PERCEPTION AND PREFERENCE OF COLOUR ON AND IN RESIDENTIAL BUILDINGS IN BENIN CITY, EDO STATE

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A RESEARCH DISSERTATION SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc) DEGREE IN ARHITECTURE.
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DECLARATION

I, AKHIGBE AYOMIDE BLESSING, with MAT.NO.: ENV2103328 hereby declare that this project work titled **"PERCEPTION AND PREFERENCE OF COLOUR ON AND IN RESIDENTIAL BUILDINGS IN BENIN CITY, EDO STATE"** is a record of an original work done by me, as a result of my research effort carried out in the Department of Architecture, Faculty of Environmental Sciences, University of Benin, under the supervision of ARC. (MRS) G.E.O IFADA . All academic material used in this work and its sources has been duly acknowledged.

_____ _____

Akhigbe Ayomide Blessing **Date**

CERTIFICATION

This is to certify that this project report for the 2024/2025 session is written and submitted by AKHIIGBE AYOMIDE BLESSING with matriculation number **ENV2103328** under my supervision and meets the required regulations governing the award of the bachelor's degree in architecture of the University of Benin, Benin City, Edo State, Nigeria. We thereby certify that it has not been submitted in this or any other university for the award of bachelor's degree and is approved for literacy presentations.

ARC. (MRS) G.E.O. IFADA	**DR. (ARC.) IWUCHUKWU O.U.**
Project Supervisor	**Head of Department**
Date	**Date**

DEDICATION

This project is dedicated to the Almighty God, the author and finisher of our faith who has been with me since the beginning of my life on earth. Also, I dedicate this project with great love and affection to my parents, Teachers, friends, and loved ones.

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to God Almighty who has done wonders for me thus far; I would also like to thank my parents who sponsored my education all through and my siblings for their love and support. I am also grateful to my friends and colleagues who were always willing to share their knowledge and expertise, my relatives who came through in my broke days and once again I would like to say God came through for me.

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ABSTRACT

Colour is an inextricable element of the world we are in, and its influence on how people perceive their surroundings is irrefutable. Colour is considered as an integral element of our environment, natural and constructed. The psychological effects of color mean that color's impact on each and every individual are vast, however, people rarely have a clue of how these effects are even occurring. Psychologically certain feelings or reactions can be induced by colour, the same applies in architecture colour impacts how the users of the building feels. Even though most of people don't spend a lot of time thinking about the effects of color in their homes, the color and design in our home should reflect the people who live inside, the designers and homeowners should use colors wisely to create the intended atmosphere in each space. This study highlights the important role of colour in residential designs. It is an undertaken study comprising of a survey of interviewed people from different walks of life in Benin City to assess their perception and colour preference in the use of colors in residential buildings and concluded that people expressed color as an important factor in their homes. They also believe that color affects health, mood & emotions of the person.

CHAPTER 1

1.0 INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Colours are an inextricable component of our universe, and their influence on our perception of the environment is evident (Gokcakan *et al.,* 2016). The environment and its colours are perceived by humans and their brains process and evaluate the observed information on both objective and subjective bases. Psychological, communicative, and informational impact are aspects of our perceptual assessment processes. Colour is one of the most powerful tools in architectural design, influencing both the visual appeal and the emotional perception of built environments (Kuehni, 2015). Therefore, the goals of colour design in architectural spaces are not limited solely to aesthetics and decoration (Mahnke, 2015). Colour, empirically, is a perceptual by-product of atomic and sub-atomic interactions at the molecular level, a ubiquitous phenomenon in the material world (Hussain, 2021). Colour is everywhere; it can be subdued to increase relaxation or heightened to call attention to certain details (Kuehni, 2015). Colour continually surrounds us and intercedes in our perceptual experiences, comprising a continuous interpretive moment (Hussain, 2021). Colour can lure us into eating and consuming, or even just buying. Colour has probably helped us to survive as humans in identification and symbolization (Kuehni, 2015). Our experience of colour can have important implications for our emotional and psychological states (Hussain, 2021). One of our five senses is sight, and colour plays a significant role in what we see. Colour has evolved over the years into much more than communication and survival tools, it has grown to aid aesthetic pleasures by way of designs, crafts, and art. Humans have been left puzzled by the nature of colour experiences since the beginning of time, and it has led to various answers to this purpose. Everyday experiences have formed a number of different colour phenomenons in the natural world, from the sunset's colour, to the colour of the rainbow, to the colour of natural occurrences, nature (kuehni, 2015).

