.

Through this collaborative and supportive facilitation process, users feel they are active participants rather than passive recipients of design decisions. They gain confidence in sharing ideas, making choices that reflect their self-concept, and feeling valued in the process. This principle of facilitation ensures that the convertible bridal gown is not just a product of designer creativity but a co-created piece that resonates deeply with the wearer's identity, needs, and aspirations for sustainability and versatility. By fostering an inclusive, participatory atmosphere, the Principle of Facilitation in co-design ultimately results in a garment that is both functional and personally meaningful, extending beyond traditional bridal wear.

6.1.4 Self-Concept Theory

In the context of designing a sustainable dress, the Self-Concept Theory plays a crucial role in ensuring that the final product aligns with the wearer's personal identity, values, and psychological well-being. According to Michael and Anne (2002), the self-concept is an aggregate of beliefs, preferences, opinions, and attitudes about oneself, and it significantly impacts new product development. For a bridal gown that is designed to be multi-functional – transforming into red carpet attire, cocktail wear, beachwear, and a morning coat, the gown must align with the wearer's self-concept in a way that enhances their confidence, comfort, and emotional connection to the garment.

The three main attributes of the self-concept: learned, organised, and adaptable, are critical in the co-design process (Anne et al., 2012). Learned implies that a person's self-concept develops over time, shaped by their experiences and interactions. In the case of the convertible gown, this means that the design must take into account the wearer's past experiences with fashion, their cultural influences, and how they view their identity in different social settings. Organised suggests that the self-concept is systematically structured, so the gown's design must be coherent and consistent with the wearer's established sense of style, lifestyle, and aspirations. For example, if a wearer views themselves as elegant and modern, the gown should embody these qualities in each of its transformations, ensuring that the product feels authentic and in line with their identity. Adaptable refers to the ability of the self-concept to change or evolve based on new experiences. The convertible gown reflects this adaptability by offering a versatile design that can evolve with the wearer's needs across various occasions.

When designing a garment that addresses the self-concept, the gown mustn't conflict with the wearer's established identity. If the design does not resonate with the individual's sense of self, it

may lead to psychological discomfort or dissatisfaction. As Michael and Anne (2002) highlight, if a design is inconsistent with one's self-concept, it can cause psychological distress. This could manifest in the wearer feeling disconnected or uncomfortable in the garment, which could lead to the premature disposal of the item, especially in the case of high-cost garments like a bridal gown. By ensuring that the convertible bridal gown aligns with the wearer's self-concept, designers can foster a deeper emotional connection to the garment, increasing its longevity and preventing it from becoming an unwanted item.

The Self-Concept Theory thus provides valuable insight into how the design of the convertible bridal gown should focus not just on external aesthetics, but on how the garment supports and enhances the wearer's identity. Through the co-design process, designers can work closely with users to create a product that aligns with their self-image, ensuring that the gown feels like a reflection of who they are. This approach ultimately leads to a more meaningful and satisfying product, one that not only serves multiple functions but also feels authentic to the wearer's personal values and preferences.

6.1.5 Evaluation

The evaluation phase in the co-design conceptual model is essential to ensuring that the final product meets the needs and expectations of all stakeholders involved in its design, including the wearers, designers, and other contributors. By involving diverse participants in this phase, such as clients, industry experts, scholars, and even representatives from governmental and non-governmental funding agencies, the process benefits from a broad spectrum of insights and expertise (Mulder & Stappers, 2009; Akama & Prendiville, 2013).

Given that this process is cyclical rather than linear, continuous feedback allows for the bridal gown's design to be refined and modified at various stages. For example, if stakeholders identify an aspect of the gown that could enhance its functionality across different uses, such as its transformation from beachwear to cocktail attire, these insights are integrated, with trial adjustments made to test their impact. This continuous approach allows the design team to handle and resolve challenges flexibly, fostering innovation while addressing practical concerns.

In the co-design evaluation phase, testing and reassessment play a crucial role in validating each of the gown's conversions. For instance, contributors may provide feedback on the gown's comfort, durability, or adaptability in different settings, assessing whether the design aligns with user needs in real-world applications. If initial versions of the gown reveal limitations, such as a lack of versatility in certain areas, modifications can be made to improve functionality and ensure that each style is both practical and appealing. Moreover, this phase encourages risk-taking and openness to failure, accepting that some ideas may not meet expectations but can lead to valuable learning and improved outcomes. As such, evaluating the convertible bridal gown involves not only refining the garment itself but also improving the design approach to better support user-centred outcomes. This reflective process helps ensure that the final product genuinely embodies the co-design model's principles by being thoughtful, adaptable, and productive, ultimately creating a gown that fulfils the

goal of sustainability and multi-functionality. The evaluation phase thus validates the gown's adaptability, design quality, and cultural relevance, culminating in a product that is sustainable, commercially viable, and resonates with the end-user's values and expectations. By applying these evaluations, the design process becomes responsive and inclusive, maximising the gown's appeal and functionality for various occasions.

6.2 Application of Co-design Conceptual Model

The project, which seeks to create a versatile bridal gown using traditional wrapping techniques, aims to achieve something unique: a single gown that can be transformed into four distinct styles: party outfit attire, cocktail attire, beachwear, and a morning coat. To achieve this ambitious goal, the team is guided by a Co-Design Conceptual Model, a user-centred approach that places the wearer at the heart of the design process, ensuring that each transformation aligns with her values, cultural identity, and personal style.

In the Generative Phase, the researcher engages with the married, unmarried, industry players and other stakeholders to understand their visions, preferences, and practical needs. By focusing on user-centred design, the researcher ensures that the bridal gown is not merely a product but a piece that resonates deeply with the wearer. The researcher also considers the cultural heritage of traditional wrapping techniques, embedding each clothing style with authenticity and a nod to tradition.

As the study progressed into the Active Research Phase, the researcher facilitated a User-Centred Design (UCD) workshop in which participants actively demonstrated and applied traditional wrapping techniques to generate multiple bridal and post-bridal looks. In line with UCD principles, participants were positioned as co-designers rather than passive respondents, contributing experiential knowledge and cultural insight throughout the design process (Gulliksen et al., 2003).

Drawing on developmental design approaches and self-concept theory, participants articulated how their identities, values, and lived experiences should inform the gown's structure and styling. Through guided experimentation, users explored how a single wrapped configuration could be transformed with minimal adjustment from a formal bridal or red-carpet style into more casual forms such as cocktail or beachwear. Design decisions were therefore shaped directly by user input, with considerations of comfort, ease of transformation, cultural expression, and durability guiding each iteration (Marti & Bannon, 2009).

Overall, participants' input-informed successive design processes, ensuring that the resulting bridal forms were grounded in user needs and aligned with sustainability and adaptability objectives (Lu & O'Reilly, 2024). The Principle of Facilitation plays a central role in ensuring that the design process remains inclusive and dynamic. Using facilitation techniques, the researcher created an environment where participants feel comfortable voicing their ideas and concerns. In this supportive setting, they explore how each wrapping technique could work for the various transformations without compromising on cultural authenticity or personal comfort. For instance, in discussing the red carpet

transformation, users express a preference for a specific draping technique that accentuates formality, while a beachwear transformation might call for a wrap that feels breezy and relaxed. This back-and-forth exchange ensures that each gown variation remains true to the wearer's vision.

In the Self-Concept Theory Phase, the participants prioritise their self-constructed beliefs, making sure the gown resonates with each wearer's personal values and sense of self. A bride's attire is an expression of identity, and the design process respects this by ensuring that each transformation aligns with her self-image. The gown is crafted not only to adapt physically but also to reflect the wearer's unique identity and personal style across each transformation. This is essential, as any design that conflicts with the wearer's self-concept could lead to discomfort or dissatisfaction. Here, the design team ensures that each transformation feels authentic and natural to the bride, so she can wear each style with confidence and pride.

Finally, in the Evaluation Phase, focus group members provided critical and constructive feedback that informed the assessment of the proposed conceptual model, and the prototype bridal gown developed to test its viability. Overall, participants affirmed that the co-design conceptual model, implemented through user-centred design (UCD), successfully facilitated the development of a sustainable, multi-purpose bridal gown (MPBG) that met key criteria, including cultural relevance, adaptability, innovation, comfort, aesthetic appeal, and functionality.

However, several limitations were identified that offer opportunities for refinement of the MPBG. Some participants noted that the transformational process between garment configurations could be further simplified, as the time required to change from one design to another may affect usability in real-world contexts. Others recommended that future fabric designs could incorporate all-over patterns or motifs to ensure visual coherence across multiple styles and purposes. Concerns were also raised regarding the use of fastening accessories such as sewing pins and safety pins, which, while functional, were perceived as potentially injurious, indicating the need for safer securing mechanisms. Additionally, one participant suggested a reconsideration of the stylistic hierarchy within the prototype, proposing that the morning coat configuration might function more effectively as a cocktail dress due to its perceived elegance and suitability for indoor settings.

Despite these limitations, the evaluation findings confirm the overall success and viability of the proposed conceptual model, thereby fulfilling Objective 3 of the study. The ability of the model to generate a functional, culturally grounded, and adaptable MPBG demonstrates its effectiveness as a user-centred framework for sustainable bridal gown development. Importantly, the limitations identified through focus group evaluation serve as constructive feedback that supports continued improvement of the MPBG.

CHAPTER | 7

Summary of Findings, Conclusions and Further Actions

7.1 Achieved Results

This chapter sums up the findings from the study, draws conclusions arising from the study and makes relevant recommendations based on the findings and conclusions.

First of all, let us recall the objectives initially defined:

- To examine the historical perspectives of wedding gowns and the redundancy rate within the Ghanaian marriage culture.
- To explore the multi-purpose concept of product development and design sustainable bridal gowns through user-centred design (USD) with the Kente Wrapping Technique;
- To propose a conceptual model for developing sustainable wedding gowns and develop a prototype BG to test the viability of the proposed conceptual model;
- Evaluate the acceptance of the prototype BGs alongside the standard procedures of making gowns

Given the defined objectives, we establish the following hypotheses:

- Multi-Multi-purpose concept of product development through user-centred design (USD) with the Kente Wrapping Technique is a design thinking approach to addressing the redundancy of bridal gowns within the Ghanaian marriage culture.
- A conceptual model wherein the wearers' needs and values are solicited for is the way forward for sustainable BG development.
- Practically producing a sample prototype BG is the best way to test the viability of a new conceptual model.
- Focus group analysis form of evaluation is the appropriate methodology for assessing the general acceptance of new products.

Methodological Overview:

This study adopted a qualitative, mixed-methods approach combining non-interventionist and interventionist techniques within a User-Centred Design (UCD) framework. Research was conducted in three phases:

1. Exploratory Phase (Non-Interventionist):

Employed descriptive-observational methods and an extensive literature review to assess bridal gown practices, cultural meanings, and sustainability challenges without manipulating the environment. This phase established baseline evidence for design interventions.

2. Generative and Active Research Phases (Interventionist):

Utilised studio-based and practice-led methods to explore multi-purpose bridal gown concepts. The researcher engaged in material experimentation, prototyping, and continued design development, with participants actively contributing to knowledge creation.

Population and Sampling:

A purposive sample of **51** respondents was selected, including bridal gown designers, clothing and textiles teachers, married couples, yet-to-be-coupled individuals, and historians. Sampling ensured participants had relevant experiential, cultural, and professional knowledge to inform sustainable and culturally appropriate bridal design.

Data Collection Methods:

- **Semi-Structured Interviews:** Elicited cultural, emotional, and experiential insights from all participant categories.
- **Focus Group Discussions:** Evaluated the prototype bridal gown with fashion designers using an interactive, consensus-driven assessment.
- **User-Centred Practice Workshop:** Eleven unmarried women co-created multi-purpose bridal gowns using kente wrapping, providing hands-on insights and validating design adaptability.

Data Analysis:

Thematic analysis was conducted using NVivo 8.0, integrating user perspectives into codes and themes related to sustainability, cultural relevance, and multi-functionality.

Methodological Integration:

The approach effectively aligned with research objectives, enabling co-created, culturally grounded, and sustainable bridal gown designs. The Co-Design Conceptual (CoD) Model demonstrates the practical application of UCD, promoting versatility, sustainability, and commercial viability in bridal fashion.

7.2 Summary of Key Findings

Several findings emerged from the discussion of the results, which are summarised below. The findings were achieved based on the following objectives:

1. To examine the historical perspectives of wedding gowns and the redundancy rate within the Ghanaian marriage culture:

- Literature establishes that the white bridal gown originated in Great Britain and was later introduced into Ghanaian wedding practices through colonial influence and globalisation (Hudson, 2010; Alabi, 2020). Its continued dominance reflects cultural adoption rather than cultural origin.
- Although traditional Ghanaian bridal attire once held prominence, rapid industrialisation and exposure to global fashion trends led to a preference for Western bridal aesthetics. Post-independence brides selectively adopted and modified Western fashion, yet the white gown retained its symbolic dominance despite limited cultural functionality.

- Literature indicates minimal evolution in bridal gown silhouettes and design ideologies since the 14th century, with continued emphasis on extravagance, glamour, and symbolic purity. These aesthetic priorities necessitate excessive material use, contributing to environmental strain and contradicting principles of slow consumption and sustainability.
- Bridal gowns are identified as one of the most prematurely disposed or underutilised clothing items, often becoming dormant wardrobe artefacts immediately after wedding ceremonies, irrespective of the significant financial and material resources invested in their production and acquisition (Schaefer & Navarro, 2016).
- Despite their pronounced environmental footprint, particularly during the user phase, bridal gowns are often exempt from sustainability critique due to their perceived sanctity, symbolism, and ceremonial status (Kwon, 2017). This cultural exemption has contributed to the ongoing neglect of bridalwear within sustainability discourse.
- The literature suggests that the continued use of white bridal gowns in Ghana is sustained by entrenched social norms rather than by adaptability, reusability, or cultural relevance. As such, the redundancy issue is not merely a design failure but a broader cultural and historical phenomenon shaped by colonial legacies and contemporary consumer practices.

Collectively, these findings highlighted the historical persistence of single-use bridal garments and the marginalisation of indigenous dress practices in Ghana. The findings underscore the need for design strategies that prioritise adaptability, reuse, and cultural relevance, which the kente wrapping technique inherently fulfils by enabling non-destructive garment construction, reconfiguration, and extended use.

2. To explore the multi-purpose concept of product development and design sustainable bridal gowns through user-centred design (USD) with the Kente Wrapping Technique:

- Multi-purpose design is a viable sustainability strategy for bridalwear. The literature confirms that multi-purpose garment design, defined by adaptability, durability, and wearer engagement, offers a credible pathway for extending garment lifespan and reducing waste in bridal fashion. Within the Ghanaian context, this approach directly challenges the entrenched single-use logic of the white wedding gown by enabling post-wedding reuse across multiple social contexts.
- The kente wrapping technique preserves fabric integrity by avoiding cutting and irreversible alteration, thereby minimising material waste and enabling full garment reconfiguration. This positions wrapping not merely as an aesthetic tradition, but as an eco-ethical design strategy aligned with circular fashion principles.
- Existing bridal design models largely exclude user participation (UCD), limiting their effectiveness in addressing redundancy. Findings demonstrate that integrating users through co-creation, embodied experimentation, and reflection enables the translation of cultural values, self-concept, and practical needs into adaptable bridal forms, strengthening both sustainability outcomes and cultural relevance.

- The User-Centred Practice Workshop demonstrated that prospective users could successfully co-create elaborate bridal forms using kente wrapping without cutting the cloth. Participants were able to transform a single textile into multiple garment configurations, ie bridal, party, cocktail, beachwear, and morning coat, thereby empirically validating the multi-purpose design concept.
- The findings show that reclaiming and reinterpreting indigenous practices such as kente wrapping supports environmental sustainability while also countering the cultural marginalisation caused by the dominance of Eurocentric bridal aesthetics. Tradition and modernity are shown to coexist productively through adaptive, user-driven design.
- A user-centred, practice-led model offers a replicable framework for sustainable bridal design. Despite limitations related to sample size and geographic specificity, the workshop's transparency, reflexivity, and alignment with UCD principles establish its methodological robustness. The approach provides a transferable model for investigating sustainability through indigenous textile practices in other culturally situated fashion contexts

The findings collectively demonstrate that multi-purpose design, grounded in adaptability, durability, and user engagement, constitutes a viable sustainability strategy for bridalwear. The study further highlights the critical role of user-centred design (UCD) in enhancing both sustainability and cultural relevance. Traditional bridal design models often exclude user participation, limiting their capacity to address redundancy.

Moreover, reclaiming and reinterpreting indigenous practices such as kente wrapping underscores the potential for sustainable innovation that simultaneously preserves cultural identity and counters the marginalisation caused by dominant Eurocentric bridal aesthetics.

Finally, the practice-led, user-centred framework established through the workshop offers a replicable model for sustainable bridal design, providing a transferable methodology for investigating environmentally and culturally responsible fashion solutions within other contextually specific settings, despite the limitations related to sample size and geographic specificity.

3. To propose a conceptual model for developing sustainable wedding gowns and develop a prototype BG to test the viability of the proposed conceptual model:

- The findings demonstrate that the proposed conceptual model for sustainable bridal gown development is both viable and effective. By embedding co-design and active collaboration between designers and wearers, the model successfully addresses longstanding challenges associated with single-use bridal wear. This participatory structure enables users to articulate personal values, cultural expectations, and functional needs, ensuring that the resulting prototype bridal gown aligns with sustainability objectives while maintaining aesthetic and symbolic significance.
- A key strength of the model lies in its use of facilitation as a design mechanism, which supported the translation of users' ideas, self-concept, and lived experiences into tangible

design outcomes. Although the application of the model was tested within a limited and context-specific user group, which may constrain broader generalisation, this did not undermine its effectiveness. Rather, the successful development and testing of the prototype bridal gown confirms the practical viability of the model as a sustainable, user-centred framework.

Overall, the model demonstrates strong potential for wider application in bridal design and provides a robust foundation for advancing sustainable and culturally responsive fashion practice.

4. Evaluate the acceptance of the prototype BGs alongside the standard procedures of making gowns:

- The evaluation findings indicate a strong level of acceptance of the multi-purpose bridal gown prototypes when assessed. The prototypes performed satisfactorily across key criteria, including sustainability, cultural relevance, innovation, utility, comfort, aesthetic appeal, and commercial viability. This confirms that the multi-purpose design approach is capable of meeting both technical and experiential expectations traditionally associated with bridal gowns, while simultaneously addressing cultural sustainability concerns.
- While the evaluation was conducted within a limited user and contextual scope, which may restrict broader generalisation across diverse markets or production systems, these constraints do not diminish the overall outcome. Instead, the findings demonstrate that, within the study context, the prototypes successfully challenge conventional single-use bridal practices and offer a viable alternative that aligns with Ghanaian cultural values and contemporary consumer expectations.

Overall, the results validate the acceptance and practical potential of multi-purpose bridal gowns as a sustainable and market-ready innovation within bridal fashion.

7.3 Study Limitations

Despite the achievement of the research objectives, several limitations should be acknowledged.