Colour is so much more than the physical; it is what we see, it is the modification of light physically by colorants as sighted by the human eye and processed by the brain. Colour exists only in the mind of the viewer. Colour is a result of the interaction of light on an object, and the eye and the brain or visual system. (Berns, 2019). Colour has been identified as important for human needs, not only in the context of decoration or aesthetic values but also to meet the broadly understood human expectations in relation to emotions. Colour science is a broad field

of study that includes colour in natural environments, Built environments, and socio-cultural environments. Colour is a key element of visual perception (Jaglarz, 2023). Colour has a significant impact on the psyche of people; colours can completely change a person's mood because the brain reacts differently to individual colours. It also affects human emotions, health, well-being, and human aura or energy; therefore, it can be helpful in therapy and treatment. Furthermore, colour seems to be extremely important in everyday human life and closely related to many life activities, needs, and interests of a person. It plays an essential role in daily items and industrial design (Radwan, 2015).

Colour perception is subjective; it depends on physiological, psychological, and environmental conditions (Jandaghian *et al.,* 2025). Colour is perceived first out of eighty per cent of visual sensations we receive through our senses. In the colourless world, colour is an illusion, and the various colours that we see, viz, -a- viz our eyes vibrate at different frequencies and wavelengths (red, orange, yellow, green, blue, indigo, violet, and magenta). When there is light on a material, the human eye may perceive a colour. Colour information in each visual stimuli, such as hue, brightness, and saturation, is seen and processed by visual and cognitive systems, and has the ability to alter perceptions, emotional, physical, and behavioral responses. (Akanksha *et al.,* 2022). Colour is also a characteristic feature of architecture and urban space that attracts the human eye. We notice the color of the building earlier than its shape (Thurmann-Moe, 2017). The variation and diverse use of colour in individual elements of urban spaces proves helpful in promoting aesthetic, emotional, synesthetic, associative and symbolic experiences and thus colour stands as an important feature of architecture and urban space configuration and the well-being of its users (Serra *et al.,* 2021). One of the essential roles of architecture is to provide built environments that sustain the occupants' psychological well-being. This role is even more important because, in modern society, more than seventy per cent of a person's lifespan is spent around buildings (Aleksandra, 2019).

In residential architecture, colour choices extend beyond decoration, serving as communicative elements that reflect cultural identity, socio-economic background, and personal psychology (Feisner & Reed, 2013). The way people perceive and prefer colours in their living environments can significantly affect comfort, satisfaction, and even energy efficiency (Anyanechi, 2024). Colour choices on facades and interiors shape not only aesthetic appeal but also psychological

well-being and cultural identity (Berns, 2019). Colour preference has become an important subject in environmental psychology, architecture, and interior design due to the growing awareness that colour influences human perception, emotion, behaviour, and spatial experience. Contemporary research shows that colour is not merely decorative; it actively shapes psychological responses, comfort, arousal levels, and user satisfaction within built environments (Mahnke, 2015; Radwan, 2015). As residential and urban spaces evolve—becoming smaller, denser, and more technologically integrated—understanding how individuals and groups prefer and react to colours has become crucial for designers, particularly in creating residential environments that support emotional well-being and cultural identity (Jaglarz, 2023; Anyanechi, 2024).

In Africa, colour serves as an aesthetic resource, a social language, and a medium to show spirituality and religions in buildings (Oladesu *et al.,* 2019). Ethnic societies have equipped their homes with colour through the use of ornaments and motifs, having religious and cultural patterns, even down to the facades, to tell stories from generations before that not only celebrate colour but also explore its ethnic meanings. For example, the Ndebele houses, colour, and geometric motifs tell us about social status, rituals, or resistance (Yakubu, 2023). In some African countries, there are regulatory policies and government directives that influence the colour choices of places, to promote harmony, heritage, or, even more so, identity (Olage, 2025).

In Nigeria, traditional colour usage remains the foundation for modernisation in architectural expressions. White represents purity or divinity, red represents life or danger, black represents earth or ancestral power, and green represents fertility or nature, often incorporated in building facades, spaces, and architecture. These colour identities were both communicative and a function of materials (Oladesu *et al.,* 2019). During the period of colonisation and the spread of Western architectural education, new materials were introduced in the form of ready-made paints, limewash, and tiles. Religious beliefs and culture amplified the symbolic importance of certain colours, for instance, white in the context of churches was interpreted within Christian rituals and institutional identity (Oladele, 2020). Towards the late twentieth and twenty-first century, Nigerian buildings started adopting painted finishes and colour palettes initiated by imported materials and global aesthetics, rather than by indigenous tradition. After the colonial regime, Nigerian architecture blended traditional and modernity. Studies of civic and institutional

facades show the gradual movement from strictly white or imported palettes to more regional and conventional earth tones and localised ornamentations, partially due to maintenance in tropical climates and renewed interest in cultural heritage (Obaleye 2020). Contemporary Nigerian designs now incorporate bold accents of yellow and gold to signify prosperity, alongside neutral tones like grey for urban minimalism (Okeke 2019).

Benin City has undergone rapid urbanisation, transitioning from pre-colonial courtyard compounds with natural polychrome to colonial-influenced bungalows and contemporary concrete structures often painted in vibrant or neutral tones (Ekhaese & Ediae, 2014). Modern exteriors increasingly feature colourful facades, redefining urban aesthetics amid socio-economic changes (Olage, 2025). Yet, colour perception remains underexplored in this context, despite its role in evoking emotions like calmness (blue) or energy (red) (Jonauskaite *et al.,* 2020).

Globally, architects like Le Corbusier advocated polychrome to manipulate spatial illusions and emotions through curated palettes (Souza, 2023). colours carry symbolic weight—red for spirituality in Edo traditions, white for drives purity (Oladesu & Otu, 2019). Some modern buildings in Benin reflect art and culture through mural paintings or relief works on façades, ornaments and heritage motifs. These interventions suggest that colour is still being used to express identity, though often modified. (Omale *et al.,* 2024). Buildings such as Egedebe N'okaro, constructed in the early twentieth century, retained red earth brick, white paint, cream tones and contrast lines that highlight its aesthetic beauty, showing how colour is material and symbolic in Benin residential architecture. (Enwonwu 2021). In recent times, modern paints highlight Edo's cultural motifs on building façades, preserving symbolic vibrancy and urbanisation (Okwueze 2018). Edo state architecture implores colour palettes that showcase heritage and enhance aesthetic appeal, but also narrates royal and communal legacies (Imafidon 2022). This study focuses on analysing how different colour choices influence perception pertaining to residential buildings within Benin City. It seeks to understand the relationship between colour preferences and socio-cultural factors that shape architectural expression (Radwan, 2015). It also explores emotional associations with colours and examines how gender and age differences contribute to perception diversity (Bower *et al.,* 2022).

1.2 STATEMENT OF THE RESEARCH PROBLEM

A study shows that both the interior and exterior of a place significantly enhance the comfort and functionality of that space (Anyanechi, 2024). In both schools of architecture and urban design, as well as in design studios, color is rarely the subject of serious research and observation. Color often comes at the end of the design process, and the rationale behind the choice of color is almost never questioned. Color is considered secondary to the form and structure of the building (Minah, 2008). Color is an important feature of architecture and urban space configuration and has a significant impact on the well-being of its users, but considering color choices is a complicated issue because color preferences seem to depend on personal characteristics and psychophysical structure (Serra *et al.,* 2021). Color has a large effect on human emotions, moods, and behavioral patterns, but that is not to the knowledge of the average person. Color has a huge impact on feelings, psychologically and physically. Different colors characterize different moods, which is why it is very important to understand the impacts and effects of various colors while applying them in different spaces (Rida *et al.,* 2021). Despite colour's role in architecture, Benin City's rapid urbanization leads to haphazard colour choices, causing visual discord and ignoring emotional needs (Jevremović *et al.,* 2020). Gender/age differences in perception are overlooked, potentially alienating groups (Ulusoy, 2020). Lack of localized studies hinders sustainable, inclusive design (Wang, 2024). While numerous studies have addressed colour perception globally (Costa *et al.,* 2018; Güne, 2020; Wang, 2024), there remains limited research focusing on local and emotional contexts in Nigerian cities, especially in Benin City. Most Nigerian studies emphasize aesthetics and symbolism without analyzing perceptual and psychological dimensions in residential environments (Okeke, 2019; Imafidon, 2022).

Furthermore, few studies have examined how socio-economic status, gender, and age jointly influence colour perception in residential settings (Ulusoy, 2020; Wang *et al.,* 2022). Therefore, this study fills the gap by integrating emotional and demographic variables to understand how residents of Benin City perceive and prefer colours in their homes (Yakubu, 2023; Reuben & Ajayi, 2024).

1.3 RESEARCH QUESTIONS

Given the challenges identified in the Statement of the Research Problem, the following

questions have been developed to explore the relationship between facade design, urban identity, and social perception:

1. How do different colour choices influence colour perception in residential buildings in Benin City, Edo State?
2. How do socioeconomic status and urbanisation influence the colour choices of homeowners in residential buildings in Benin City, Edo State?
3. What emotions are perceived when met with selected colours?
4. Do gender and age affect colour perception in residential buildings in Benin City, Edo State?