First, the scope of participant engagement in the User-Centred (UCD) Practice Workshop involved a limited number of unmarried women based in Kumasi, Ghana. While the limited number aligns with qualitative and practice-based design research standards that ensure depth of qualitative data, it limits the generalisation of the findings to the global bridal markets.

Second, participants' prior familiarity and cultural affinity with kente may have influenced their responses positively. As kente holds strong symbolic and emotional value within Ghanaian culture, participants may have been more receptive to wrapping techniques than users from less culturally embedded contexts. This familiarity could introduce a degree of cultural bias, particularly in perceptions of acceptability and sustainability.

Third, while the multi-purpose bridal gown prototypes demonstrated strong performance in sustainability, adaptability, and user acceptance, the research did not fully examine long-term wear durability, repeated transformations over time, or adoption within mass-production systems.

Finally, the evaluation of the prototype bridal gowns was conducted within a controlled research setting rather than a live commercial market; hence, market dynamics such as pricing structures, supply-chain constraints, and large-scale consumer adoption were not empirically tested.

7.4 Key Contributions

The study makes several significant theoretical, methodological, and practical contributions to sustainable fashion and bridalwear design, despite its limitations.

1. Contribution to the Scientific Field of Fashion:

- This study contributes to the scientific field of fashion by advancing design-based knowledge production within sustainability research. It demonstrates that fashion design, when approached through systematic user-centred methodologies, can function as a rigorous mode of scientific inquiry, capable of generating verifiable and transferable insights.
- Specifically, the research empirically validates multi-purpose garment design as a sustainability mechanism in bridalwear. Typically, the bridal is less discussed in the discourse of environmental scrutiny due to its ceremonial status. By testing adaptability, reversibility, and material preservation through kente wrapping techniques, the study provides evidence-based support for circular fashion principles such as longevity, reuse, and waste minimisation within high-value, occasion-based garments.
- Furthermore, the research expands technical fashion knowledge by documenting non-destructive construction strategies, including wrapping and reversible configurations, as viable alternatives to cut-and-sew bridal construction. These findings contribute to emerging scientific discourse on material efficiency, modularity, and adaptive form making in garment systems.

2. Theoretical Contributions:

- The study advances sustainable fashion theory by repositioning bridalwear as a critical site of sustainability intervention, challenging its long-standing framing as a symbolic but disposable garment. By integrating multi-purpose design, circular fashion principles, and cultural sustainability, the research extends existing sustainability discourse beyond material efficiency to include cultural continuity and user meaning.
- Additionally, the study contributes to decolonial fashion discourse by critically interrogating the dominance of the Eurocentric white wedding gown within Ghanaian marriage culture. It demonstrates how indigenous practices, such as kente

wrapping, can function as legitimate, contemporary design strategies rather than nostalgic or purely traditional expressions.

3. Methodological Contributions:

- Methodologically, the research offers a consistently user-centred, practice-led design model for investigating sustainability in culturally situated fashion contexts. The User-Centred Practice Workshop demonstrates how co-creation, exemplified experimentation, and reflective dialogue can generate empirical design knowledge that is difficult to access through conventional qualitative methods alone.

4. Contribution to Policy and Future Research:

- The study provides an evidence base that can inform design education, sustainable fashion policy, and local bridal industry practices in Ghana. It highlights the value of integrating indigenous knowledge systems into contemporary design innovation and opens pathways for future research to extend long-term user behaviour and cross-cultural adaptation of multi-purpose bridal design models.

5. Practical and Design Contributions:

- At a practical level, the research proposes and validates a conceptual model for developing sustainable bridal gowns through user-centred co-design. The successful development and evaluation of multi-purpose bridal gown prototypes confirm the viability of kente wrapping as a non-destructive, adaptable, and reusable construction technique.
- The prototypes demonstrate that elaborate and culturally resonant bridal forms can be achieved without cutting or irreversible alteration, directly addressing the material waste and redundancy associated with conventional bridal gowns.
- Furthermore, the positive evaluation outcomes across sustainability, comfort, aesthetics, cultural significance, and commercial viability highlight the market potential of multi-purpose bridalwear within the Ghanaian context.

Overall, this study successfully demonstrates that user-centred, culturally grounded, and practice-led design approaches can effectively address the redundancy of bridal gowns while advancing sustainability, cultural relevance, and design innovation. Despite contextual and methodological limitations, the research makes a substantial contribution to sustainable fashion discourse and establishes a foundation for future exploration of indigenous, multi-purpose design strategies within global bridalwear systems.

7.5 Conclusions

This research set out to address the widespread redundancy of the white wedding gown within the Ghanaian marriage culture by investigating culturally grounded, sustainable alternatives through design. Guided by clearly defined objectives, the study combined theoretical inquiry with practice-

based, user-centred experimentation to demonstrate that bridalwear can be reconceptualised as adaptable, culturally meaningful, and environmentally responsible.

The findings confirm that the redundancy of white wedding gowns in Ghana is historically conditioned, culturally inherited, and reinforced by static, single-use design philosophies that marginalise user participation. By introducing the multi-purpose design concept, the study establishes versatility and adaptability as viable sustainability strategies capable of extending garment lifespan and reducing material waste. This was further strengthened through the application of the kente wrapping technique, which preserves textile integrity by avoiding cutting and enables multiple garment transformations from a single cloth.

Through the User-Centred Practice Workshop, the research empirically demonstrated that prospective users could successfully co-create elaborate bridal forms and transform them into multiple post-wedding garments without compromising aesthetic quality or cultural significance. This validates the effectiveness of user-centred design as both a methodological and practical tool for sustainable bridalwear development. The proposed conceptual model, supported by the successful development and evaluation of a prototype bridal gown, confirms the viability of integrating co-design, facilitation, and indigenous textile practices into contemporary bridal fashion systems.

While the study acknowledges limitations related to sample size, geographic specificity, and participants' cultural familiarity with kente, these constraints do not undermine the validity of the findings. Instead, they highlight the context-sensitive nature of culturally grounded design research. The methodological transparency and alignment with user-centred design principles ensure the robustness of the study and support the transferability of its approach to other culturally situated fashion contexts.

Overall, the research concludes that sustainable bridalwear in Ghana can be effectively achieved through a multi-purpose, user-centred, and culturally responsive design framework. By repositioning indigenous practices such as kente wrapping within contemporary fashion discourse, the study contributes a replicable and adaptable model that challenges Eurocentric bridal norms, addresses environmental concerns, and reinforces cultural continuity. The research thus advances sustainable fashion discourse, offers practical guidance for designers and industry stakeholders, and affirms the role of indigenous knowledge systems in shaping future-oriented, sustainable design practices.

7.6 Further Actions

Grounded in the study's objectives, findings, limitations, and contributions, the following further actions advance the practical, academic, and cultural implications of adopting multi-purpose, user-centred, and culturally embedded bridal design strategies within Ghana and comparable contexts:

7.4.1 Further Action for Married and Unmarried Individuals

- In light of the study's findings on the widespread redundancy of single-use white wedding gowns, married and unmarried individuals are encouraged to actively prioritise bridal garments designed for post-wedding adaptability. Selecting multi-purpose bridal gowns, particularly those developed through non-destructive techniques such as kente wrapping, enables continued use across multiple social occasions, thereby extending garment lifespan and enhancing sustainability outcomes.
- Prospective brides are further encouraged to engage in the design process as active collaborators rather than passive consumers. User involvement fosters emotional attachment, strengthens cultural identification, and supports long-term garment retention. Bridal garments conceived as adaptable cultural artefacts may also function as heritage, reinforcing intergenerational continuity while maximising both economic and symbolic value

7.4.2 Further Action for Historians and Cultural Scholars

- Fashion Given the study's identification of indigenous knowledge as central to sustainable innovation, fashion historians and cultural scholars should intensify efforts to document, archive, and critically analyse traditional wrapping, draping, and cloth-use practices. Such documentation is essential for preventing the erosion of indigenous design knowledge and for enabling its informed reinterpretation within contemporary fashion systems.
- Historians are also encouraged to foreground the historical presence of multi-purpose dress practices in African societies, thereby challenging Eurocentric narratives that frame adaptability as a modern innovation. Positioning indigenous techniques such as kente wrapping within sustainability discourse strengthens their legitimacy as both cultural and environmental assets.

7.4.3 Further Action for Clothing & Textile Teachers and Fashion Designers

- In response to the study's findings that conventional bridal design models marginalise user participation, clothing and textiles educators could integrate user-centred design (UCD), co-design methodologies, and indigenous textile practices into fashion education curricula. This will equip emerging designers with the conceptual and practical tools necessary to address sustainability challenges through culturally responsive design.
- Fashion designers are encouraged to adopt facilitation-based co-design processes that translate users' self-concept, cultural values, and functional needs into adaptable bridal forms. Designers should further explore wrapping, modular construction, and reversible garment systems as scalable alternatives to cut-and-sew methods. These approaches support sustainability by reducing material waste while offering commercially viable, culturally resonant design solutions.

7.4.4 Further Action for Industry Players (Ghana National Tailors and Dressmakers Association - GNTDA)

- As key intermediaries between tradition, craftsmanship, and market demand, industry bodies such as the Ghana National Tailors and Dressmakers Association (GNTDA) have a strategic role in expanding the study's findings. The association is encouraged to promote eco-conscious bridal production methods that prioritise fabric preservation, adaptability, and reuse.
- To support industry-wide adoption, GNTDA should facilitate professional development programmes focused on multi-purpose bridal design, user-centred co-creation, and indigenous wrapping techniques. Such initiatives would not only enhance Ghanaian bridalwear's technical capacity but also position it as both culturally distinctive and globally competitive within sustainable fashion markets.

7.4.5 Further Action for Policymakers

- In recognition of the study's contribution to sustainable fashion innovation, policymakers are encouraged to create enabling frameworks that support environmentally responsible and culturally grounded fashion practices. This may include financial incentives, grants, or recognition schemes for designers and enterprises that adopt sustainable, non-destructive production methods in bridalwear.
- Policies should also support partnerships between cultural institutions, fashion educators, and industry practitioners to facilitate knowledge transfer and innovation rooted in indigenous practices. By institutionalising support for culturally sustainable bridal design, policymakers can contribute to economic development, heritage preservation, and environmental stewardship simultaneously

7.7 Thesis Dissemination

During the research period of time, this study was published and shared with the scientific community through various seminars, international journals, conferences, and books. Refer to Appendix F-I for disseminations.

Publications of Abstract in Seminar:

1. Ibrahim, H., Lucas, J.M., Romãozinho, M., Moreira da Silva, F. (2022). Multi-Purpose Concept of Design: A Sustainable Strategy in Addressing the Widespread Redundancy of the "White Wedding Gowns" in the Ghanaian Culture. In: *Research Seminars in Fashion Design 2021*, Cunha, J., & Salvado, R. (Eds.), Guimarães, Portugal, 2C2T - University of Minho.

Publications as Book Chapters:

1. Ibrahim, H., Romãozinho, M., Moreira da Silva, F. (2025). Co-design as a Sustainable Design Thinking Approach in Addressing the Redundancy of the "White Wedding Gown" in Ghana. In: *Advances in Design, Music and Arts III, EIMAD 2024*. Raposo, D., Neves, J., Silva, R.,

- Correia Castilho, L., Dias, R. (eds), Springer Series in Design and Innovation, vol 48. Springer, Cham, pp. 52-66. https://doi.org/10.1007/978-3-031-74975-9_5
2. Ibrahim, H., Romãozinho, M., Moreira da Silva, F. (2025). Multi-Purpose Design Concept: A Sustainable Strategy in Extending the Life Cycle of “White Wedding Gowns” in Ghana. In: *Advances in Design, Music and Arts III. EIMAD 2024*, Raposo, D., Neves, J., Silva, R., Correia Castilho, L., Dias, R. (eds), Springer Series in Design and Innovation, vol 48. Springer, Cham, pp. 83-97. https://doi.org/10.1007/978-3-031-74975-9_7
 3. Ibrahim, H., Romãozinho, M., Moreira da Silva, F. (2024). The Ghanaian Wedding Industry: Review of Factors that Influence the Consumption of a Bridal Gown. In: *Advances in Fashion and Design Research II. CIMODE 2023*, Cunha, J., Broega, A.C., Carvalho, H., Providência, B. (eds), Springer, Cham, pp. 242-249. https://doi.org/10.1007/978-3-031-43937-7_21

Poster Presentation:

1. Ibrahim, H., Romãozinho, M., & Moreira da Silva, F. (2025). *Multi-purpose concept of design as a sustainable strategy in addressing the widespread redundancy of the white wedding gowns in the Ghanaian culture* [Poster presentation]. Arts and Design Panel Evaluation, Fundação para a Ciência e a Tecnologia (FCT), iA* Arts Research Unit, University of Beira Interior, Covilhã, Portugal. <https://www.iartes.ubi.pt>

Research Conference:

1. Ibrahim, H., Romãozinho, M., & Moreira da Silva, F. (2025). *Multi-purpose concept of design as a sustainable strategy in addressing the widespread redundancy of the white wedding gowns in the Ghanaian culture* [Conference presentation]. iD25: 2nd Design Research Days (II Jornadas de Investigação em Design). Wool Museum (MUSLAN), University of Beira Interior, Covilhã, Portugal. <https://www.iartes.ubi.pt>

References

- Aakko, M., & Koskennurmi-Sivonen, R. (2013). Designing sustainable fashion: Possibilities and challenges. *Research Journal of Textile and Apparel*, 17(1), 13–22. <https://doi.org/10.1108/RJTA-17-01-2013-B002>
- Abbott, S. (2008). *How to be a great screen printer: The theory and practices of screen printing* (S. Abbott, Ed.; 1st ed., Vol. 1). MacDermid Autotype Limited.
- Adeloye, A. A., Oladesu, J. O., Oyinloye, M. A., Sobowale, T. O., & Uzzi, F. (2023). Conservation of African craft through art entrepreneurship: Case study of Kente craft. *Gazi University Journal of Science Part B: Art, Humanities, Design and Planning*, 11(4), 675–688. <https://dergipark.org.tr/en/pub/gujsb/issue/82153/1289004>
- Ahirwar, M., & Behera, B. K. (2022). Fabric hand research translates senses into numbers—a review. *Journal of the Textile Institute*, 113(11), 2531–2548. <https://doi.org/10.1080/00405000.2021.1982190>
- Amankwah, A. M., Asinyo, B. K., & Frimpong, C. (2013). Design and construction of 3-D surface designed wedding gown made of natural fabrics suitable for the tropics: An alternative to the polyester satin wedding gown. *International Journal of Fiber and Textile Research*, 3(1), 36–42. <http://www.urpjournals.com>
- Asmah, A. E., Frimpong, C., & Asinyo, B. K. (2014). Adaptation of traditional symbols into bridal wear. *Art and Design Studies*, 19(1), 13–19
- Armstrong, C. M., & LeHew, M. L. A. (2011). Sustainable apparel product development: In search of a new dominant social paradigm for the field using sustainable approaches. *Fashion Practice*, 3(1), 29–62. <https://doi.org/10.2752/175693811X12925927157018>
- Armstrong, C. M., Niinimäki, K., & Lang, C. (2016). Towards design recipes to curb the clothing carbohydrate binge. *Design Journal*, 19(1), 159–181. <https://doi.org/10.1080/14606925.2016.1109207>
- Aus, R., Moora, H., Vihma, M., Unt, R., Kiisa, M., & Kapur, S. (2021). Designing for circular fashion: integrating upcycling into conventional garment manufacturing processes. *Fashion and Textiles*, 8(1). <https://doi.org/10.1186/s40691-021-00262-9>
- Brown, T., & Katz, B. (2009). *Change by design: How design thinking transforms organizations and inspires innovation*. Harper Business
- Bhawna, B., & Gobind, G. (2015). Research methodology and communication. *IOSR Journal of Research & Method in Education*, 5(3), 48–51. <https://doi.org/10.9790/7388-05344851>
- Boldt, R., & Carvalho, M. (2018). Virtual prototyping as an evaluation method for functional clothing. *IOP Conference Series: Materials Science and Engineering*, 460(1), 012040. <https://doi.org/10.1088/1757-899X/460/1/012040>
- Burch, R. L. (2019). The wedding as a reproductive ritual. *Review of General Psychology*, 23(3), 382–398. <https://doi.org/10.1177/1089268019832848>
- Bawa, J. A. K. (2015). Bride price in Ghana: An assessment of its social representations in selected communities in Northern Ghana. *UDS International Journal of Development*, 2(2), 77–87. <https://doi.org/10.47740/63.UDSIJD6i>
- Carter, J., & Duncan, S. (2017). Wedding paradoxes: Individualized conformity and the ‘perfect day.’ *Sociological Review*, 65(1), 3–20. <https://doi.org/10.1111/1467-954X.12366>
- Chammas, A., Quaresma, M., & Mont’Alvão, C. (2015). A closer look on the user centred design. *Procedia Manufacturing*, 3, 5397–5404. <https://doi.org/10.1016/j.promfg.2015.07.656>

- Connor-Crabb, A., & Rigby, E. D. (2019). Garment quality and sustainability: A user-based approach. *Fashion Practice*, 11(3), 346–374. <https://doi.org/10.1080/17569370.2019.1662223>
- Cool African. (2021, November 29). Everything I do is for the 17-year-old version of myself: Believing deeply in the power of art to inspire future generations – Virgil Abloh. <https://coolafricanmerch.com/blogs/coolafrican/everything-i-do-is-for-the-17-year-old-version-of-myself-believing-deeply-in-the-power-of-art-to-inspire-future-generations-virgil-abloh>
- Coscieme, L., Manshoven, S., Gillabel, J., Grossi, F., & Mortensen, L. F. (2022). A framework of circular business models for fashion and textiles: The role of business-model, technical, and social innovation. *Sustainability: Science, Practice, and Policy*, 18(1), 451–462. <https://doi.org/10.1080/15487733.2022.2083792>
- Cunha, J., & Broega, A. C. (2009). Designing multifunctional textile fashion. In *AUTEX 2009 World Textile Conference* (pp. 863–866). Guimaraes, Portugal. http://pt/bitstream/1822/19207/3/AUTEX09_JC_CB
- Dogbe, E. (2003). Warped identities: Dress in popular West African video films. *African Identities*, 1(1), 95–117. <https://doi.org/10.1080/1472584032000127905>
- Doody, O., & Bailey, M. E. (2016). Setting a research question, aim and objective. *Nurse Researcher*, 23(4), 19–23. <https://doi.org/10.7748/nr.23.4.19.s5>
- D'Souza, C. (2015). Marketing challenges for an eco-fashion brand: A case study. *Fashion Theory: The Journal of Dress, Body & Culture*, 19(1), 67–82. <https://doi.org/10.2752/175174115X14113933306824>
- Durrani, M., Ravnløkke, L., & Niinimäki, K. (2017). Shared emotional values in sustainable clothing design approaches. In R. Earley & K. Goldsworthy (Eds.), *Circular transitions proceedings: A Mistra Future Fashion conference on textile design and the circular economy* (pp. 81–91). University of the Arts London. <https://www.researchgate.net/publication/325581580>
- Duschinsky, R. (2012). Tabula rasa and human nature. *Philosophy*, 87(4), 509–529. <https://doi.org/10.1017/S0031819112000393>
- Elank, N. (2014). The white wedding: Affect and economy in South Africa in the early twentieth century. *Africa Studies Review*, 57(2), 29–50. <https://doi.org/10.1017/asr.2014.46>
- Earley, R. (2017). Designing fast & slow: Exploring fashion textile product lifecycle speeds with industry designers. *The Design Journal*, 20(sup1), S2645–S2656. <https://doi.org/10.1080/14606925.2017.1352776>
- Earley, R., & Goldsworthy, K. (2017). Playing for time: Seven practice-led workshop tools for making design decisions to extend the life of fashion textile materials and products. In C. A. Bakker & R. Mugge (Eds.), *PLATE 2017: Product lifetimes and the environment Conference Proceedings* (pp. 127–132). IOS Press. <https://doi.org/10.3233/978-1-61499-820-4-127>
- Ehrman, E. (2011). The wedding: 300 years of bridal fashion. V&A Publishing, Victoria and Albert Museum. <https://doi.org/10.1053/j.ajkd.2011.01.006>
- Fletcher, K., & Grose, G. (2012). Fashion and sustainability: Design for change (3rd ed., pp. 10–15). Hachette UK.
- Forkuor, J. B., Kanwetuu, V. D. P., Ganee, E. M., & Ndemole, I. K. (2018). Bride price and the state of marriage in North-West Ghana. *International Journal of Social Science Studies*, 6(9), 34–43. <https://doi.org/10.11114/ijsss.v6i9.3439>
- Friese, S. (2010). The wedding dress: From use value to sacred object. In *The wedding dress*. Berg. <https://doi.org/10.2752/9781847888921/thrward0008>