1.4 RESEARCH AIM AND OBJECTIVES

The aim of this study is to understand the influence of colour in residential buildings in Benin City, Edo, focusing on perception and preferences of colour in and on residential buildings, with objectives specifically to:

1. identify how different colour choices influence the perception of colour in residential buildings in Benin City, Edo.
2. examine how socio-economic status and urbanisation influence the colour choices of homeowners in residential buildings.
3. investigate the emotions or feelings selected colours evoke in people.
4. evaluate how gender and age affect colour perception in residential buildings.

1.5 SIGNIFICANCE OF STUDY

This study is important because recent research emphasises the significant but unexplored influence of colour in residential buildings in tropical areas. Colour is often considered an afterthought, or rather the domain of the interior designer, rejected by modernists at the beginning of the century along with other forms of decoration which should not be so (Jaglarz 2023). It enhances resident well-being through emotion-aligned designs and bridges tradition-modernity for sustainable development (Cisek & Gacek, 2022).

The findings of this study reinforce the necessity for professionals to consider user preferences in both interior and exterior design. Proper colour application enhances visual comfort, psychological well-being, and aesthetic satisfaction, thereby increasing user acceptance and the overall value of residential structures (Cisek & Gacek, 2022). For designers and architects in

Nigeria, understanding local colour preferences and perceptions ensures contextually responsive designs that respect cultural identity while embracing modernity (Oladesu & Otu, 2019; Reuben & Ajayi, 2024). Moreover, the study bridges the gap between architectural theory and user experience, promoting a human-centred approach to colour design. It encourages architects, interior designers, and urban planners to make evidence-based colour decisions grounded in psychological, cultural, and environmental data (Bower *et al.,* 2022).

1.6 SCOPE OF STUDY

This research will focus on the influence of colour on residential buildings in Benin City, Edo state, with special emphasis on colour choices and the psychological effects of colour on exteriors and interiors of residential buildings. It will examine the application of colour, identifying its role in creating a user's experience, environmental performance and architectural expressions. This study is categorically within the constraints of residential buildings within Benin City, Edo State, where the use of colours and paints is visible. While institutions and buildings that symbolise heritage have been previously studied, this research will focus on domestic spaces, which remain understudied in architectural colour studies.

1.7 STUDY AREA

This study area is Benin City, the capital of Edo state, located in the south south region of Nigeria. It lies at approximately 6.20 degrees north on the latitude and 5.37 degrees east on the longitude. It experiences a tropical climate, and it is home to over 1.7 million people. The city is historically known as the seat of the ancient Benin kingdom, famous for its art, architecture, and cultural heritage.