- Finley, A. (2016). *History of wedding dresses*. LoveToKnow. Retrieved October 19, 2021, from <https://weddings.lovetoknow.com/wiki/History>
- Fisher, H. (2015). *A brief history of 20th-century wedding dresses*. Barnebys. Retrieved October 19, 2021, from <https://www.barnebys.co.uk/blog/a-brief-history-of-20th-century-wedding-dresses>
- Gillot S. (1837). *Marriage of Charles VIII and Anne of Brittany, December 6, 1491*. Château de Versailles. https://collections.chateauversailles.fr/?permid=permobj_58d4a3ba-e323-4651-bf3d-1630db917aa0#/query/314a82d4-04b2-4b46-b17b-35c8e3c4foco
- Gnanapragasam, A., Oguchi, M., Cole, C., & Cooper, T. (2017). Consumer perspectives on product lifetimes: A national study of lifetime satisfaction and purchasing factors. In C. Bakker & R. Mugge (Eds.), *PLATE: Product lifetimes and the environment 2017 Conference Proceedings* (pp. 144–148). IOS Press. <https://doi.org/10.3233/978-1-61499-820-4-144>
- Goodale, P., Clough, P., Ford, N., Hall, M., Stevenson, M., Fernando, S., Aletras, N., & Fernie, K. (2012). User-centred design to support exploration and path creation in cultural heritage collections. Trailmeme. <https://www.trailmeme.com>
- Goodman-Deane, J., Langdon, P., & Clarkson, J. (2010). Key influences on the user-centred design process. *Journal of Engineering Design*, 21(2–3), 345–373. <https://doi.org/10.1080/09544820903364912>
- Gong, L. (2019). *Prototype creation of woven fabrics and garments with knit surface textures* (PhD thesis, Department of Textiles and Fashion, The Hong Kong Polytechnic University). <http://www.lib.polyu.edu.hk/handle/200/9993>
- Gulliksen, J., Göransson, B., Boivie, I., Blomkvist, S., Persson, J., & Cajander, Å. (2003). Key principles for user-centred systems design. *Behaviour and Information Technology*, 22(6), 397–409. <https://doi.org/10.1080/01449290310001624329>
- Gunn, A. V. (1994). Victorian History Painting and a Religious Controversy. *JSTOR*, 53(1), 2–32. <http://www.jstor.org/stable/3774681>
- Ibrahim, H., Romãozinho, M., & Moreira da Silva, F. (2024). Multi-purpose design concept: A sustainable strategy in extending the life cycle of “white wedding gowns” in Ghana. In D. R. Raposo (Ed.), *EIMAD’24 - 9th International Meeting of Research in Music Arts and Design* (pp. 83–97). Springer Nature. https://doi.org/10.1007/978-3-031-74975-9_7
- Hur, E. S. (2014). *Design and optimisation of a user-engaged system for sustainable fashion: Declaration of originality* (PhD thesis, School of Design, University of Leeds, Leeds, UK, pp. 41–42). <https://etheses.whiterose.ac.uk/6323/>
- Hutchings, J. (2004). Colour in folklore and tradition – the principles. *Color Research and Application*, 29(1), 57–66. <https://doi.org/10.1002/col.10212>
- Imbuwa, I., & Celikkol, Y. Y. (2024). Tailoring modernity and wrapping tradition: Chitenge [African print fabric] class and culture in Zambia. *Fashion Theory - Journal of Dress Body and Culture*, 28(4), 505–527. <https://doi.org/10.1080/1362704X.2024.2363091>
- Ingraham, C. (2009). *White weddings: Romancing heterosexuality in popular culture*. Routledge
- Istook, C. L. (2000). Rapid prototyping in the textile & apparel industry: A pilot project. *Journal of Textile and Apparel, Technology and Management*, 1(1), 1–14.
- James, A. M., Reitsma, L., & Aftab, M. (2019). Bridging the double-gap in circularity: Addressing the intention-behaviour disparity in fashion. *Design Journal*, 22(sup1), 901–914. <https://doi.org/10.1080/14606925.2019.1595407>

- Jevšnik, S. (2017). 3D virtual prototyping of garments: Approaches, developments and challenges. *Journal of Fiber Bioengineering and Informatics*, 10(1), 51–63. <https://doi.org/10.3993/jfbim00253>
- Schaefer, K. (2013). *The sustainable bride: An exploration in conceptual bridal design* (Master's thesis, Department of Fashion, Ryerson University, Toronto, Ontario, Canada, pp. 1–28). https://rshare.library.torontomu.ca/articles/thesis/The_sustainable_bride_an_exploration_in_conceptual_bridal_design/14645253/
- Koopmans, R., & Statham, P. (2010). Theoretical framework, research design, and methods. In R. Koopmans & P. Statham (Eds.), *The making of a European public sphere: Media discourse and political contention* (pp. 34–59). Palgrave Macmillan.
- Kozłowski, A., Searcy, C., & Bardecki, M. (2018). The reDesign canvas: Fashion design as a tool for sustainability. *Journal of Cleaner Production*, 183, 194–207. <https://doi.org/10.1016/j.jclepro.2018.02.014>
- Kuleli, S., & Bahadır Ünal, Z. (2018). A research on modular product development in wedding gown production. *Textile and Apparel*, 28(1), 80–88. <https://dergipark.org.tr/en/pub/tekstilvekonfeksiyon/issue/36384/411638>
- Kwon, S. H. (2017). Green can be the new white for wedding dresses. *Design Journal*, 20(5), 595–616. <https://doi.org/10.1080/14606925.2017.1349410>
- Kolko, J. (2010). Abductive thinking and sensemaking: The drivers of design synthesis. *Design Issues*, 26(1), 15–28. <https://doi.org/10.1162/desi.2010.26.1.15>
- Khatib, M., & Ghannadi, M. (2011). Interventionist (explicit and implicit) versus non-interventionist (incidental) learning of phrasal verbs by Iranian EFL learners. *Journal of Language Teaching and Research*, 2(3), 537–546. <https://doi.org/10.4304/jltr.2.3.537-546>
- Leeds-Hurwitz, W. (2002). *Wedding as text: Communicating cultural identities through ritual*. Routledge.
- Legere, A., & Kang, J. (2020). The role of self-concept in shaping sustainable consumption: A model of slow fashion. *Journal of Cleaner Production*, 258, 120699. <https://doi.org/10.1016/j.jclepro.2020.120699>
- Lithner, J. (2008). A research framework for creative and imitative reasoning. *Educational Studies in Mathematics*, 67(3), 255–276. <https://doi.org/10.1007/s10649-007-9104-2>
- Lofthouse, V., & Prendeville, S. (2018). Human-centred design of products and services for the circular economy—a review. *Design Journal*, 21(4), 451–476. <https://doi.org/10.1080/14606925.2018.1468169>
- Lucotti, M. E. (2016). *The threads, trends and threats of the wedding dress: A collaborative, studio-based dissertation* (PhD thesis, Department of Art Education, Concordia University). <https://spectrum.library.concordia.ca/id/eprint/980984/>
- Lu, X., & O'Reilly, M. J. (2024). Applying user-centered design principles to the development of wearable technology in fashion design. *Studies in Art and Architecture*, 3(2), 10–16. <https://doi.org/10.56397/saa.2024.06.03>
- Marti, P., & Bannon, L. J. (2009). Exploring user-centred design in practice: Some caveats. *Knowledge, Technology & Policy*, 22(1), 7–15. <https://doi.org/10.1007/s12130-009-9062-3>
- Matthews, B., & Ross, L. (2010). *Research methods: A practical guide for the social sciences* (1st ed., Vol. 1). Pearson Education Limited
- McBee-Black, K. (2022). “Making life easier”: A case study exploring the development of adaptive apparel design innovations from a user-centered approach. *Fashion Practice*, 14(2), 203–224. <https://doi.org/10.1080/17569370.2022.2031011>

- McNeill, L. S., & Zaichkowsky, J. L. (2025). Introduction to the special issue: Fashion and (un)sustainable behavior. *Journal of Sustainable Marketing*, 6(1), 1–4. <https://doi.org/10.51300/JSM-2025-150>
- Milburn, J. (2017b). Slow clothing culture. *Journal of the Home Economics Institute of Australia (HEIA)*, 24(2), 2–10. https://textilebeat.com/wp-content/uploads/2018/01/Jane-Milburn-HEIA_Vol-24-No2-FINAL.pdf
- Muzeja, Č. (2009). *Africa – Studies in Art Culture* (I. Epštajn, Trans.). *Journal of the Museum of African Art*, 1(1), 41–56. <http://www.museumofafricanart.org>
- Niinimäki, K. (2009). Developing sustainable products by deepening consumers' product attachment through customizing. In J. Suominen, F. Piller, M. Ruohonen, M. Tseng, & S. Jacobson (Eds.), *Mass Matching – Customization, Configuration & Creativity: Proceedings of the 5th World Conference on Mass Customization & Personalization MCPC2009* (pp. 5–6). Aalto University School of Art and Design
- Niinimäki, K. (2018). *Sustainable fashion in a circular economy* (M. Aakko, C. Cole, C. Henniner, A. Kent, & R. Raisanen, Eds.; 1st ed.). Aalto ARTS Books
- Niinimäki, K., & Hassi, L. (2011). Emerging design strategies in sustainable production and consumption of textiles and clothing. *Journal of Cleaner Production*, 19(16), 1876–1883. <https://doi.org/10.1016/j.jclepro.2011.04.020>
- Niinimäki, K., & Koskinen, L. (2011a). I love this dress, if it makes me feel beautiful! Empathic knowledge in sustainable design. *Design Journal*, 14(2), 165–186. <https://doi.org/10.2752/175630611X12984592779962>
- Ofori, E. A., Tawiah, B., Asinyo, B. K., Adomako, K. A., & Eghan, B. (2023). The exploration of near-extinct indigenous Ghanaian cultural symbols for interior decoration. *Cogent Arts & Humanities*, 10(1), 2243715. <https://doi.org/10.1080/23311983.2023.2243715>
- Osseo-Asare, A. D. (2021). Kwame Nkrumah's suits: Sartorial politics in Ghana at independence. *Fashion Theory: The Journal of Dress, Body & Culture*, 25(5), 597–632. <https://doi.org/10.1080/1362704X.2021.1878591>
- Otnes, C. C., & Pleck, E. (2003). *Cinderella dreams: The allure of the lavish wedding* (Vol. 2). University of California Press.
- Pan, N. (2007). Quantification and evaluation of human tactile sense towards fabrics. *International Journal of Design & Nature and Ecodynamics*, 1(1), 48–60. <https://doi.org/10.2495/D&N-V1-N1-48-60>
- Park, Y. S. (2019). Development of rental children's dress using the abandoned wedding dress II. *패션비즈니스*, 23(4), 86–99. <https://doi.org/10.12940/jfb.2019.23.4.86>
- Phan, H. B. M., & Ghalachyan, A. (2025). Design and evaluation of modular wedding dresses: Towards circularity in the bridalwear industry. *International Textile and Apparel Association Annual Conference Proceedings*, 81(1). <https://doi.org/10.31274/itaa.18560>
- Schulze, M., Gjostein, A., & Remoy, S. H. (2007). *The UK bridal wear market* [Report for Agape]. Leeds Metropolitan University. <https://9pdf.net/article/segmenting-and-targeting-agape-theuk-bridal-wear-market.z1dl4893>
- Rahman, O., & Gong, M. (2016). Sustainable practices and transformable fashion design – Chinese professional and consumer perspectives. *International Journal of Fashion Design, Technology and Education*, 9(3), 233–247. <https://doi.org/10.1080/17543266.2016.1167256>
- Riedl, K., & Raffetseder, S. (2025). Collaborative consumption models in bridal fashion: An investigation of factors influencing the decision-making process of female consumers. *Journal of Sustainable Marketing*, 6(1), 166–182. <https://doi.org/10.51300/JSM-2025-145>

- Rovine, V. L. (2016). Style migrations: South-south networks of African fashion. *Artl@s Bulletin*, 5(2), Article 4. <https://docs.lib.purdue.edu/artlas/vol5/iss2/4/>
- Rovine, V. L. (2015). *African fashion, global style: Histories, innovations, and ideas you can wear*. Indiana University Press
- Royal Anthropological Institute. (1951). *Notes and queries on anthropology* (B. Z. Seligman, Ed.; 6th ed.). Routledge & Kegan Paul Ltd
- Schaefer, K., & Navarro, H. (2016). Sustainable bridal and beyond: Using non-traditional design techniques to extend garment life and eliminate waste. In *Fashion: Tyranny and revelation* (pp. 421–440). Brill. https://doi.org/10.1163/9781848884830_023
- Shamsuzzaman, M., Al Mamun, M. A., Hasan, H. M. R. U., Hassan, R., Zulkernine, A., Atik, M. A. R., & Islam, M. (2025). Fashion circularity: Potential of reusing and recycling remnant fabric to create sustainable products. *Sustainability*, 17(5), Article 2010. <https://doi.org/10.3390/su17052010>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Sterling, C. (2021). The art and times of Abdias Nascimento: Quilombola extraordinaire. *Journal of Black Studies*, 52(6), 643–662. <https://doi.org/10.1177/00219347211006482>
- Suhartini, R., Singke, J., & Danardewi, A. (2020). Upcycling wedding gowns: Development of design, materials and ornaments. In *Proceedings of the ICRACOS 2019* (Vol. 390, pp. 18–24). Atlantis Press. <https://doi.org/10.2991/icracos-19.2020.4>
- Swedberg, R. (2018). On the uses of exploratory research and exploratory studies in social science. In J. Gerring, C. Elman, & J. Mahoney (Eds.), *Producing knowledge: An essay on the social and epistemological life of research* (pp. 1–37). Cambridge University Press & Assessment.
- Szentgyörgyvölgyi, R., Novotny, E., & Weimert, M. (2018). Determining and selecting screen printing form parameters for printing on paper and textiles. *Proceedings of the 9th International Symposium on Graphic Engineering and Design*, 347–349. <https://doi.org/10.24867/GRID-2018-p42>
- Tawfiq, W., & Marcketti, S. (2017). Meaning and symbolism in bridal costumes in Western Saudi Arabia. *Clothing and Textiles Research Journal*, 35(3), 215–230. <https://doi.org/10.1177/0887302X17704718>
- Terian, S. K. (2004). Marriage rituals. In F. A. Salamone (Ed.), *Encyclopedia of religious rites, rituals and festivals* (pp. 230–236). Routledge.
- Thomas, L. J., Hancock, C., & Boardman, R. (2025). Theorising intention to buy second-hand wedding dresses: A ZMET study. *Journal of Marketing Management*, 41(13–14), 1312–1340. <https://doi.org/10.1080/0267257X.2025.2558906>
- Tordzro, N. D. (2021). *Decolonising African costume and textiles: Naming, symbols and meaning in the Ghanaian context* (MPhil(R) thesis, University of Glasgow). <https://doi.org/10.5525/gla.thesis.82319>
- Tu, J.-C., & Chang, H.-T. (2017). A study on the attractiveness factors of wedding dresses. *International Journal of Affective Engineering*, 16(3), 231–241. <https://doi.org/10.5057/ijae.ijae-d-16-00046>
- Tuhkala, T., Tuomaala, T., & Määttä, H. (2019). *Practical guide to screen printing in printed electronics* (ePooki 48). Oulu University of Applied Sciences. <http://urn.fi/urn:isbn:978-951-597-174-6>

- Vilarinho, S. (2019). *Capulana in a D4S perspective: Identity, tradition and fashion-able challenges in the 21st century* (Doctoral dissertation, Faculdade de Arquitectura, Universidade de Lisboa). <http://hdl.handle.net/10400.5/18171>
- Vuletich, C. (2012). We are disruptive: New practices for designers in the fashion/textile lifecycle. Paper presented at the 10th European Academy of Design Conference, *Crafting the Future*, University of Gothenburg, Sweden.
- Wilkinson, C. R., & De Angeli, A. (2014). Applying user centred and participatory design approaches to commercial product development. *Design Studies*, 35(6), 614–631. <https://doi.org/10.1016/j.destud.2014.06.001>
- Williams, A. (2012, December 3). *Kente cloth: Ghana's Ashanti cultural heritage to the world's fashion civilization. Trip Down Memory Lane*. <https://kwekudee-tripdownmemorylane.blogspot.com/2012/12/kente-cloth-ghanas-ashanti-cultural.html>
- Wilson, G. J., Coleman, A. C., Lawton, P. H., & Price, A. (2021). Liberation Kitchen: Annotating intergenerational conversations among Black women in art and education. *International Journal of Lifelong Learning in Art Education*, 4, Article 7. <https://doi.org/10.25889/deys-ab90>
- Worbin, L. (2010). *Designing dynamic textile patterns* (Doctoral dissertation, Chalmers University of Technology, Gothenburg, Sweden). <https://urn.kb.se/resolve?urn=urn:nbn:se:hb:diva-3550>
- Zoi, A., & Gasouka, M. (2014). The traditional evolution of style and especially of color of bridal dresses in different cultures during the centuries. *Journal of Educational and Social Research*, 4(4), 264–269. <https://doi.org/10.5901/jesr.2014.v4n4p264>

Appendix A

Interview Guide for Married and Yet to be Married Couples

Dear Sir/Madam,

I am currently pursuing a PhD in Fashion Design at the Universidad da Beira Interior - Portugal. The purpose of the study is to:

1. To find answers to the redundancy of bridal gowns for extended life within the Ghanaian marriage culture, by considering the application of more sustainable design principles (multi-purpose concept of design) for the production of circular bridal gowns that can reduce the asymmetry between rich and poor countries, and the affirmation of Ghanaian culture.
2. to produce a sample sustainable prototype bridal gown connected to Ghanaian culture and economic conditions.