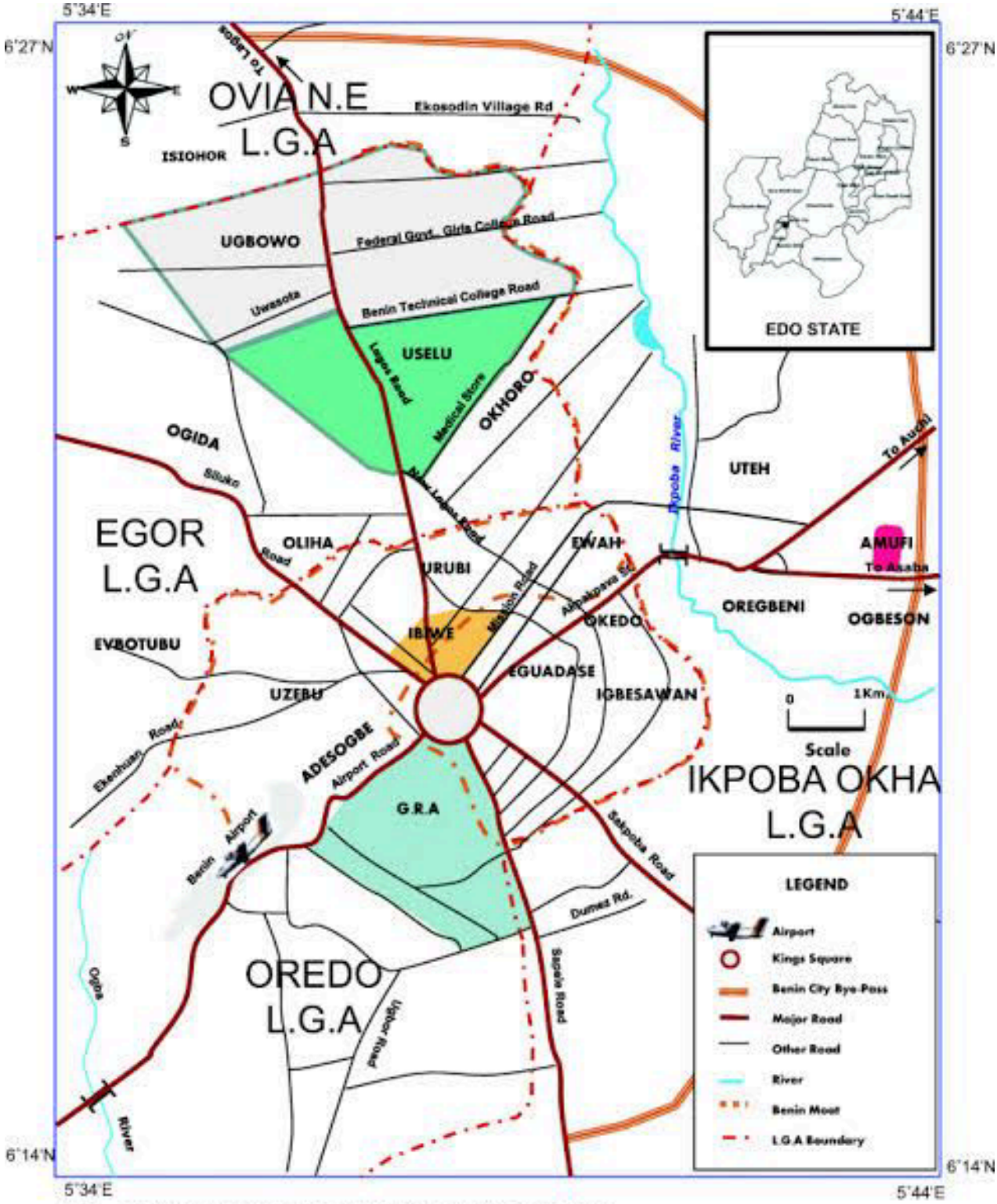

Figure 1.1: Map of Benin City, showing the study areas
Source: Ministry of lands and survey, Benin City (2014)

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 THEORETICAL FRAME WORK

The human experience is steeped in colour, shaping how we interpret matter (particles and fields) (Hussain 2021). It is a widely accepted phenomenon that colour is a subtle stimulator with a silent impact on physical, physiological, psychological, and sociological aspects in everyday human lives (Akanksha 2022). Colour has the energy to influence cognitive processes as well as emotions (Cisek 2022). Life on earth is surrounded by different colours, shades, and lights; everything directly affects humans' moods. When we talk about colour, every colour has a different sense of connection with the human mind. Colour can be selected according to our choices and moods, and can be changed too (Michael 2016).

Colour perception in architecture extends beyond aesthetics, influencing psychological responses, spatial illusions, and emotional experiences within built environments. This study aims to understand colour perception in residential buildings in Benin City to provide a theoretical foundation for this research. This section explores relevant theories and concepts relating to colour perception in architecture. This study will then draw up its core concepts from various fields, including;

2.1.1 Le Corbusier's Theory of Architectural Polychrome (1931)

Le Corbusier's colour theory marked a transition from decorative use to architectural polychrome, integrating colour as an essential spatial element rather than a superficial finish (Katōh, 2000). His Salu bra colour keyboards provided harmonised palettes that influenced spatial depth and emotional tone (Serra, Manav, & Gouaich, 2021). Le Corbusier argued that architectural colour should respond to space, light, and material, guiding human perception through proportion and harmony (Souza, 2023). In residential architecture, applying this principle ensures that colour enhances volume perception and comfort (Mahnke, 2015).

This study adopts Le Corbusier's Polychrome Theory as the primary framework, emphasising colour's role in spatial manipulation and emotion (Souza, 2023). His 63-shade palettes create illusions—light colours expand space, dark colours contract—relevant to Benin's compact compounds vs. sprawling suburbs (Katōh, 2000). Complemented by Mahnke's Colour

psychology, linking hues to physiological responses: blues calm, reds energise (Mahnke, 2015).

2.1.2 Goethe's Theory of Colours (1810)

Johann Wolfgang von Goethe's Theory of Colours remains one of the earliest frameworks to link colour to human emotion (Feisner & Reed, 2013). Goethe proposed that colours evoke specific psychological responses: for example, yellow stimulates warmth and happiness, while blue evokes coolness and melancholy (Kuehni, 2015). His model emphasised the subjective experience of colour perception, arguing that emotion rather than light wavelength defines colour's impact (Mahnke, 2015). In residential buildings, this theory suggests that interior and exterior hues influence mood and comfort (Costa *et al.,* 2018). For instance, bright colours may energise occupants, while muted tones provide calmness in resting areas (Ulusoy, 2020). In Benin City, where tropical daylight enhances colour intensity, Goethe's insights highlight how residents associate warm tones with vitality and cooler shades with relaxation (Imafidon, 2022).