This interview guide is designed to collect information to address the study objective. Please, you are part of a representative sample for the project, and your contribution and expert response are critical to the success of the project. As I recognise your busy schedules, I will sincerely appreciate your efforts in answering these pertinent questions. All your responses will be kept anonymous and confidential.

Thank you for your time.

Ibrahim Haruna

PART 1: BIO-DATA

1. Where do you live?.....
2. What is your profession?.....
3. What is your religious denomination?.....
4. Are you married? Yes No If, No. When do you intend to marry?
(a) Less than 1 year (b) Between (1 – 3) years (d) Later
5. What is your age range? (a) Less than 25 (b) 25 to 34 (c) 35 to 44 (d) 45 to 54
(e) 55 to 60
6. What is your level of education? (a) JSS (b) SHS (c) Tertiary level (d) Other.....

PART 2: PRODUCTION OF SUSTAINABLE BRIDAL GOWNS (MULTI-PURPOSE CONCEPT)

7. When you got married or are about to get married, what was or will be your type of wedding approach?
 (a) Traditional wedding (b) 'white wedding' (c) Other:.....
8. If (a) or (b), where is your wedding gown? Or what will you do with it after married?
 (a) (b) stored (c) pass it on (d) re-use (e) others....
9. Did you hire a wedding gown when you got married, or like to hire a wedding gown when you are about to get married? (a) Yes (b) No
10. Did you purchase a brand-new wedding gown when you got married, or like to purchase a brand-new gown when you are about to get married? (a) Yes (b) No
 If "Yes" in terms of cost, what was the price of your wedding gown when you got married? Or the price you would like to purchase when getting married?
 (a) below GhC600 (b) GhC600- GhC1000 (c) GhC1001-GhC1500
 (d) Above GhC1500
11. What was the style of sewing of your wedding? Or what style of sewing would you prefer your wedding gown to be? (a) Simple (b) Moderate (c) Complex
12. What type of fabric was your bridal gown made of? Or which type of fabric will you prefer your bridal gown to be made of when getting married? (a) local fabrics (b) foreign fabrics
13. Would you prefer a bridal gown that can be used for different occasions after your marriage?
 (a) Yes (b) No
14. How would a multi-purpose bridal gown influence your purchase intention when getting married?

		Yes	No	Sometimes
1.	A sustainable bridal gown would play an important role in buying a wedding gown.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	I will buy a sustainable bridal gown at the expense of my social status.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Regardless of my lifestyle, I will patronise sustainable bridal gowns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Irrespective of peer influence, I will have strong purchasing choices for a sustainable bridal gown.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	It may affect my image, but I prefer to purchase a sustainable bridal gown.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	I will attach much value to a sustainable bridal gown.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	I will always repel the information which is against sustainable bridal gowns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	I will feel comfortable with the usage of a sustainable bridal gown.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	I feel proud of the purchase of a sustainable bridal gown.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Would you recommend a bridal gown that can be used for different occasions other than its original purpose to a would-be bride? (a) Yes No

THANK YOU

Appendix B

Interview Guide for Industry Players and Fashion Teachers

Dear Sir/Madam,

I am currently pursuing a PhD in Fashion Design at the Universidad da Beira Interior - Portugal. The purpose of the study is to:

1. To find answers to the redundancy of bridal gowns for extended life within the Ghanaian marriage culture, by considering the application of more sustainable design principles (multi-purpose concept of design) for the production of circular bridal gowns that can reduce the asymmetry between rich and poor countries, and the affirmation of Ghanaian culture.
2. to produce a sample sustainable prototype bridal gown connected to Ghanaian culture and economic conditions.

This interview guide is designed to collect information to address the study objective. Please, you are part of a representative sample for the project, and your contribution and expert response are critical to the success of the project. As I recognise your busy schedules, I will sincerely appreciate your efforts in answering these pertinent questions. All your responses will be kept anonymous and confidential.

Thank you for your time.

Ibrahim Haruna

PART 1: BIO-DATA

1. What is your gender? Male Female Prefer not to say
2. What is your age range? (a) Less than 25 (b) 25 to 34 (c) 35 to 44 (d) 45 to 54 (e) 55 to 60
3. What is your level of education? (a) JSS (b) SHS (c) Tertiary level (d) Other.....
4. What is your marital status? (a) Married (b) Single (c) Divorced
5. How long have you been teaching/a fashion designer? _____ (years)

PART 2: PRODUCTION OF SUSTAINABLE BRIDAL GOWNS (MULTI-PURPOSE CONCEPT)

6. What can you say about the redundancy of bridal wedding gowns within the Ghanaian marriage culture?

.....
.....

7. Have you ever received any bridal gown from a married couple for modification?
 (a) Yes No
 If "Yes", how was it made? (a) Simple (b) Moderate (c) Complex
8. Do you currently sew bridal gowns as a fashion designer? (a) Yes (b) No
 a. If "Yes", do you sew the gown according to demand? (a) Yes (b) No
 b. Does the client influence the design of the gown (e.g., specifications)
 (a) Yes (a) No
9. Regarding the current trend, do you see the need for a sustainable wedding gown?
 (a) Yes (b) No
10. What style do you think the sustainable bridal gown should be designed with?
 (a) Traditional concept (b) European concept (c) Combination of traditional and European concept
11. What would be the cost in designing a bridal gown that can be used for different occasions other than its original purpose for a would-be bride
 (a) below GhC600 (b) GhC600- GhC1000 (c) GhC1001-GhC1500
 (d) Above GhC1500
12. Have you ever designed a multi-purpose wedding gown before? (a) Yes (b) No
13. From the look of things, should the clients be involved in the design of the multi-purpose wedding gown?
 (a) fully involve (b) partly involve (c) Not involve
14. Do you think designing a sustainable wedding gown is a major concern?
 (a) Yes (b) Partly (c) No (d) Highly so
15. What factors account for your choice of answer in question 14?
- | | Yes | No |
|---|--------------------------|--------------------------|
| 1. Extend the life of the bridal wedding gown. | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. A bridal gown can be used for different occasions. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Gives good for the bride's money spent on the bridal gown | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. A sustainable bridal wedding gown is good for the environment. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Ghanaian culture can be maintained through the design of the sustainable wedding gown. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Reduces waste in the design of the bridal gown | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Reduce the redundancy of the bridal wedding gown. | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Comfortable to wear on an ordinary day | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Incorporating the needs and values of the bride | <input type="checkbox"/> | <input type="checkbox"/> |
16. Would you recommend a bridal gown that can be used for different occasions other than its original purpose to a would-be bride? (a) Yes No

THANK YOU

Appendix C

Interview Guide for Historians

Dear Sir/Madam,

I am currently pursuing a PhD in Fashion Design at the Universidad da Beira Interior - Portugal. The purpose of the study is to:

1. To find answers to the redundancy of bridal gowns for extended life within the Ghanaian marriage culture, by considering the application of more sustainable design principles (multi-purpose concept of design) for the production of circular bridal gowns that can reduce the asymmetry between rich and poor countries, and the affirmation of Ghanaian culture.
2. to produce a sample sustainable prototype bridal gown connected to Ghanaian culture and economic conditions.

This interview guide is designed to collect information to address the study objective. Please, you are part of a representative sample for the project, and your contribution and expert response are critical to the success of the project. As I recognise your busy schedules, I will sincerely appreciate your efforts in answering these pertinent questions. All your responses will be kept anonymous and confidential.

Thank you for your time.

Ibrahim Haruna

PART 1: BIO-DATA

1. What is your gender? Male Female Prefer not to say
2. What is your age range? (a) Less than 25 (b) 25 to 34 (c) 35 to 44 (d) 45 to 54 (e) 55 to 60
3. What is your level of education? (a) First degree (b) Masters degree (c) PhD (d) Other.....
4. What is your marital status? (a) Married (b) Single (c) Divorced

PART 2: PRODUCTION OF SUSTAINABLE BRIDAL GOWNS (MULTI-PURPOSE CONCEPT)

5. What types of dress code were used by brides during their wedding day over the years, among the Akans?

.....

.....

6. How relevant were the traditional textiles (kente and adinkra) in the fashion or dresses of brides during their wedding ceremonies, among the Akans?

.....
.....

7. What are the meanings and significance attached to the various forms of dresses used by brides?

.....
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.....
.....

8. Have there been any changes in the wedding dress in this current era?

.....
.....

9. What do you think are the major causes of Ghanaians adopting the style of wearing the 'white wedding gown' during marriage ceremonies despite their economic conditions?

.....
.....
.....

10. What can you say about the redundancy of the white wedding gown within the Ghanaian marriage culture?

.....
.....
.....

11. Do you agree that the white wedding gown is an example of a disposable garment available on the Ghanaian market, despite the time, effort and money spent in its creation

(a) Yes (b) No

12. Do you think the multi-purpose concept of designing a wedding gown would help to eliminate the redundancy of the white wedding gown within the Ghanaian marriage culture?

(a) Yes (b) No

If "Yes",
how.....

.....

13. Do you think there is a need to incorporate the needs and values of the bride as a way of developing a sustainable wedding gown?

(a) Yes (b) No

Please, can you provide any additional comments?

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THANK YOU

Appendix D

Observation Checklist

Multi-purpose Bridal Gown Evaluation Criterion

Indicators	Observation	Yes	Neutral	No	Comments
Sustainability	Easily convertible for different occasions	[]	[]	[]	
	Used locally sourced materials/resources	[]	[]	[]	
	The gown is designed for long-term use, reducing the need for frequent replacements.	[]	[]	[]	
	Encourages slow consumption	[]	[]	[]	
Cultural Value	Elements of the gown reflect cultural traditions and heritage.	[]	[]	[]	
	The used symbols, patterns, or motifs hold cultural significance.	[]	[]	[]	
	The gown tells a story or conveys a message that resonates with cultural values.	[]	[]	[]	
	Options for customisation to align with specific cultural or religious wedding practices.	[]	[]	[]	
Innovation	The gown's design is unique and incorporates innovative features that set it apart from traditional bridal gowns.	[]	[]	[]	
	The gown can be converted into different styles or outfits, such as turning into evening wear or casual attire.	[]	[]	[]	
	New or technologically advanced fabrics were used in designing the gown for aesthetic appeal.	[]	[]	[]	
	Inclusion of pockets, detachable trains, or adjustable elements enhances functionality.	[]	[]	[]	
Novelty	The gown offers a fresh, modern look that captures attention and sets trends.	[]	[]	[]	
	Incorporation of unique artistic details, such as hand-painted designs, unusual embellishments.	[]	[]	[]	
	Unexpected features that delight and surprise, such as reversible designs or detachable components.	[]	[]	[]	
	The gown has the potential to influence future bridal fashion trends.	[]	[]	[]	
Usefulness	The gown can be adapted for various occasions beyond the wedding day.	[]	[]	[]	

	There are features that allow the gown to be adjusted for different fits, styles, or functions.	[]	[]	[]	
	Built-in support structures (e.g., corsetry, bra cups) that provide comfort and ease of use.	[]	[]	[]	
	The gown is easy to clean and maintain, with materials that are resistant to stains and wear.	[]	[]	[]	
Commercial Viability	The design caters for a diverse range of body types, skin tones, and cultural backgrounds.	[]	[]	[]	
	The gown is produced at scale without compromising quality or sustainability.	[]	[]	[]	
	The gown fits within the brand's existing portfolio and values.	[]	[]	[]	
	The gown can stand out in a crowded market through unique selling points.	[]	[]	[]	
Comfort	The traditional gown is comfortable to wear				
Aesthetical beauty	The traditional gown is aesthetically beautiful.				

Appendix E

Evaluation Session

<https://drive.google.com/file/d/1FFSeWkYy9Mzmerfm7HywdeoFJshLSGyw/view?usp=sharing>

Appendix F

Publications of Abstract in Seminar

38

Programa Doutoral em Design de Moda

Programa Doutoral em Design de Moda

39

SEMINÁRIO DE INVESTIGAÇÃO EM DESIGN DE MODA
2020-21

Haruna Ibrain,
PhD Student

MULTI-PURPOSE CONCEPT OF DESIGN: A SUSTAINABLE STRATEGY IN ADDRESSING THE WIDESPREAD OF REDUNDANCY OF THE "WHITE WEDDING GOWNS" IN THE GHANAIAN CULTURE

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Most sustainable practices and models exist in the "slow" life, locally led, organic and do it right, sustainability and circularity local business strategy. In global, industrial growth and development of which the clothing and textile industry cannot be left out. The clothing and textile industry is considered to be the second most polluting in environment, pollution to the oil industry, with its carbon footprint of 14 billion tons industry to a linear economic system. The resulting need of the designers to respond to the clothing industry calls for the multi-purpose concept of design to reduce the level of clothing, encourage sustainable consumption, and also gear towards green and better formation of a circular economy. The dress, gown profession of the commercial clothing items that is often been dispose-off prematurely or become out of fashion or obsolete expenses are over, the trend that it has become out of the way to be, regardless of the time, money and other resources invested in its design and production. The consumption behaviour is influenced by the local innovative



design thinking approaches and able to take or incorporating the needs and values of the society of culture through design. This study is qualitative and the data employed the phenomenological approach, an interpretative and "non-interventional" research methods in addressing the study objectives. The focus focuses on addressing the research objectives. The focus is on the culture of the wardrobe of "wedding gowns" for extended life within the Ghanaian marriage culture, by considering the application of more sustainable design principles, such as circular economy of design for the production of circular dress, gowns that can reduce the waste and carbon footprint of production and the elimination of "throwaway culture" to be more eco-friendly and sustainable prototype dress, gown connected to Ghanaian culture and economic conditions. This study find out of country focus with a very low income population living in rural areas in poor conditions and fashion solutions should be more affordable, versatile and with a longer life cycle.




Keywords: Fashion design, multi-purpose design, Ghanaian marriage culture, sustainable clothing design, dress, gown, lifestyle.

Appendix G

Publications in a Book Chapter



The Ghanaian Wedding Industry: Review of Factors that Influences the Consumption of a Bridal Gown

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Abstract. The bridal gown is one of the most highly symbolic objects in the contemporary wedding market that is all-encompasses with key issues influencing consumer behaviour. The study reviewed factors that influences the consumption of bridal gowns in Ghana. A quantitative research approach and analysis of results is employed as depicted in my Ph.D. thesis. This study is an extract of the explorative phase of my Ph.D. thesis that extensively reviewed related literature on practices and consumption of bridal gowns to assess and affirm the current evidence that pertains in designing for longevity in the bridal gown industry. The population for the study is 300 married and yet-to-be married couples. Convenient sampling technique was used to select 230 out of 300 representing 76.7% response rate. The study concluded that influencing factors were apparent and deciding factors that drive consumers' consumption of bridal gown in Ghana. This implying that, manufacturers and marketers could introduce product differentiation using these influencing factors. This sociological approach was fundamental for understanding Ghanaian women opinion and needs to identify sustainable strategies that fashion designers can consider when designing a bridal gown for this specific territory with strong traditions.

Keywords: Bridal gown · Consumption · Design · Ghanaian culture

1 Introduction

Fashion in the light of globalization, is a \$1.75 trillion industry with the sales of many major fashion brands growing rapidly worldwide of which bridal gown industry is not an exception. Bridal gowns are more than simply just a style. According to (Cecil, 2014), the modern study of weddings and bridal gown and it associated influences in the modern society in terms of consumption was first depicted in Ingraham's White Weddings "Romancing Heterosexuality in Pop Culture" in 1999. His study was more about how the acceptable parameters of wedding ceremonies are established in popular

culture through wedding themes that permeate entertainment and advertising. Ingraham also points to the mind-boggling revenue generated by the wedding industry ranging from gown, diamond, and wedding décor sub-industries. In a similar vein, Kalmijn (2004) confirms that the expression of happiness that newly wedding couples and families feel about the marriage affect consumption plan by socializing the bride and groom into their marriage in an elaborate fashion.

In Ghana, one can find fashion in bridal gown, either through the style of dress, type of fabric, or style of accessories (Alabi, 2020). Brides are not only wearing world fashions, but they are also actively revising world fashions to suite their own tastes and preferences. One such example was featured in the 1956 article from the *Sunday Mirror* “New Styles in Frocks for Brides”. As Takyiwa described, “in a society wedding in Accra, the bride sprang a welcome surprise on fashion-mongers when she turned up in a short white wedding gown. The dressmaker used 65 yards of embroidery in designing the gown (Takyiwa, 1956: 4). As Takyiwa asserted, “A discriminating bride and a competent dressmaker combined to give the fashionable white wedding gown”.

The prominence given to world’s fashion by brides suggests that they directly influenced by numerous factors encouraging brides to emulate the styles of world fashion that is distant from Ghanaian traditions. There are different styles of bridal gown made to embody the any figure type of Ghanaian woman; thus, there is a lot of fashionable bridal gown to choose from as a Ghanaian woman who is getting married. The fluidity of the Ghanaian wedding gown fabric makes the voluptuous Ghanaian bride a sight to behold (Alabi, 2020). While the bride is the main view, the wedding gowns are made to match the bride.

Ghana is a third world country faced with a very low socio-economic problem, many families live in poor conditions and fashion solutions should be more sustainable, versatile and connected to their culture and economic conditions.

This study is an extract of my Ph.D. thesis as earlier on indicated and the thesis seeks to contribute knowledge in responsible consumption and production in the Fashion Design field, as stipulated in the seventeen Sustainable Development Goals formulated by United Nations (Agenda, 2030). The primary research question is: how can the involvement (co-design) of the wearers of clothes, particularly in the bridal gown conception be a source of design thinking techniques that will influence the multiplicity of usage?

2 Literature Review

The business of fashion and luxury goods and services has always been on the sport light in consumer marketing. According to (Taylor & Costello, 2017) recent years have seen considerable increase in the desire of customers to acquire luxury goods, including those that can be described as fashion products. One important motivating force that influences a wide range of consumer behavior towards the selection and buying of bridal gowns is the desire to gain status or social prestige from the acquisition and consumption. More often not, yet-to be couples purchase expensive and luxury goods and services to display their social standing during their ceremony. In addition, individuals purchase status products to fulfil their material desires and reinforce their group identity (Madinga, Maziriri, &

Lose, 2016). Bridal gown and its consumption can be influenced by psychological, personal, economic, social and cultural factors.

2.1 Influence of Psychological Factors in Bridal Consumption

Bridal gown consumption is influenced by psychological factors such as motivation, perception, learning, beliefs, and attitudes (Guan, Luo & Tangi, 2015). Individuals have many needs at any given point in time. These needs can be physical or psychological. The need for recognition, esteem, and belongingness are examples of psychological needs. Madinga, Maziriri and Lose (2016) mentioned that the perception, feelings, beliefs, and attitudes influence a person consumption of bridal gown.

2.2 Influence of Personal Factors in Bridal Consumption

Personal factors are psychological characteristics of a person that are different from others that cause relatively consistent and enduring responses to the environment. Consumers buying decisions are also influenced by personal characteristics, namely age and life cycle stage, occupation, economic situation, lifestyle, personality, and self-concept. Min, Ceballos and Yurchisin (2018) viewed that personal factors are influential in the consumption of wedding gown. According to Santosa (2021) the preferences of the brides on the use of bridal gown is influenced by their characteristics such as age, occupation, lifestyle, and personality.