2.1.3 Johannes Itten's Colour Contrast Theory (1921)

Johannes Itten, a Bauhaus theorist, expanded on Goethe's emotional approach by identifying seven contrasts of colour — hue, light–dark, cold–warm, complementary, simultaneous, saturation, and extension (Feisner & Reed, 2013). Itten argued that visual harmony depends on how these contrasts are balanced within design compositions (Kuehni, 2015). In architectural design, Itten's theory aids in selecting colour combinations that enhance visual comfort and spatial orientation (Radwan, 2015). For Benin's residential buildings, where façades often combine earthy reds, creams, and greens, these contrasts create rhythm and identity (Yakubu, 2023). The application of warm–cool balance also supports thermal comfort perception in the city's humid climate (Anyanechi, 2024). Itten's pedagogical model further implies that individual preference for contrast types relates to personality, gender, and cultural exposure (Ulusoy, 2020). Thus, this theory provides a foundation for analysing demographic variations in colour preference among Benin residents (Wang *et al.,* 2022).

2.2.4 Frank H. Mahnke's Environmental Colour Theory (1996–2015)

Frank Mahnke integrated psychology and environmental design by emphasising that colour influences human health, productivity, and well-being (Mahnke, 2015). His environmental colour theory postulates that spatial colour affects perception of temperature, scale, and emotion. For

example, warm colours visually advance and create intimacy, while cool colours recede and create spaciousness (Costa *et al.,* 2018).

In the context of Benin City, this theory explains why residents may associate lighter façades with openness and status, and darker tones with enclosure or protection (Chen *et al.,* 2020). Mahnke's approach also supports sustainable design principles, suggesting that strategic colour application can enhance daylighting and energy efficiency (Anyanechi, 2024). By integrating these theoretical frameworks, this research can develop a holistic understanding of colour perception in residential buildings in Benin City, Edo, Nigeria.

2.2 CONCEPTUAL FRAME WORK

Colour is not merely a decorative attribute; it is a perceptual and psychological element that defines spatial experience, user satisfaction, and environmental identity (Feisner & Reed, 2013). Within residential architecture, colour operates as a medium of communication, reflecting the lifestyle, values, and emotions of inhabitants (Mahnke, 2015). According to Kuehni (2015), colour perception in the built environment results from the interaction between light, surface materials, and human vision. Therefore, perception and preference of colour are shaped by physiological, cultural, and contextual factors (Radwan, 2015). This concept stems from colour as the origin and core visual element, breaking it down into two perspectives: preference and perception, which show how these two factors lead to different outcomes of colour. Colour preference refers to the conscious or unconscious selection of specific colours by individuals. This choice is not random; rather, it is shaped by several socio-demographic and contextual factors. These include urbanisation, age, economic status, and gender, all of which contribute to differences in personal taste, exposure, cultural conditioning, and lifestyle patterns. These influencing factors guide individuals toward particular aesthetic outcomes such as uniformity, uniqueness, beauty, and personal perception of suitability. Thus, this branch of the model demonstrates that colour preference is both subjective and socially conditioned, resulting from the interaction between personal identity and environmental context.

Colour perception refers to the way individuals visually interpret and experience colours in a built environment. Unlike preference, which is internally constructed, perception is heavily

moderated by light—both natural and artificial. Lighting conditions determine how warm, cool, or earthy colour tones are visually registered in a space. These categories influence spatial experiences differently by connecting colour perception under the influence of lighting to emotional and psychological states. The interaction of colour and light contributes to certain emotional reactions, such as the state of mind and general well-being. This suggests that colour does more than visually shape spaces; it has the capacity to regulate mood, influence comfort, and support psychological balance in residential settings.