2.3 Influence of Economic Factors in Bridal Consumption

The buying tendency of an individual is directly proportional to his income/earnings per month. How much an individual brings home decides how much he spends and on which products? As indicated by Sernesta, Fahmi and Jahroh (2020), individuals with high income would buy expensive and premium products as compared to individuals from middle- and lower-income group who would spend mostly on necessary items. It is hardly finding an individual from a low-income group spending money on designer bridal gown. The bride would be more interested in buying a gown necessary for her survival.

2.4 Influence of Social Factors in Bridal Consumption

Consumer behaviour is largely influenced by social factors, such as family, reference groups, and social roles and status. Reference groups expose individuals to new behaviours and lifestyles and shape their attitudes and self-concept (Kotler & Keller, 2016). This formation of attitude and self-concept is triggered by direct or indirect points of comparison or reference. The task of marketers, in this case, is to identify the reference groups for their target markets. The importance of reference groups varies across products and services.

2.5 Influence of Cultural Factors in Bridal Consumption

Culture plays an important role in the decision making of consumers. Every individual consumer belongs to a social group and such have the potentials in influencing consumption of bridal gown. Expressing his concerns about Weddings and cultural related issues and their impact on consumption (Bell 1997) cemented his thoughts by saying that wedding consumptions is an unchanging ritual where individuals believe they must transact and respond to local traditions in the past. Boden (2005) stated that family traditions and culture is an influential factor in the consumption of wedding goods and services. Western fashion has influenced the evolution of the bridal replacing the traditional dresses mostly after the independence of the country (1957), such as the *abozos*.

3 Methodology

The study employed quantitative methods and utilized primary data. The primary data was collected through field survey and relied on google form of questionnaire as a data collection instrument (Creswell, 2005). Taking into consideration other constraints (such as financial and difficulty in selecting all married couples and yet to be coupled) to answer the research question, 300 married couples and yet to be coupled in the Kumasi Metropolis of Ghana were conveniently selected. All the married couples and yet to be coupled in Kumasi Metropolis were used as the sample frame.

The main instrument used was a structured questionnaire sent to the e-mail and WhatsApp number of the sampled respondents and a total of 230 out of 300 were received attaining 76.7% response rate. Items on respondents' demography includes gender, age, educational level, and marital status of the respondents. A 7-point Likert Scale was also used ranging from strongly disagree (1) to strongly agree (7) to solicit responses on the factors influencing the consumption of bridal gown. *The study discovered psychological factors (mean = 4.5884); personal factors (mean = 5.0525); economic factors (mean = 4.6243); and cultural factors (mean = 4.4211) influences the consumption of bridal gown. The finding showed psychological factors ($F = 20.714, p < 0.01$); personal factors ($F = 47.594, p < 0.01$); economic factors ($F = 17.247, p < 0.01$); social factors ($F = 39.298, p < 0.01$); cultural factors ($F = 36.652, p < 0.01$) have statistically significant relationship with bridal gown consumption.*

The data collected was refined, coded, and fed into SPSS version 21 for both descriptive and inferential data analysis. Frequencies, Percentages, Means, and Standard deviations were used to summarize the data. A Pearson correlation and regression analysis were performed to ascertain the relationship between influencing factors, and consumption of bridal gown at a 5% level of significance.

4 Results

4.1 Descriptive Statistics of the Survey Participants

This section of the paper presents the result and analysis of the data obtained from the questionnaires distributed. Table 1 presents the background information of the respondents.

Table 1. Descriptive statistics of the survey participants.

Characteristics	Frequency (%)
<i>Gender</i>	
Male	43 (18.7)
Female	187 (81.3)
<i>Age (years)</i>	
Below 20 years	28 (12.2)
20–29 years	128 (55.7)
30–39 years	55 (23.9)
40–49 years	15 (6.5)
50–59 years	4 (1.7)
<i>Educational Background</i>	
No Formal Education	–
First degree	213 (92.6)
Masters degree	15 (6.5)
PhD	2 (0.9)

As shown in Table 1, 18.7% of the respondents were males while 81.3% were females with most of the respondents falling between the ages of 20–29 years. The least age group of the respondents included in the study was 50–59 years represented by 1.7%. A closer look at Table 1 reveals that almost 92.6% of the respondents have at least first-degree education with the rest attaining master’s degree and PhD qualifications. Demographic information of the respondents was sought; the researcher deemed it necessary to look into demographic information of respondents because they make a person who he or she is.

4.2 Influencing Factors on Bridal Gown Consumption

The factors that influence consumers’ consumption of bridal gown in Ghana were analyzed. The internal consistency of the questionnaire variables was initially assessed. In this study, Cronbach’s alpha value was 0.849 indicating a higher internal consistency and the reliability of the questionnaire. In this section, respondents were asked to rate the factors that influence their consumption of bridal gown using a seven-point Likert scale. From Table 2, the influencing factors were grouped into psychological, personal, economic, social, and cultural factors.

From Table 2, five influencing factors presented to the respondents were reported to influence the consumption of bridal gown. It is interesting to note that, “Psychological factors” (mean = 4.5884, SD = 1.27397); “Personal factors” (mean = 5.0925, SD = 1.27303); “Economic factors” (mean = 4.6243, SD = 1.19211); “Social factors” (mean = 3.9671, SD = 1.40718); and “Cultural factors” (mean = 4.4211, SD = 1.63686) are

Table 2. Influencing factors and bridal gown consumption

Construct	No. of items	Mean	Std. Dev.	1	2	3	4	5	6
Psychological factors	5	4.5884	1.27397	1	.490**	.417**	.317**	.242**	.296**
Personal factors	5	5.0925	1.27303		1	.495**	.358**	.367**	.423**
Economic factors	5	4.6243	1.19211			1	.440**	.438**	.274**
Social factors	5	3.9671	1.40718				1	.616**	.392**
Cultural factors	5	4.4211	1.63686					1	.376**
Bridal Gown Consumption	4	4.0735	1.01448						1
R² Adjusted				.088	.179	.071	.149	.137	.206
F-Value				20.714	47.594	17.247	39.298	36.052	11.576

** . Correlation is significant at the 0.01 level (2-tailed).

Cell entries are the standardized beta coefficient

the five (5) most influencing factors. However, “bridal gown consumption” (mean = 4.0735, SD = 1.01448) had acceptable average score. All these factors met the predetermined cut-off point of 4.0 if the exception of social factors. According to the result, personal factors with the highest mean score are the dominant factors in influencing the consumption of bridal gown. It became evident that at a 5% level of significance, the mean ratings of consumer preference of cement brands were significant (p -value > 0.01). The result shows significant association between psychological factors ($r = 0.296$, $p < 0.01$); personal factors ($r = 0.423$, $p < 0.01$); economic factors ($r = 0.274$, $p < 0.01$); social factors ($r = 0.392$, $p < 0.01$); cultural factors ($r = 0.376$, $p < 0.01$), and bridal gown consumption. This is an indication that these influencing factors affect the consumption and selection criteria of bridal gown. The significant effect of the influencing factors (independent variable) and bridal gown consumption (dependent variables) were measured using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The explained variance for factors increased from 7.1 to 14.9% (Model 1, 2, 3, 4 and 5) with all variables except for Model 6 when it entered the equation. Thus, the consumption of bridal gown is largely influenced by these factors. Among the influencing factors, psychological factors ($F = 20.714$, $p < 0.01$); personal factors ($F = 47.594$, $p < 0.01$); economic factors ($F = 17.247$, $p < 0.01$); social factors ($r = 39.298$, $p < 0.01$); cultural factors ($F = 36.052$, $p < 0.01$) were found to be statistically significant on bridal gown consumption. Furthermore, the change in $R^2 = 20.6\%$ (Model 6) was statistically significant indicating that influencing factors were in and among themselves important factors that drive consumers’ consumption of bridal gown in Ghana.

5 Discussion

The study aimed at contributing to knowledge of factors that influences the consumption of a bridal gown in Ghanaian perspective. Psychological factors, personal factors, economic factors, and cultural factors have considerable influence and provide a cue for the bridal gown consumption. The mean ratings for the brand awareness were between (Mean = 5.09 – 3.96). Furthermore, the results indicated that consumers of bridal gown are mostly influenced by personal factors such as age and life cycle stage, occupation, economic situation, lifestyle, personality, and self-concept. This is supported by Semesta, Fahmi and Jahroh (2020) who found that personal factors like occupation, age and life cycle stage, lifestyle, and personality play a major role in buying behavior of a consumer. The findings agree with other researchers who asserted that psychological, personal, economic, social and cultural are important factors considered by consumers when making purchasing decisions on bridal gown (Madinga et al., 2016; Boden, 2003). There was a substantial significant relationship between the influencing factors and consumption of bridal gown. This is in agreement with Santosa (2021), which established three factors as main determinants of wedding dress: psychological, cultural and social factors.

6 Conclusion and Recommendation

As a result of globalization, wedding ceremonies over the years has gone through tremendous changes, thus: from romantic event to commercialized event. In fact, Bridal gowns are more than simply just a style. In Ghana, one can find fashion in bridal gown, either through the style of dress, type of fabric, or style of accessories (Alabi, 2020). Brides are not only wearing world fashion; they are actively revising world fashions to suite their own tastes and preferences. The prominence given to world's fashion by brides suggests that they are directly influenced by numerous factors encouraging brides to emulate the styles of world fashion. According to the present study, psychological factors, personal factors, economic factors, and cultural factors have considerable influence and provide a cue for bridal gown consumption. Drawing from the result, one can conclude that psychological, personal, economic, social and cultural factors are influencing factors that have a direct relationship with the consumption of bridal gown in Ghana. It can also be concluded that understanding the roles and behavioural characteristics of consumers particularly married couples and yet-to be couples are very crucial and cannot be over emphasizes in the bridal market, wedding ceremonies over the years has gone through tremendous changes, thus: from romantic event to commercialized event. Weddings are normally perceived to be emotional event, but the narrative has change as a result of socio-economic activities such as income, industrialization educational and other preferences. Hence, manufacturers and marketers should focus their strategies on understanding consumers of all ages, gender, and educational backgrounds as their purchasing decisions will go a long way in influencing production and consumption of bridal gown. This approach is the first phase of the application of facilitation process, a practice of structuring and guiding dialogues, meetings, events, decision-making processes, and other activities using intentional strategies that help groups converse and collaborate more respectfully and productively (Hanson & Hanson, 2011).

References




- Alabi, J.: Ghanaian traditional wedding dresses: different styles, brands, lengths, ages and how to wear them (2020). <https://yen.com.gh/105773-ghanaian-traditional-wedding-dresses-different-styles-brands-lengths-ages-how-wear-them.html>
- Bell, C.: *Ritual Perspective and Dimensions*. Oxford University Press, New York (1997)
- Boden, S.: *Consumerism, Romance and the Wedding Experience*. Palgrave, London (2003)
- Cecil, M.: *Empowered ambivalence: an analysis of feminist wedding planning* (2014). http://mars.gmu.edu/jspui/bitstream/handle/1920/9027/Cecil_thesis_2014.pdf;jsessionid=9DF9315C2C4B9BD068DF8C3E5FA16784?sequence=1
- Creswell, J.W.: *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2nd edn. Sage, Thousand Oaks (2003)
- Guan, L., Luo, Y., Tang, L.R.: An exploratory study of decision makers for choosing wedding banquet venues: push and pull motivations. *Int. J. Tour. Cities* 1(2), 162–174 (2015)
- Kalmijn, M.: Marriage rituals as reinforcers of role transitions: an analysis of weddings in the Netherlands. *J. Marriage Fam.* 66(3), 582–594 (2004)
- Kotler, P., Keller, K.L.: *Marketing Management*, 5th edn. Pearson Education South Asia Ltd., New Jersey (2016)
- Madinga, N.W., Maziriri, E.T., Lose, T.: Exploring status consumption in South Africa: a literature review. *Invest. Manag. Financ. Innov.* 13(3), 131–136 (2016)

Appendix H

Publications in Book Chapter



Multi-Purpose Design Concept: A Sustainable Strategy in Extending the Life Cycle of “White Wedding Gowns” in Ghana

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Abstract. The bridal gown sector is one of the largest waste contributors in the fashion and textiles industry particularly in the user phase. Best sustainable practices are at the forefront in this twenty-first century and as a result, sustainability and circularity have become very crucial for global industrial growth and development of which the clothing and textiles industry cannot be left out. The study location is Ghana and the context is limited to extending the life span of bridal gowns through a multi-purpose concept of design. Ghana is a third-world country faced with a very low socio-economic problem, many families live in poor conditions and fashion solutions should be more sustainable, versatile and with a longer life cycle. The study is qualitative with 40 respondents comprising 10 fashion designers, 10 industry players, 15 married couples; and 5 yet-to-be couples were selected. Purposive sampling was employed. The semi-structured interview guide was used. The findings of the study reveal a growing trend towards the multi-purpose use of bridal gowns within the bridal gown industries. The Fashion Designers and Industry Players reported receiving bridal gowns for modification from couples, highlighting a practical approach towards repurposing these garments. The insights shared by married couples and unmarried individuals further underscored the inclination towards the adoption and promotion of multi-purpose bridal wear. It was recommended that bridal gown designers and professionals should be sensitive to these rising trends and respond to the changing desires of clients wanting multi-purpose bridal gowns.

Keywords: Multi-purpose concept · Sustainable Bridal Gown · Ghanaian Marriage Culture · Clothing life cycle

1 Introduction

The fashion industry has experienced remarkable growth recently, serving as a vital contributor to economic prosperity in many countries [1]. However, this growth comes at a cost, as the environmental impacts of the fashion industry have become increasingly

apparent [1, 2]. With each stride forward, the fashion industry leaves a significant ecological footprint, threatening environmental sustainability on a global scale [3]. Despite efforts to implement practices such as green design, eco-design, and sustainability-focused design, the fashion industry continues to grapple with environmental challenges [2, 3]. These challenges span all aspects of fashion production and products, drawing criticism from discerning consumers and environmentally conscious organizations alike.

Among the various fashion products contributing to these challenges, bridal gowns stand out as a significant contributor [4]. The traditional model of creating wedding gowns, often characterized by a one-time use, poses significant environmental concerns due to the sheer volume of weddings held each year. With approximately 40 million weddings taking place annually, the production of bridal gowns contributes to environmental harm through the utilization of bleaches, surfactants, and finishes used to colour fibres and fabrics [5].

Recognizing the urgency of addressing these environmental impacts, there is a growing call for brides and the fashion industry to reassess gown design and materials. The current shift in the bridal industry towards modern and unconventional design approaches reflects an evolving preference among brides for uniqueness and personality in their bridal dresses [6]. While marriage customs remain steadfast, the bridal gown serves as a symbol of the modern bride's sexuality, femininity, and personality.

Brides are increasingly seeking to express their individuality through their choice of styles, reflecting their preferences for uniqueness within the confines of traditional marriage conventions [5]. This evolution in bridal gown design is influenced by various factors, including contemporary trends, the circumstances of the wedding, and cultural influences [5]. As the bridal industry continues to adapt to changing preferences and societal norms, there is a growing emphasis on creating wedding gowns that align with the modern bride's desire for self-expression while also considering sustainability.

By reimagining gown design and materials, the industry can minimize its environmental footprint while still offering brides the opportunity to showcase their personality and style on their special day [4].

In countries like Ghana and many others, bridal gowns are predominantly worn once and then discarded, unable to be repurposed for different occasions. This one-time use further exacerbates the environmental footprint of bridal fashion, adding to the industry's overall sustainability challenges [4]. The bridal gown, despite its significance as a symbol of love and commitment, often finds itself relegated to a single-use item, disposed of or left unused after the wedding festivities have concluded. This trend highlights a significant consumption behaviour in Ghana, where garments like bridal gowns are treated as disposable commodities, regardless of the resources invested in their creation. This one-time wearing phenomenon is a consequence of a lack of innovative design thinking and a failure to incorporate the needs and values of the wearers into clothing design.

The alarming rate of this disposable behaviour in the clothing industry calls for the multi-purpose concept of design to extend the life of clothing, encourage sustainable consumption, minimize greenhouse gases, and facilitate a transition to a circular economy.

According to Fletcher and Grose [7], multi-purpose design allows different uses in different scenarios, such as adaptation (dynamic or not) to diverse social situations or weather conditions, or just clothing that has different characteristics in different body areas to have different functional features, such as different permeability characteristics and different flexural properties in specific areas of the garment, among others. Therefore, a study was conducted to explore the potential for multi-purpose use of bridal gowns across various professional categories and individuals that consider Ghanaian cultural heritage.

2 Literature Review

2.1 Bridal Gown (BG) Concept in Ghana

The BG is a highly symbolic item and indispensable in every marriage ceremony, ironically, it (the bridal gown) makes a woman a “superstar” and unique on the day of her marriage. The BG literally, denote considerable aspects of the marriage customs, particularly the femininity, social class, beliefs and values of the wearer [8]. The symbolic values of BG influence the bride’s choice to fulfil her social recognition and psychological needs as it is in line with Maslow’s Hierarchy Theory of Needs [9]. The choice design of bridal gowns largely depends on the prevailing fashion trends, socioeconomic factors, social conventions and cultural context [4]. The design of bridal gowns is most intricate, innovative and modern to appease the bride and wedding invitees [10].

In Ghanaian weddings, the bridal dress is carefully crafted to ensure that the bride stands out as the centre of attention. Whether she opts for a gown according to occidental tradition, Kente ensemble, or “ntoma” attire, the bride’s dress is meticulously designed to accentuate her beauty and radiance on her wedding day. The choice of bridal attire in Ghana is a celebration of tradition, culture, and individuality. The bride’s dress symbolizes her uniqueness and beauty, capturing the essence of love and joy that permeates Ghanaian weddings [11].

2.2 Pre-Independence Bridal Gown in Ghana

Before independence, bridal dresses in Ghana were elaborate ensembles consisting of up to five pieces, including a shawl, blouse, wrap skirt, head wrap, and traditional veil [13]. These outfits featured bright and colourful patterns and designs, often embellished with psychedelic prints and embroidery, reflecting the vibrant cultural heritage of the region. The choice of colours for both the bride and groom’s attire was deliberate, with each tone representing specific religious beliefs or customs. Below, Fig. 1. Shows the fabric used for bridal gowns before independence was primarily “kente” cloth or “Nwentoma,” a type of silk and cotton fabric made of interwoven cloth strips.

Although originating from the Akan people, Kente was patronized by every Ghanaian tribe, with each ethnic group having a specific Kente that represented its heritage and identity [12, 13].

Traditionally, Kente was reserved for special occasions and held significant symbolic meaning, with each cloth having a name and meaning derived from historical events, individual achievements, and cultural values.