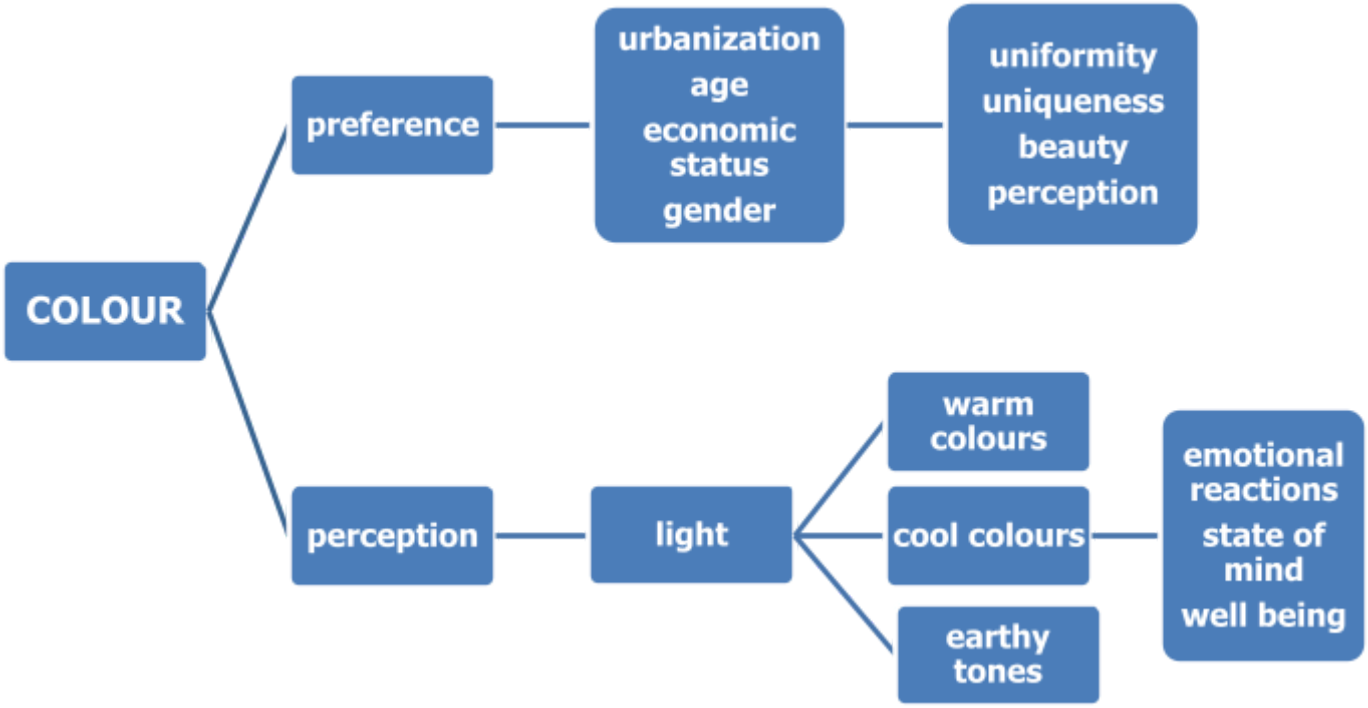

Figure 2.1: Conceptual framework
Source: Ministry of lands and survey, Benin City (2014)

2.3 LITERATURE REVIEW

2.3.1 Color Perception

Colour is a ubiquitous feature of our psychological experience. The human visual system constructs a perceptual experience of colour from wavelengths of light reflected or emitted from the objects and surfaces around us (Maule *et al.,* 2014). It is also strongly associative, with different colours having reliable associations with emotions (e.g., joyful yellow) (Jonauskaite *et al.,* 2019) and abstract concepts (Tham *et al.,* 2020). This enables colour to be used in symbols and signage (e.g., red for stop, green for go) as well as in marketing and design to communicate abstract concepts such as romance and environmentalism (Schloss *et al.,* 2018). Colour informs the other senses; the colour of a room's illumination will contribute to its perceived temperature (Huebner *et al.,* 2016).

Several studies indicate that human observers use the particular information conveyed by colour in tasks that require object detection and scene segmentation. Theoretical accounts locate colour perception at the interface of physical stimulus attributes (hue, value/lightness, and chroma/saturation), the spectral quality of illumination, and surface properties such as texture and gloss (Ulusoy, 2020). Perceptual models emphasise that identical surface pigments can be perceived differently under varying illuminants and viewing geometries, and these effects directly influence spatial legibility and material appearance in domestic interiors (Wang, 2024). Empirical experiments using standardised colour samples and simulated rooms find that lighter, low-chroma colours increase perceived room brightness and apparent spatial volume, while darker, more saturated colours reduce perceived size and increase feelings of enclosure (Costa *et al.,* 2018). Experimental research similarly reports that ceiling colour and wall-ceiling contrast are reliable determinants of perceived ceiling height and openness in residential rooms (Wang, 2024). Studies using immersive virtual environments and physiological measures demonstrate that blue and green hues tend to lower physiological arousal and are perceived as cooling or

calming in enclosed domestic settings (Bower *et al.,* 2022). Conversely, exposures to warm hues such as red and orange typically elevate subjective arousal and convey a sense of increased thermal sensation, even when ambient temperature is held constant (Güne, 2020). Evidence from façade studies shows that exterior colour choices influence both visual perception of the building and measured surface temperatures, with lighter, higher-reflectance finishes reducing solar heat gain relative to darker finishes (Jandaghian *et al.,* 2025). Design implications from these empirical findings recommend selecting low-chroma, light-toned palettes for small or low-lit residential rooms to enhance perceived spaciousness and daylighting effectiveness (Ulusoy, 2020).