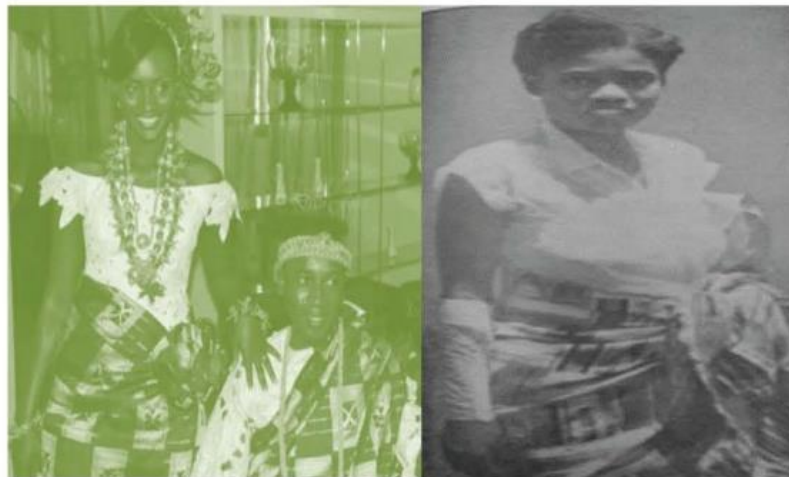


Fig. 1. Wedding dress before independence, Source: The Daily Graphic Archives (1942)

During marriage ceremonies, brides would dress in lace with two pieces of cloth, sometimes omitting the lace top and tying the cloth at the chest. The groom would wear a large cloth around his body and a big necklace. Additionally, brides often wore “Kaba/silt,” “akataso,” and “aboso” cotton printed dresses, with fabric choices and garment designs playing a crucial role in bridal attire. Below, Fig. 2 shows the “aboso” served as a storage pouch worn at the waistline, symbolizing the preservation of the bride’s valuables until the day of their honeymoon. Similarly, the “akataso” covered the body from the armpit to the feet, further emphasizing the concept of preserving the bride’s valuables until the wedding night.



Fig. 2. The “aboso” a tube-like waistband and the “akataso” covers the body from the armpit, The Daily Graphic Archives (1947)

The bridal attire before independence in Ghana was not only visually striking but also deeply rooted in cultural traditions and symbolism, reflecting the rich heritage and customs of the region.

2.3 Post-Independence Bridal Gown

Nowadays in Ghana, one can find Western fashion in bridal gowns, either through the style of dress, type of fabric, or style of accessories [11]. The white wedding dress of Western culture can be found among the wedding traditions of several Ghanaian cultures [14].

Contemporary versions of white wedding dresses are often in great demand and worn in addition to or instead of the Traditional Ghanaian wedding dress that fell out of favour during rapid industrial growth and emergence onto the world marketplace.

Brides during post-independence were not only wearing world fashions, but they were also actively revising world fashions to suit their own tastes and preferences. One such example was featured in the 1998 article from the Sunday Mirror “New Styles in Frocks for Brides” [15]. During the post-independence, brides were attempting to revise and reinvent existing traditional wedding gowns. Brides were actively wearing and adapting world fashions for their wedding ceremonies [16]. Below, Fig. 3 shows samples of the post-independence bridal gown in Ghana.



Fig. 3. Fashionable white wedding gowns emulated from world fashion. Source: The Daily Graphic Archives (1973)

In recent times the new batch of Ghanaian brides is changing the way they dress up for their weddings, putting a lot of attention, effort, and money into their bridal gowns. Brides can change up to three times during the wedding, and each change has its own significance, and the colours, designs, and styles are carefully picked out.

Ghanaian brides now feature both traditional and modern forms of bridal gowns in designing their dresses. Most try to incorporate some Ankara into the white wedding

dresses and tuxedos with accents of Kente. It is not unusual for both the bride and the groom to wear the same or similar shades of the chosen colours adorned with expensive beads and jewellery. Simple wedding dresses are done in a mermaid style and if not fully but mostly feature Kente. Those who want personalized designs still have an array of global styles to choose from which they incorporate with their traditional wedding dresses to make something unique. Following the traditional wedding dress style, they add to it with designs that suit their personality. Recently the modern brides went for a less conservative wedding dress with lace. Below, Fig. 4 shows samples of a blend of both traditional and modern forms of bridal gown designs.



Fig. 4. White gown with Ankara accents. Source: clipkulture.com/beautiful-ghanaian-bride

The different styles of bridal gowns are made to embody the figure of the Ghanaian woman thus there is a lot to choose from for the plus size wedding dresses for the Ghanaian woman. The fluidity of the Ghanaian wedding dress fabric makes the voluptuous Ghanaian bride a sight to behold [12]. While the bride is the main view, the wedding dresses for girls are made to match the bride.

2.4 Effect of Bridal Gowns on the Environment and Community

The effect of bridal gowns on the environment is a pressing concern within the broader context of the global fashion industry's impact on environmental sustainability [17]. The production of bridal gowns, like many other fashion garments, involves resource-intensive processes that contribute to environmental degradation [18].

From the cultivation of raw materials such as cotton or silk to the manufacturing and dyeing processes, bridal gown production consumes vast amounts of water, energy, and chemicals. These processes result in pollution of waterways, soil, and air, posing serious risks to ecosystems and human health [18].

According to Suhartini, Singke and Danardewi [10], Despite increasing awareness and consumer demand for sustainable fashion, progress in implementing eco-friendly practices within the bridal gown industry has been slow. Many companies still prioritize cost and speed of production over environmental considerations, leading to continued criticism from consumers and environmental organizations [10].

Critics argue that the fashion industry's focus on fast fashion and disposable clothing exacerbates environmental issues such as pollution, resource depletion, and waste generation.

Bridal gowns, often worn only once and then discarded, contribute to the growing problem of textile waste. This one-time use culture perpetuates a cycle of overconsumption and environmental harm [17] and in most cases, bridal gowns don't reflect Ghanaian cultural values.

As indicated by Booysen [19], while some strides have been made towards sustainability within the bridal gown industry, much work remains to be done. Designers, manufacturers, and consumers must collectively prioritize environmental sustainability in bridal gown production and consumption. This may involve adopting sustainable materials, reducing waste, promoting the multi-purpose use of gowns, and raising awareness about the environmental impact of bridal gown designs.

Ultimately, addressing the environmental impact of bridal gown designs requires a holistic approach that considers the entire lifecycle of the garment, from production to disposal [4, 20]. By embracing sustainable practices and innovation, the bridal industry can mitigate its environmental footprint and contribute to a more sustainable future for fashion [4].

To mitigate the environmental impact of bridal gown designs, designers can design bridal gowns with versatility in mind, allowing them to be worn for multiple occasions beyond the wedding day, which can extend their lifespan and reduce overall consumption [4].

3 Multi-Purpose Design of Bridal Gown

The concept of multi-purpose design in clothing has emerged as a solution to address the short usage lifespan of garments due to rapidly changing fashion trends. This design approach focuses on creating clothing that serves different purposes in various scenarios, such as adapting to different social situations, and weather conditions, or having different functional features in different body areas [7].

Multi-purpose design not only makes clothing more interesting but also encourages wearer participation in choices, increasing the possibility of clothing styles and extending the service cycle of garments [21]. Consumers today are seeking fashion pieces that last beyond a single season, making the idea of different options in the same style a smart solution [22].

Developing multi-purpose fashion products requires careful consideration of key elements such as textile materials and technologies, comfort, design research, cultural heritage, concept testing, and an inclusive design approach [23]. Below, Fig. 5 shows the various stages for the designing of a multi-functional product.



Fig. 5. The stage of developing multifunctional clothing. Source: <https://ejssh.uitm.edu.my/images>

Multi-purpose clothing design emphasizes how garments can be deconstructed and rearranged to perform diverse purposes. This involves breaking down the fundamental shape of clothing into two or more pieces, each with specific functions [23].

Criteria for manufacturing multi-purpose clothing include single-function, multi-function, geometric features, compounding, and splicing.

The use of closures like zippers, buttons, or fasteners is crucial in multi-purpose clothing design, as they allow wearers to select their preferred functions easily. By incorporating removable, detachable, and reversible features, designers can offer multiple ways to wear a garment, thereby streamlining consumer wardrobes with sustainability in mind [21].

Multi-purpose clothing design enables consumers to participate in choices, increase the variety of clothing styles, and extend the service life of garments. As the desire for value-driven consumption continues to grow, garments that offer versatility and longevity are becoming increasingly important to consumers.

Multi-purpose design of bridal gowns is a modern approach that aims to maximize the utility and longevity of these garments beyond the wedding day [10, 24]. Instead of being worn only once and then stored away, multi-purpose bridal gowns are designed to be versatile and adaptable, allowing brides to wear them for various occasions and events [10].

One aspect of multi-purpose design involves creating bridal gowns with detachable or convertible elements [10]. For example, a gown may have detachable sleeves or a removable overskirt, allowing the bride to transform her look from ceremony to reception effortlessly. This versatility enables the bride to customize her gown based on the formality of the event or her personal preferences [24].

As indicated by CU [25], multi-purpose design is to choose fabrics and silhouettes that lend themselves well to different occasions.

Instead of opting for heavily embellished or ornate designs, designers may focus on creating timeless and elegant gowns that can be easily accessorized or styled differently for various events [24, 25]. For instance, a simple silk gown may be dressed up with statement jewellery and accessories for a formal evening gala or dressed down with a casual jacket for a more relaxed gathering.

In addition to versatility in design, multi-purpose bridal gowns also prioritize comfort and wearability. Brides are increasingly seeking gowns that not only look beautiful but also feel comfortable to wear for extended periods. Lightweight fabrics, breathable construction, and flexible silhouettes are all factors considered in creating multi-purpose bridal gowns that can be worn from morning until night without sacrificing style or comfort [26].

The multi-purpose design of bridal gowns represents a shift towards more sustainable and practical fashion choices [26, 27]. By creating gowns that can be worn for multiple occasions, designers are not only reducing waste but also offering brides greater value and flexibility in their wedding attire [27]. This approach aligns with the modern bride's desire for versatility, sustainability, and individuality, making multi-purpose bridal gowns an increasingly popular choice in the bridal fashion landscape.

4 Methodology

In this study, a qualitative approach was adopted. The population for the study included fashion designers, industry players, married couples and yet to be coupled. From the population, a sample size comprising 40 respondents, 10 fashion designers, 10 industry players, 15 married couples; and 5 yet-to-be couples were selected. The sampling techniques employed were purposive. Purposive sampling was employed to select the respondents. The purposive sampling technique is the deliberate choice of a participant due to the qualities the participant possesses. It is a non-random technique that does not need underlying theories or a set number of participants [28]. The study decides what needs to be known and sets out to find fashion designers, industry players, married couples, and yet-to-be couples who can and are willing to provide the information by virtue of knowledge or experience in decision-making relating to the sustainability of widespread of redundancy of the bridal gowns in Ghana.

A semi-structured interview guide was used to gather information from the respondents. The respondents' consents were sought to tape record the interview. The interview schedules were conducted to provide the necessary qualitative data. The interviews were face-to-face conversations where most of the talking was done by the participants, thus producing rich descriptive details about the phenomenon.

Additionally, the qualitative data obtained from the fashion designers and industry players were analysed descriptively, whereas the interviews from married couples and unmarried individuals underwent thematic analysis. This involved identifying recurring themes, patterns, and trends within the interview transcripts.

5 Results and Discussions

This academic paper examines the multi-purpose use of bridal gowns in Ghana among various professional categories, including fashion designers, industry players, and married and unmarried individuals. It explores modifications, preferences, design, complexity, and recommendations for different occasions. The findings can inform industry practices and help professionals adapt to changing trends in the fashion and wedding industry. Table 1, are the results and key findings on the multi-purpose concept of Bridal gowns in Ghana.

The data presented in Table 1 sheds light on the multi-purpose use of bridal gowns within the fashion industry. It reveals intriguing insights into the perspectives of both Fashion Designers and Industry Players regarding the versatility and demand for these garments. Fashion Designers and Industry Players, comprising a significant portion of the surveyed population, showcased a considerable willingness to receive bridal gowns

Table 1. Multi-purpose use of Bridal gown in Ghana.

S/N	Multi-purpose use of Bridal gown	Options	Fashion Designers		Industry Players		Cohen's Kappa(k)
			N	%	N	%	
Mg1	Received bridal gown for modification from couples	Yes	7	70	5	50	.200
		No	3	30	5	50	
Mg2	Multi-purpose bridal gowns have several uses beyond weddings	Yes	9	90	8	80	.100
		No	1	10	2	20	
Mg3	There is a growing demand for multi-purpose bridal wear in the market	Yes	8	80	7	70	.110
		No	2	20	3	30	
Mg4	Multi-purpose bridal wear aligns with contemporary fashion trends	Yes	9	90	8	80	.101
		No	1	10	2	20	
Mg5	Bridal designers prioritize versatility when creating gowns	Yes	7	70	9	90	.231
		No	3	30	1	10	
Mg6	Multi-purpose bridal gowns retain elements of traditional bridal aesthetics	Yes	6	60	5	50	.113
		No	4	40	5	50	
Mg7	Recommend bridal gown for different occasions	Yes	10	100	9	90	.213
		No	0	0.0	1	10	

for modification. Specifically, 70% of Fashion Designers and 50% of Industry Players reported their engagement in such practices, indicating a prevalent trend within the industry.

Moreover, an overwhelming majority of both Fashion Designers (90%) and Industry Players (80%) acknowledged the myriad uses of multi-purpose bridal gowns beyond weddings. This acknowledgement underscores a shift in perception, with these professionals recognizing the potential for bridal gowns to serve various functions beyond their traditional role. The data further indicates a growing demand for multi-purpose bridal wear in the market, with 80% of Fashion Designers and 70% of Industry Players attesting to this trend. This growing demand is seen as reflective of contemporary fashion trends, with 90% of Fashion Designers and 80% of Industry Players affirming that multi-purpose bridal wear aligns with modern style sensibilities.

Interestingly, when questioned about the prioritization of versatility in the creation of bridal gowns, responses were slightly varied. While 70% of Fashion Designers agreed that versatility is paramount, a higher proportion of Industry Players (90%) echoed this sentiment, emphasizing the importance of adaptability in garment design. Furthermore, there appears to be a balance struck between retaining traditional bridal aesthetics and embracing versatility. Sixty per cent of Fashion Designers and fifty per cent of Industry Players noted that multi-purpose bridal gowns still retain elements of traditional bridal aesthetics, suggesting a fusion of classic and contemporary design elements. Perhaps most compellingly, the data highlights a strong endorsement of recommending bridal gowns for different occasions.

A unanimous 100% of Fashion Designers and 90% of Industry Players revealed their inclination towards suggesting bridal gowns for diverse events, further solidifying the notion of multi-purpose use within the industry.

The analysis of Cohen's kappa (κ) values for each question yielded results indicative of a moderate strength of agreement among respondents, as defined by [29]. Cohen's kappa (κ) values, which quantify the proportion of agreement beyond the chance agreement, were found to be equal to or above 0.1 for all questions examined. In this context, a kappa (κ) of 0.1 and above is considered to demonstrate a moderate level of agreement, suggesting that respondents' opinions align to a noteworthy extent beyond what would be expected by random chance. These findings provide confidence in the reliability and consistency of the responses obtained for each question in the study.

The findings underscore a notable inclination towards the adoption and promotion of multi-purpose bridal wear within the fashion industry. This trend reflects a broader shift towards versatility and adaptability in garment design, signalling exciting prospects for the future of bridal fashion.

5.1 Presentation of Results for Married Couple and Unmarried Individuals

The viewpoints of both married couples and unmarried individuals regarding the multi-purpose use of bridal gowns reveal a shared sentiment towards the value of versatility and sustainability in bridal fashion. The majority of the participants expressed a deep appreciation for the sentimental value that bridal gowns hold beyond the wedding day. Many cited instances where they had considered or already repurposed their bridal gowns for various occasions post-wedding. This sentiment was echoed by one married couple who emphasized the emotional attachment to their gown and the practicality of using it for other events. They also advocated for repurposing bridal gowns as a recommendation to other couples planning their weddings.

Furthermore, participants highlighted the environmental benefits of investing in multi-purpose bridal gowns, emphasizing sustainability and practicality as guiding principles. They viewed the reuse and repurposing of bridal gowns as a positive trend in the fashion industry, aligning with their values and contributing to an eco-friendly approach to bridal wear. The participants gave some instances to justify the above opinions as:

“During my [unmarried individual] wedding planning process, I will prefer a multi-purpose wedding gown, I have already in my mind repurposed my bridal

gown for other occasions after my wedding. I believed that the idea of reusing or repurposing my bridal gown aligns with my values of sustainability”.

A married couple mentioned that:

“My bridal gown holds sentimental value to me beyond my wedding day, the gown I used during my wedding is now useless to me despite spending so much money in its acquisition. I would recommend repurposing or reusing bridal gowns to other couples planning their weddings”.

Overall, the perspectives shared by both married couples and unmarried individuals underscore a growing appreciation for multi-purpose bridal wear within the fashion landscape. Their viewpoints reflect a shift towards sustainability, practicality, and emotional attachment in the selection and repurposing of bridal gowns, contributing to a more holistic understanding of the evolving role of bridal fashion in contemporary society.

6 Discussion of Results

The findings of the study reveal a growing trend towards the multi-purpose use of bridal gowns within the fashion and wedding industries. Professionals, particularly Fashion Designers and Industry Players, provided valuable insights confirming this trend. They reported receiving bridal gowns for modification from couples, highlighting a practical approach towards repurposing these garments.

Additionally, there was a consensus among professionals regarding the growing demand for multi-purpose bridal wear in the market. This aligns with their efforts to prioritize versatility when creating gowns, as well as their recommendation of bridal gowns for different occasions.

Moreover, professionals stated that multi-purpose bridal gowns offer several benefits beyond weddings. They noted that these gowns align with contemporary fashion trends while still retaining elements of traditional bridal aesthetics. The insights shared by married couples and unmarried individuals further underscored the inclination towards the adoption and promotion of multi-purpose bridal wear. This collective shift towards versatility and adaptability in garment design signals promising prospects for the future of bridal fashion.

These findings align with previous research conducted by Opoku et al. [4], which emphasized a shift in bridal gown design approaches towards modern and unconventional styles. They highlighted the preferences of brides for uniqueness and personality in their bridal dresses, indicating a growing demand for innovative design solutions.

Similarly, research by Suhartini, Singke, and Danardewi [10] revealed that most brides prefer multi-purpose wedding gowns, further supporting the trends observed in the current study. The multi-purpose approach to bridal gown design, as indicated by Sonye [30], is characterized by creativity and flexibility, offering beneficial solutions to the evolving needs of brides in the modern era. This suggests that the adoption of multi-purpose bridal wear is driven by a desire for uniqueness, practicality, and adaptability, reflecting the changing dynamics of the fashion industry and consumer preferences. [31]

emphasizes the aesthetic and artistic aspects of fashion, defining it as a form of art and design.

Multi-purpose bridal gowns, seen to showcase artistic innovation, transcend Ghanaian tradition and reflect contemporary society's demands. These versatile gowns cater to a modern lifestyle, promoting variety and usefulness. They also align with sustainability concerns, encouraging longer garment usage and extending garment life. This approach aligns with circular fashion, emphasizing the importance of extending garments' lifespan.

Multi-purpose bridal gowns contribute to sustainability in fashion, advocating for longer garment usage and reducing single-use clothing. This technique aligns with circular fashion concepts, emphasizing the importance of extending garment life. Overall, these findings highlight the significance of embracing multi-purpose approaches in bridal fashion to meet the diverse and evolving needs of brides in today's world.

7 Conclusions and Recommendations

The examination of the multi-purpose use of bridal gowns among different professional categories reveals fascinating trends and preferences. The data implies that fashion design solutions particularly the bridal design sector should focus on providing designs that present versatility for more economic value and sustainability.

These findings can influence industry practices and encourage more research into multi-concept designs. Bridal gown designers and professionals should be sensitive to these rising trends and respond to the changing desires of clients wanting multi-purpose bridal gowns.

The multi-purpose use of bridal gowns signifies a shift in the bridal fashion industry towards adaptability, versatility, and sustainability. This aligns with fashion design theories, modern dress style principles, and sustainability discussions, encouraging garment reuse and longevity. Bridal gowns are seen as versatile, adaptable attire that can respond to changing societal values and needs.

The study recommends that fashion designers and industry players should prioritize versatility when creating bridal gowns. They should consider incorporating elements that allow for easy modification or transformation, such as detachable sleeves, skirts, or overlays. This flexibility enables brides to personalize their look for different events and occasions beyond the wedding day. Industry players can educate consumers about the benefits of multi-purpose bridal wear. Highlight the sustainability aspects of investing in a gown that can be worn for various events, as well as the cost-effectiveness of getting more use out of a single garment. Provide styling tips and inspiration for repurposing bridal gowns for different occasions.

References

1. Gazzola, P., Pavione, E., Pezzetti, R., Grechi, D.: Trends in the fashion industry. The perception of sustainability and circular economy: A gender/generation quantitative approach. *Sustainability* 12(7), 2809 (2020)




2. Peters, G., Li, M., Lenzen, M.: The need to decelerate fast fashion in a hot climate-A global sustainability perspective on the garment industry. *J. Clean. Prod.* **295**, 126390 (2021)
3. UNTACT: Retrieved from <https://www.bilibili.tv/en/video/2049827236> (2020). Last accessed 28 Mar 2024
4. Opoku, J., Amankwah, A., Assibey, G.: Advancing unconventional bridal gowns detailing designs through cosmopolitan localism to promote environmental sustainability. *J. Sci. Technol.* **40**(3), 113–127 (2020)
5. Pursuantmedia.com: How Many Weddings Happen. Retrieved from <https://www.pursuantmedia.com> (2021). Last accessed 29 Mar 2024
6. Arvanitidou, Z., Gasouka, M.: Construction of gender through fashion and dressing. *Mediterr. J. Soc. Sci.* **4**(11), (2014)
7. Fletcher, K., Grose, L.: *Fashion and sustainability design for change*. Laurence King Publishers, London (2012)
8. Ehrman, E.: The wedding. 300 years of bridal fashion. In Victoria and Albert Museum. South Kensington, London SW72RL, first edit, Vol. 1(3). V&R Publishing. <https://doi.org/10.1053/j.ajkd.2011.01.006> (2011)
9. Tu, J.C., Chang, H.T.: A study on the attractiveness factors of wedding dresses. *Int. J. Affect. Eng.* **16**(3), 231–241 (2017). <https://doi.org/10.5057/ijae.ijae-d-16-00046>
10. Suhartini, R., Singke, J., Danardewi, H.A.: Upeycling wedding gowns: development of design, materials and ornaments. *Adv. Soc. Sci. Educ. Humanit. Res.* **390**, 18–26 (2019)
11. Alabi, J.: Ghanaian traditional wedding dresses: different styles, brands, lengths, ages and how to wear them. Retrieved from <https://yen.com.gh/105773-ghanaian-traditional-wedding-dresses-different-styles-brands-lengths-ages-how-wear-them.html> (2020). Last accessed 2 Nov 2023
12. Asare, L.: Top fashion designers on ‘Catwalk Extravaganza’. *The Mirror*, November 14, p. 11 (1992)
13. Asmah, E.A., Frimpong, C., Asinyo, B.: Adaptation of traditional symbols into bridal wear. *Arts Des. Stud.* **19**(1), 13–20 (2014)
14. Hudson, A.: Measuring the impact of cultural diversity on desired mobile reference services. *Ref. Serv. Rev.* **38**(2), 299–308 (2010)
15. Takyiwaa, M.: Diasporas, unities, and the marketplace: tracing changes in Ghanaian fashion. *J. Afr. Stud.* **16**(1), 13–19 (1998)
16. Serwaa, B.A.: The Thrilla of a showcase. *The Mirror*, March 11, p. 11 (1995)
17. Kwon, S.H.: Green can be the new white for wedding dresses. *Des. J.* **20**(5), 595–616 (2017)
18. Schaefer, K.: The sustainable bride: an exploration in conceptual bridal design. MA Major Research Project, Ryerson University, p. 282 (2013)
19. Booyesen, E.E.: Challenging tradition through sustainable bridal wear for a contemporary South African market. Doctoral dissertation (2010)
20. Schaefer, K., Navarro, H.: Sustainable bridal and beyond: using non-traditional design techniques to extend garment life and eliminate waste. *Fashion: Tyranny and Revelation*, pp. 271–291, Brill (2016)
21. Cunha, J., Broega, A.C.: Designing multifunctional textile fashion products. In World Textile Conference. Retrieved from <https://pdfs.semanticscholar.org/06aa/0db616ce85376ab19301ae76f1d6535bc19a.pdf> (2009). Last Accessed 23 Dec 2023
22. Keiser, S.J., Garner, M.B.: *Beyond design: the synergy of apparel product development*. Fairchild, New York (2003)
23. Li, M.M., Chen, Y., Wang, Y.: Modular design in fashion industry. *J. Arts Humanit.* **7**(03), 12–71 (2018)
24. Jeon, M.J., Moon, S.J., Chung, S.H.: A study for the development of a variable wedding dress design. *Fashion Text. Res. J.* **15**(5), 694–703 (2013)

Appendix I

Publications in Book Chapter



Co-design as a Sustainable Design Thinking Approach in Addressing the Redundancy of the “White Wedding Gown” in Ghana

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Abstract. Bridal gowns are one of the categories of clothing commonly worn in Ghana and are often disposed of prematurely or become redundant when the wedding ceremonies are over. The key research question is, ‘How can the design techniques of the bridal gown influence the extended life cycle of usage?’.

Bridal gowns have become a one-time dress regardless of the time, money and other resources invested in its acquisition. This usage behaviour is attributed to the lack of innovative design thinking approaches and a failure to incorporate the needs and cultural values of the wearers of the clothes through the co-design process. This research is an aspect of the generative stage of my Ph.D. dissertation, and it focuses on addressing the redundancy of bridal gowns for extended life within the Ghanaian marriage culture, by exploring the co-design thinking techniques with consumers of bridal gowns. The study employs both the theory of facilitation and the theory of needs as a design tool in translating and stimulating the co-design process. The study is qualitative and employs a studio-based methodological approach to address the study objective as depicted in the main thesis. SPSS was used to process and analyze the data for the study. The outcome of the study was that bridal gown designers should collaborate with brides in the selection of appropriate (traditional) fabric and style in the production of bridal gowns that will reflect the needs and values of their clients for extended life.

Keywords: Sustainable Bridal Gown · Ghanaian Marriage Culture · Theory of needs · Theory of facilitation · Co-design in fashion · Design thinking techniques

1 Introduction

The bridal gown is a highly symbolic item and indispensable in every marriage ceremony. The symbolic values of BG influence the bride’s choice to fulfil her social recognition and psychological needs as it is in line with Maslow’s Hierarchy Theory of Needs (Tu and Chang 2017). The evolution of the “white wedding” can be traced as far back as

1499 when it was first documented during the marriage between Louis XII of France and Anne de Bretagne (Chen 2005). It, however, became generally accepted following the wedding ceremony of British Queen Victoria in 1840.

Duncan and Phillips (2008), indicate that British weddings are historically associated with low patronage, and a high rate of divorce, perhaps, due to a lack of trust in marriage as a condition for engaging in relationships or childbearing. On the contrary, Carter and Duncan (2017), argued that, in recent times, white weddings are becoming expensive and popular, even though the social demand for marriage is fading out.

According to Lucott (2016), the spiritual importance of the **BG** has lost its virtue in contemporary times. In the eighteenth and early nineteenth centuries, the religious associations of the **BG** were very important. But in these modern times, it only represents a symbol of luxury, status, novelty and romantic love. (Ehrman 2011).

Asmah et al. (2014), mentioned that until colonization, there was nothing like a '*white wedding*'. It is something Ghanaians simply adopted. Asmah et al. (2014) further indicated that wedding dresses before Ghana attained independence were characterized by bright, colourful patterns and designs, often adorned with psychedelic prints and embroidery. The style of traditional wedding clothes has been influenced by Western design, and in some instances has influenced the style of dress of many non-Western cultures, in some areas substituting for the traditional dress completely (Hudson 2010). Hudson (2010), opined that Western wedding dresses are commonly patronized in several Ghanaian households. The design of the white wedding dress is most intricate, innovative and modern to appease the bride and wedding invitees. The intricacy of the designs unavertable wastes a lot of fabric during construction (Suhartini et al. 2020).

Characteristically, there have not been many changes in the design philosophy and general silhouettes of wedding gowns from the 14th century till date, as designs always denote happiness, glamour, royalty, fabulous and flamboyance. These design attributes come with extravagant costs financially and also to the environment, as translating such design attributes into bridal gowns needs more fabrics than the usual routine dresses and regrettably, a number of brides prematurely end the life span of this gown as soon as their wedding ceremony is over (Kwon 2017).

1.1 Statement of the Problem

It has been established that the bridal gown sector is one of the largest waste contributors in the fashion and textiles industry in terms of usage (Suhartini et al. 2020). This consumption behaviour is attributed to the lack of wearers' involvement (co-design) as a design thinking approach in the design and development of clothing for an extended life span (Armstrong et al. 2016). Extending the life of clothing at the user phase of the clothing life cycle is a fundamental strategy in sustainable CL consumption (Earley 2017).

In this respect, (Armstrong et al. 2016) postulated that the way forward in achieving a more sustainable apparel industry is to emphasize the involvement of the user (wearer) as the key to fostering change.

The above suggestion by Armstrong et al. (2016) highlighted the gap this study is seeking to find answers to. The participation (co-design) of the users of wedding dresses

as an innovative design thinking approach is something worth arguing for in the discourse of bridal gown redundancy within the Ghanaian marriage culture.

2 Sustainable Bridal Gowns

Sustainable fashion, according to Moon et al. (2015) is defined as garment products that maximize positive environmental, social, and economic impacts while minimizing negative effects along the supply and value chain.

Sustainable garment products are a component of the rising sustainability design philosophy and trend, intending to develop a situation that may be sustained for an unlimited time in a social and environmental manner. Garment products of which the bridal is no exception, have an environmental effect at every stage of their lifespan (Allwood et al. 2006; Fletcher 2008). Gardetti and Torres (2015) maintain that the garment sector is bedevilled with sustainability challenges. Thus, the sector has been experiencing swift fashion, where the time it takes to produce garments has been reduced to provide the end-user with the latest wear.

According to The Huffington Post (2013), to-be brides are likely and willing to spend so much money on wedding dresses once in their lifetime. However, it is one of the most wasteful sectors, in terms of consumption, storage, and production expenses (Suhartini et al. 2020: 18). They emphasized that many stores that sell bridal gowns get rid of their goods because they are out of fashion, damaged or faulty, and cannot be repaired, which contributes to significant fashion waste. As a result of that, a number of designers have come to realize this trend such that they have adopted the initiative to develop the right approach to design sustainable bridal gowns.

In order to meet sustainable bridal gowns, fashion designers should inculcate environmental considerations and awareness into their design. According to Thomas and Peters (2011), a designer should be capable of having ultimate control over altering apparel in order to achieve product sustainability. Moon et al. (2015), suggest that three levels of sustainable issues in the fashion sector should prevail and may include: (i) the production stages of the garment; (ii) the garment's useful life; and (iii) its disposal (i.e. how it is disposed of). Designers should be at the forefront of developing sustainable bridal gowns. The replacement of sustainable fabric for a standard design addresses aspects of the greater matter (Moon et al. 2015).

Many innovative design approaches provide distinct ways of handling waste reduction in order to protect the environment within the bridal gown sector. The design of a product particularly the bridal gown can also influence its use phase. The application of transformational or modular design systems may provide wider utilization of garments, and this would limit them from being disposed of and so provide an avenue for wearing them in the course of their lifetime (Claudio 2006). However, developing adjustable clothing to be adapted in assembling and use requires frantic efforts from designers who accomplish the individual preference of the wearer (Fletcher and Grose 2012, p. 80). This observation re-echoes the relevance of the role of the designer in promoting sustainable bridal gowns.

Shoppers have a greater impact in enhancing sustainable bridal gowns. Hardy (2013) indicates that the trends in sustainable buying behaviour comprise high-quality shopping among shoppers, and low-quality garments made out of trash (Claudio 2006).

Similarly, slow fashion constitutes another trend in fashion which emanates from local traditional culture in a bid to search for originality in modernity, allows for considerable transparency in production and causes emotional and profitable funding (Clark 2008).

Creating consumer consciousness with respect to the clothing supply chain and its footprints on the actors has been described as the best expectation for sustainability in the garment industry (Claudio 2007, p. 5).

Joung and Park-Poaps (2013) observed that, though consumers are conscious of alternative ways of recycling clothing, they may go ahead to dispose of their unwanted dresses. They indicated that recycling behaviour requires a family adoption during the early childhood stage. In contrast, Morely et al. (2006) contend that reuse is more desirable than recycling so far as carbon dioxide emission is concerned, and this is due partly to the use of the base textiles and embellishments in making recycling difficult.

It became evident from the literature that resources on sustainability and eco-friendly fashion are adequate. However, none of the literature points to the specific area of eco-bridal design. Though a few bridal-wear designers have made some efforts to address sustainability issues in design, their attempts are more focused on the application of sustainable or natural fabrics.

3 Sustainable Design Thinking Techniques

Design thinking techniques are sustainable techniques for designing new models to create clothing that meets the needs of consumers. Thus, Brown and Kätz (2009) explain that DTTs are collective efforts by which the sensitivity of the designer and procedures are used to meet the demands of clients, in a technically feasible and sustainable way in the long-term.

According to Vuletich (2012), design thinking techniques are the human-centred approach to transformation drawn from the toolbox of the designer to incorporate into the requirements of clients, technological prospects, and the requisites for business success. Worbin (2010) maintains that the over-usage model of fashion has pushed designers into mass production of clothing at a rapid rate, limiting the processes for proactive thinking and human involvement which are prerequisites for a successful sustainable design.

The researchers' view implies that the design thinking techniques are solution-based approaches where designers focus on finding solutions to the problems in contrast to the problem-based approach. The problem-based thinking approach focuses on finding obstacles and limitations on why a problem exists.

According to Kolko (2010), the application of the DTT allows the designer to find holistic solutions and technology by using current trends and aesthetics to meet customer demands. He indicated that the synthesis approach is a process of incomplete thinking aimed at gathering, arranging, trimming, and filtering data so as to arrive at a relevant solution.

Brown and Kätz (2009) mentioned that the application of design thinking techniques brings together the desirability from the customer's perspective to match up with what is technologically and economically useful. Again, it allows various opportunities for people who are not trained as designers to utilize creative tools so that they can tackle a vast range of problems/challenges. There are also some essential aspects in which

design thinking helps, and they are: (1) the main objective is to solve the customer's requirements, (2) helps in tackling ambiguous and challenging problems, (3) drives people to create innovative solutions, and (4) helps organizations to run faster with more efficiency.

3.1 Co-design Conceptual Model

Visser (2005) explains that the co-design concept diverges designers from being self-creators to acting as stimuli and facilitators of cooperative design projects that inquire into peoples' implicit knowledge, talents and requirements at a deep level. Sanders and Stappers (2014) emphasized that design innovation in co-design is not considered the result of market forces or technological advancements any more. They concluded that co-design rests in between negotiation and wholly user-led projects. It integrates generative or exploratory research that assists in defining the problems that need some solutions.

It is evident as cited in the study of (Kozłowski et al. 2018) that most of the existing conceptual models for designing sustainable clothing are more theoretical and do not consider the wearer's involvement vis-à-vis their value and needs as a design thinking approach. Rather most of the conceptual models for designing sustainable clothing particularly (Aakko and Koskennurmi-Sivonen 2013; Jin Gam et al. 2009; Textile Environment Design 2006) primarily focused on sustainable improvement of the industry supply chain, Eco-efficiency and sufficiency, production processes with little discussion of consumption behaviour, usage and disposal of clothing. The study in its quest to address the widespread redundancy of the "White Wedding Gown" in Ghana, seeks to apply the co-design concept as a sustainable design thinking approach.

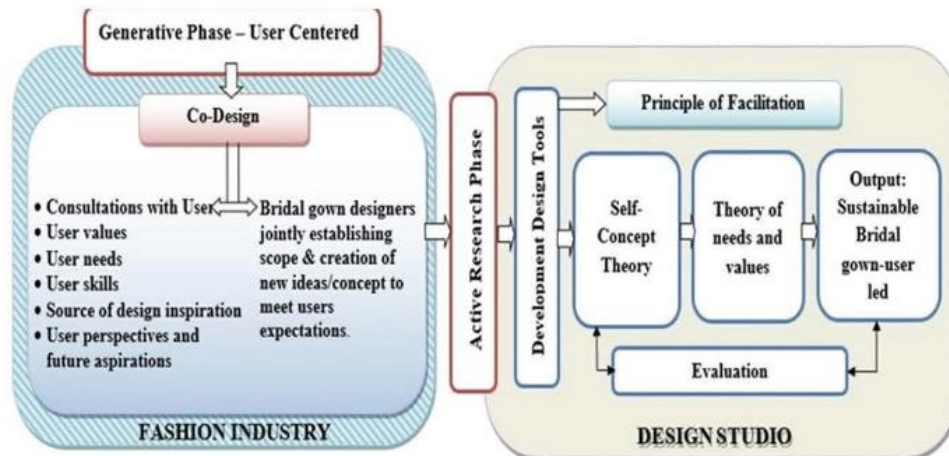


Fig. 1. Co-design conceptual model. Source: Author's Construct (2023)

3.1.1 The Generative Phase – User-Centred

The generative phase of the model calls for consultations from stakeholders (end users) with respect to their values, needs, views, skills, and perspectives of future design aspirations that in a way will influence the outcome of the final design fully user-led (Bradwell

and Marr 2008). Myerson (2016) suggests that the generative phase assists in determining the solutions to the problems before the developmental design stage. He emphasized that there is an increasingly common practice of involving potential users who display a shift from market-oriented to people-centred design. It concluded that this phase will promote a wider number of design initiatives as compared to a non-co-design technique. Steen et al. (2011) identified the following benefits associated with the co-design concept; (i) a better understanding of customer needs, (ii) obtaining more first-hand information and important ideas from customers in order to create a suitable fit for them, and (iii) ensuring better and higher service quality.

Sanders and Stappers (2008) indicate that, with the co-design method, designers consider their clients as dynamic participants and not dormant collaborators of traditional user-focussed design practices and so apply a combination of creative and generative techniques with their clients to promote their design projects. Sanders and Stappers (2008) endorse the views of Visser (2005) who opined that the co-design approach shares the participatory design mindset of clients as a prerequisite in satisfying their demand for garment production.

Clothing ideas are generated without any recourse for wearers to participate or contribute in any way to the design process, you just have to pick from the masses of clothes according to your size and current fashion trend (Milburn 2017), and the consequences of this industry approach toward designing of clothes, is a disconnection of personal unique 'feeling' of being part of the design process. This is resulting in the premature disposal of CL at an alarming rate of One Hundred and Forty Million Euros (£140) worth of CL going to landfill each year (James et al. 2019).

3.1.2 The Active Research Phase

The active research phase (interventionist) calls for the involvement of the fashion designers to apply developmental design tools such as facilitation, self-concept theory and theory of needs to guide, manipulate and translate user experiences and ideas into the desired future product aspirations. This phase will reflect practical activities whereas designers will contribute their quota to achieving the product. Rosenberg (2013) in his study, indicated that service providers and service users required the needed information and training to be able to properly engage with the co-design process.

Kristensson et al. (2002) conducted a series of experiments with 'ordinary users' to develop ideas towards innovative mobile ICT services. The outcome of the experiment indicated that 'ordinary users' can develop ideas that will be relevant input for service innovation; thus, their ideas will be considered more innovative (originality) and appropriately fit the needs of users (user value) than the ideas developed by professional designers. However, the ideas of professional designers are considered more technologically appropriate (producibility) than the ideas of 'ordinary users'.

3.1.3 Principle of Facilitation

According to Hanson and Hanson (2011), the principle of facilitation is a procedure used in organizing and conducting conversations, gatherings, occurrences, decision-making

processes, and other activities by the use of deliberate strategies that support group conversation and cooperate adequately in a productive manner. Rogers (2007) characterized the facilitator as a catalyst, someone who employs sophisticated questioning skills to assist clients in drawing their own conclusions from their personal experiences and constructing their own prescription for change. The facilitation principle can be used to generate enough welcoming, participatory, and harmless environments where consumers/users are likely to experience confidence, relaxed, or congenial, being vocal, and exchanging ideas in developing clothing that can be well aligned with their self-concept, personal values and needs.

But one may argue that some design ideas may be complicated in the minds of 'non-professional' consumers to translate into reality, yes, it may be difficult. But that notwithstanding (Duschinsky 2012, p. 13) argues that, no person was born having an in-built mental faculty and for that matter human cognition emanates from experience and consciousness.

3.1.4 Self-Concept Theory

The theory of self-concept comprises an aggregate of beliefs, preferences, opinions and attitudes organized systematically, towards personal existence (Michael and Anne 2002). The theory normally has a strong impact on new product development.

The theory cannot be abandoned when there is the need to successfully address the issue of unwanted garments and increased cliental benefits so far as current trends in fashion are concerned. The theory consists of three main attributes that is of interest to fashion designers: thus, it is (i) learned, (ii) organized, and (iii) adaptable (Anne et al. 2012).

Any product design process which conflicts with one's self-concept may be recognized as a warning, and the more conflicting effects that exist, the more firm the self-concept is put in order to support and safeguard itself. So, if a person fails to dispose of perceived inconsistencies, psychological difficulties prevail (Michael and Anne 2002).

3.1.5 Evaluation

The evaluation phase of the model results is an important part of the co-design procedure. It influences how the procedure is organized and well-equipped, making sure that the process is thoughtful, adjustable and productive. Because everyone is considered a specialist in their own area, they have something to contribute to product and solution creation.

Co-design can include clients, concerned citizens, scholars, consultants, and personnel from government and non-government funding agencies, as well as potential or present service providers (Mulder and Stappers 2009; Akama and Prendiville 2013).

The process is cyclical rather than linear, and it may be necessary to reevaluate or adjust at any point along the way. Proposals and solutions are put to the test and assessed frequently by the contributors. Substitutes and modifications are a genuine part of the process, making trials and creating awareness in due course, accepting risks and

expecting failure. The process can also be used to adjust possible outcomes as it reaches a successful stage and can subsequently assess its productiveness.

Finally, the evaluation of the acceptance of the prototype BG produced per the general standards that pertain to the BG industry. This stage establishes the acceptance or otherwise of the entire project based on its innovation, sustainability and commercial viability.

4 Methodology

According to Galletta (2013), qualitative and/or quantitative techniques may be employed as data collection instruments in collating data in a statistical survey. This study made use of qualitative methods in gathering data. In particular, the study employed both primary and secondary methods in obtaining qualitative data. The primary data was obtained through a semi-structured interview to solicit relevant data from a selected sample size of 22 respondents. However, the secondary data was collated through relevant internet sources including electronic fashion and textiles textbooks. The Kumasi Metropolis of Ghana was selected as the research location.

The composition of the sample includes Fashion Design practitioners (10), Clothing and Textile Teachers/Fashion Designers (7) and Historians (5). The data gathered from both the primary and secondary sources were filtered, coded, transcribed and processed/analyzed through the Statistical Package for the Social Sciences (SPSS). The interview guide was partitioned into two sections. These included section “A” which concentrates on the participants’ profile information and section “B” relates to the themes according to the research objectives.

The study employs the theory of facilitation, and the theory of needs as a design tool in translating and stimulating the co-design process. The data gathered were analyzed qualitatively by demonstrating patterns and trends from the information collected (Best and Khan 1996). It also includes providing an explanation of the large number of information gathered by organizing data and establishing classifications and themes.

5 Results

5.1 Bio-Data of Participants

The bio-data of respondents who took part in the interview are presented below.

As shown in Table 1 the gender gap among participants is a significant and consistent observation. Female participants dominate the study, accounting for 100% of Unmarried participants, Historians, Fashion Designers/Teachers, and Industry Players. Within the Married group, there is no male representation. The considerable gender discrepancy shows that the study predominantly contains female participants. This conclusion could be crucial when interpreting data, as gender may alter perceptions and viewpoints.

Participants in this study exhibit variances in educational backgrounds. For the Married group, there is a nearly equal proportion of individuals with bachelor’s degrees and Pre-Tertiary education. In contrast, Unmarried people have a higher proportion of Pre-Tertiary schooling, indicating those yet to complete higher education. Historians

Table 1. Below is a descriptive statistic of the survey participants.

		Married		Un-Married		Historians		Fashion Designers/Teachers		Industry Players (GNTDA)	
		Freq	Per cent	Freq	Per cent	Freq	Per cent	Freq	Per cent	Freq	Per cent
Gender	<i>Male</i>	0	0%	0	0%	0	0%	2	20%	2	20%
	<i>Female</i>	14	100%	16	100%	5	100%	8	80%	8	80%
Educational Level	<i>Pre-Tertiary</i>	6	44%	9	56%	0	0%	0	0%	1	10%
	<i>Bachelor</i>	8	56%	7	44%	3	60%	9	90%	9	90%
	<i>Masters</i>	0	0%	0	0%	2	40%	1	10%	0	0%
Age - Range	<i>25 -34</i>	7	50%	15	94%	0	0%	1	10%	0	0%
	<i>35 - 44</i>	4	29%	1	6%	0	0%	5	50%	6	60%
	<i>45 - 54</i>	2	14%	0	0%	2	40%	2	20%	3	30%
	<i>55 - 64</i>	1	7%	0	0%	3	60%	2	20%	1	10%

are generally bachelor's degree holders, whereas Fashion Designers/Teachers demonstrate a mix of Pre-Tertiary, bachelor's and master's degree qualifications. Industry Players typically possess bachelor's degrees, with relatively few holding Master's degrees. These educational variations imply a wide set of qualifications and experiences among participants that could influence research findings and debates.

The age distribution across the participant categories indicates variation in age groupings. The Unmarried group is skewed towards a younger generation, with the majority falling in the 25–34 and 35–44 age ranges. The Married category covers people across various age groups. Historians have a greater age spread, with representation in the 35–44, 45–54, and 55–60 age categories. Fashion Designers/Teachers and Industry Players span several age ranges, but notably, no individuals fall within the 45–54 and 55–60 age ranges in these categories. The wide variety in age distribution illustrates the range of life experiences and viewpoints contained in the investigation.

5.1.1 Presentation of Results on Co-design Concept

The data in Table 2, demonstrates considerable variances in fabric preferences across the categories. People in the Local fabric choice category dominate, with Fashion Designers/Teachers (70%), Industry Players (80%), Historians (80%), Married (64%), and Unmarried (69%) people selecting local fabrics. However, Foreign fabric preference is also substantial, with Fashion Designers/Teachers (30%), Industry Players (20%), Historians (20%), Married (36%), and Unmarried (31%) persons favouring foreign fabrics. This study demonstrates that there is a preference for both local and international materials within the fashion and design sector.

Table 2. Below presents the results of the four (4) thematic areas from of respective respondents concerning the co-design concept.

Co-Design of Bridal gown		Fashion Design Practitioners	Fashion Designers/Teachers	Historians	Married Couples	Un-Married Couples
Client Influence on the choice of fabric for bridal gowns	Local	8 (80%)	7 (70%)	4 (80%)	9 (64%)	11 (69%)
	Foreign	2 (20%)	3 (30%)	1 (20%)	5 (36%)	5 (31%)
Client Influence in the design of gown	Yes	3 (30%)	2 (20%)	1 (20%)	6 (43%)	4 (25%)
	No	7 (70%)	8 (80%)	4 (40%)	8 (57%)	12 (75%)
Sew to meet the needs of the client	Yes	1 (10%)	1 (10%)	0	2 (14%)	1 (6%)
	No	9 (90%)	9 (90%)	5 (100%)	12 (86%)	15 (94%)
Style of sewing preference	Traditional	5 (50%)	4 (40%)	3 (30%)	6 (43%)	7 (44%)
	Simple	3 (30%)	4 (40%)	2 (20%)	5 (36%)	7 (44%)
	Foreign	2 (20%)	2 (20%)	0	3 (21%)	2 (12%)

The majority of participants in all categories express a readiness to support client influence in the design of dresses. In the “Yes” group, Fashion Designers/Teachers (80%), Industry Players (70%), Historians (40%), Married (57%), and Unmarried (75%) persons are receptive to client influence. In contrast, in the “No” category, a lesser percentage of participants in each category are against client influence, ranging from 20% to 30%. This suggests that, in general, professionals in the fashion and design business are open to engaging with clients in the creative process.

A considerable percentage of participants from all categories sew to suit the demands of the client. In the “Yes” category, Fashion Designers/Teachers (90%), Industry Players (90%), Historians (100%), Married (86%), and Unmarried (94%) individuals prioritize addressing client needs. However, in the “No” category, there is a minority of participants who do not necessarily sew to suit client requests, ranging from 6% to 14%. This emphasizes the client-centric approach followed by the majority of professionals in the sector.

Participants exhibit distinct preferences for the style of sewing. The “Traditional” style is liked by a considerable percentage of Fashion Designers/Teachers (40%), Industry Players (50%), Historians (30%), Married (43%), and Un-Married (44%) participants. The “Simple” style is also popular, with 20% to 30% of people in various

groups favouring it. The “Foreign” style is less liked, ranging from 12% to 21% among participants. This displays a diversity of sewing style preferences within the business.

5.1.2 Presentation of Results on Sustainable Bridal Gowns

The data demonstrates various amounts of value attributed to sustainable gowns across categories. A high majority of Fashion Designers/Teachers (70%), Industry Players (80%), Historians (100%), and Unmarried participants (100%) emphasize the necessity of sustainable dresses. However, the value is lower among the Married participants (71%), with only 29% not attributing considerable value to sustainability.

A large majority of participants from Fashion Designers/Teachers (80%) and Industry Players (80%) are prepared to patronize sustainable gowns regardless of their lifestyle. In contrast, a lesser fraction of Historians (40%), Married participants (71%), and Unmarried individuals (75%) exhibit this inclination.

The sustainability element greatly informs the purchase of bridal gowns. A considerable number of participants across all categories (varying from 80% to 100%) consider sustainability while choosing bridal gowns. The Unmarried participants (100%) are particularly committed to this issue.

Preferences for the style of sustainable bridal gowns differ. Some individuals choose the “Traditional” style (ranging from 10% to 30%), while others prefer “European” (ranging from 10% to 36%) or a blend of both notions (ranging from 30% to 50%).

Participants describe diverse methods of gown maintenance. A portion likes to discard bridal gowns (varying from 20% to 40%), while others choose to store them (ranging from 60% to 71%). A smaller number implies a propensity to reuse gowns (ranging from 0% to 12.5%).

6 Discussions

The study highlights the importance of co-design in the bridal fashion industry within the Ghanaian marriage culture. The outcome of the experiment indicated that ‘ordinary users’ can develop ideas that will be relevant input for service innovation; thus, their ideas will be considered more innovative (originality) and appropriately fit the needs of users (user value) than the ideas developed by professional designers. However, the ideas of professional designers are considered more technologically appropriate (producibility) than the ideas of ‘ordinary users’ (Kristensson et al. 2002).

The findings in Table 2, imply that 80% representing the majority of participants express preferences for co-design and local fabric in the production of bridal gowns for extended life. Whereas 20% representing the lesser percentage of participants in each category are against client influence. This suggests that the Ghanaian bridal gown sector should be revolutionised towards co-design and consumption of local fabric in the production of bridal gowns within the Ghanaian marriage culture.

The data in Table 3 indicate the varied degrees of attention placed on sustainability in the bridal gown industry. Professionals and participants display variances in their ideals and behaviours, with some being more inclined towards sustainable gowns. There is also a spectrum of preferences in gown styles and care procedures. This move towards sustainability is evident in the majority of participants’ willingness to include sustainability

in their shopping decisions. The result also underscores the necessity of the fashion industry, which focuses on prolonging garment lifespan, decreasing waste, and encouraging reuse. Illustrating the growing awareness of sustainability in the fashion industry, it can be incorporated into the approach to the design of bridal gowns.

Table 3. Below presents the results of five (5) thematic areas from the respective respondents on Sustainability in the Ghanaian bridal gown industry.

Influence of Sustainability on the use of Bridal gown		Fashion Design Practitioners	Fashion Designers/ Teachers	Historian	Married	Un-Married
Attach much value to sustainable gown	Yes	8 (80%)	7 (70%)	5 (100%)	10 (71%)	16 (100%)
	No	2 (20%)	3 (30%)	0 (0%)	4 (29%)	0 (0%)
Regardless of lifestyle will patronize sustainable gown	Yes	8 (80%)	8 (80%)	4 (40%)	10 (71%)	12 (75%)
	No	2 (20%)	2 (20%)	1 (20%)	4 (29%)	4 (25%)
Sustainability will inform the purchase of a bridal gown	Yes	8 (80%)	9 (90%)	4 (80%)	14(100%)	16 (100%)
	No	2 (20%)	1 (10%)	1 (20%)	0 (0%)	0 (0%)
The style for sustainable bridal gown	Traditional	3 (30%)	3 (30%)	1 (10%)	3 (21%)	2 (12%)
	European	3 (30%)	2 (20%)	1 (10%)	5 (36%)	7 (44%)
	Both concept	4 (40%)	5 (50%)	3 (30%)	6 (43%)	7 (44%)
Maintenance of bridal gown	Discard	3 (30%)	2 (20%)	2 (40%)	3 (21%)	2 (12.5%)
	Stored	7 (70%)	6 (60%)	3 (60%)	10 (71%)	12 (75%)
	Re-use	0 (0%)	2 (20%)	0 (0%)	1 (8%)	2 (12.5%)

7 Conclusions and Recommendations

The concept of co-designing bridal gowns within the Ghanaian marriage culture would be an exciting development. The study reveals exciting preferences among study participants i.e. Fashion Designers/Teachers, sector Players, Historians, and participants from different marital status categories. The findings indicate the need for a co-design approach in the design of bridal gowns for extended life. (Greengrass 2016). The objective of

the study resonates with Greengrass's discussion of co-design for extended life, where comparable values of inclusivity, comfort, and adaptability are keys. Both co-design scenarios underline the benefits of collaborative and individualized methods to fashion design, responding to the unique demands and preferences of wearers.

The sustainability of bridal gowns, as highlighted in the study, is in accordance with the larger global shift towards sustainable fashion, as defined by Welters (2022). Bridal gown professionals and participants are increasingly understanding the importance of sustainable materials, ethical production techniques, and circular fashion principles in their choices. This shift towards sustainability in bridal apparel shows the industry's expanding commitment to lowering its ecological and societal imprint. These findings can aid industry professionals and scholars in understanding the emerging trends of the industry and the factors influencing sewing preferences and practices. The study recommends bridal gown designers, manufacturers, and industry stakeholders should continue to align their processes with these increasing consumer expectations and global sustainability initiatives to contribute to a more responsible and ethical fashion industry.

References

- Armstrong, C.M., Niinimäki, K., Lang, C.: Towards Design Recipes to Curb the Clothing Carbohydrate Binge. *Design Journal* **19**(1), 159–181 (2016). <https://doi.org/10.1080/14606925.2016.1109207>
- Allwood, J.M., Laursen, S.E., de Rodriguez, C.M. Bocken, N. M. P. (2006). *Well Dressed? The Present and Future Sustainability of Clothing and Textiles in the United Kingdom*, Institute of Manufacturing, University of Cambridge, Cambridge, UK
- Asmah, E.A., Frimpong, C., Asinyo, B.: Adaptation of traditional symbols into bridal wear. *Arts Des. Stud.* **19**(1), 13–20 (2014)
- Bradwell, P., Marr, S.: Making the most of collaboration: an international survey of public service co-design/prod. UK. DEMOS (2008). Retrieved from <http://www.demos.co.uk/files/CollabWeb.pdf>. Accessed 24 Oct 2021
- Brown, T., Kätz, B.: Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation, p. 2009. Harper Business, New York (2009)
- Carter, J., Duncan, S.: Wedding paradoxes: individualized conformity and the 'perfect day.' *Sociol. Rev.* **65**(1), 3–20 (2017). <https://doi.org/10.1111/1467-954X.12366>
- Chen, H.O.: "Bridal Photography Industry" for discussing the key success factors in the industrialization of Cultural and Creative Industries (2005). https://scholar.google.com/scholar?cites=2562826947819190726&as_sdt=2005&scioldt=0,5&hl=en
- Duncan, S., Phillips, M.: New families? Tradition and change in modern relationships. *Br. Soc. Att.* **24**, 1 (2008)
- Duschinsky, R.: Tabula rasa and human nature. *Philosophy* **87**(4), 509–529 (2012). <https://doi.org/10.1017/S0031819112000393>
- Earley, R.: Designing fast & slow. Exploring fashion textile product lifecycle speeds with industry designers. *Des. J.* **20**(sup1), S2645–S2656 (2017). <https://doi.org/10.1080/14606925.2017.1352776>
- Ehrman, E.: The wedding. 300 years of bridal fashion. In: *Victoria and albert museum. south kensington, london SW72RL* (first edit, Vol. 1, Issue 3). V&R Publishing (2011). <https://doi.org/10.1053/j.ajkd.2011.01.006>

Appendix J

Turnitin Reports

Multi-Purpose Concept of Design: A Sustainable Strategy in Addressing the Widespread Redundancy of the “White Wedding Gowns” in the Ghanaian Culture

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