2.3.2 Influence of Colour Perception In Buildings

Colour is the basic unit of visual information. Research and analysis of the perception and influence of colour can be used to solve many specific problems in the practice of architectural and urban design. Psychological research shows that colour not only gives people the impression of warmth and cold but also affects their perception of distance. Various colours have different effects on our consciousness. Among them, colours that appear convex are called advancing colours, and colours that appear concave are receding colours. In-depth research into the ergonomics of colour may provide clearer guidance on the use of colour in architectural and urban design in the future. Colour perception in residential settings is deeply rooted in psychological processes, as colours influence cognitive and emotional responses. According to Elliot (2018), colours trigger specific psychological reactions through associative learning and evolutionary instincts, shaping how residents perceive their environments. For instance, warm colours like red and orange are often perceived as stimulating, while cool colours like blue are calming (Bakker *et al.,* 2019). In residential spaces, these perceptions affect how individuals interpret the functionality and comfort of a room (Jalil *et al.,* 2018). The hue, saturation, and brightness of colours further modulate perception, with brighter shades often perceived as more inviting in living spaces (Kurt & Osueke, 2019). Studies have demonstrated that colour choices alter the perceived size, warmth, and functionality of residential spaces. Furthermore, studies found that lighter colours, such as pastel blues, make small rooms appear larger and more open, enhancing residents' sense of space (Zhang *et al.,* 2022). Conversely, darker colours like navy or charcoal can create a cosy but confined atmosphere, influencing perceptions of intimacy (Smith

& Park, 2019). Experimental research by Kim and Kim (2023) showed that residents in apartments painted with warm tones reported higher satisfaction with their living spaces compared to those with cooler tones (Kim & Kim, 2023).

2.3.3 Importance of Colour In Buildings

Colour plays a fundamental role in the design and perception of residential buildings. Beyond its decorative function, colour influences spatial experience, emotional well-being, cultural identity, and environmental performance (Al-Ayash *et al.,* 2021). In architectural design, it serves as a powerful tool that communicates mood, defines space, and enhances both the aesthetic and psychological quality of the built environment (Alhusban, 2022). The thoughtful application of colour in residential spaces contributes significantly to comfort, satisfaction, and the overall quality of life of occupants (Li & Wu, 2020). It builds aesthetics and enhances the visual appeal and the identity of residential buildings. It also contributes to architectural harmony by emphasising form, texture, and materiality, thus creating a unified and pleasing appearance (Kamaruzzaman *et al.,* 2020). The combination of exterior and interior colour schemes determines how light interacts with surfaces, influencing perception of space and ambience (Jalil *et al.,* 2021). Designers often use colour strategically to define zones, highlight features, and balance proportions within spaces (Al-Ayash *et al.,* 2021). Well-chosen colour palettes not only beautify but also communicate personality and social identity through the built form (Mensah & Quansah, 2019).

Colour creates a physical and emotional impact. Colour profoundly affects human emotions and psychological responses. Research indicates that warm colours such as red and yellow evoke energy and stimulation, while cool tones like blue and green induce calmness and relaxation (Jalil *et al.,* 2021). In residential interiors, the use of soothing colour schemes has been linked to reduced stress and improved well-being (Li & Wu, 2020). For instance, soft pastel colours can make small spaces feel larger and more comfortable, enhancing perceived spaciousness (Alhusban, 2022). The selection of colour, therefore, goes beyond aesthetics; it directly influences occupants' mental health and emotional attachment to their living environment (Kamaruzzaman *et al.,* 2020). It has cultural and social significance in society. Colour in residential design often reflects cultural symbolism and social status. In many societies, specific colours carry meanings associated with heritage, beliefs, and values (Mensah & Quansah, 2019).

For example, earth tones are often linked to tradition and stability, while bright hues may represent modernity or affluence. In African contexts, colour use in housing design frequently embodies local culture and environmental adaptation (Mensah & Quansah, 2019). Furthermore, the socio-economic status of residents influences their colour choices, as wealthier individuals tend to adopt more neutral and minimalist palettes reflecting global architectural trends (Kamaruzzaman *et al.,* 2020). Thus, colour becomes a language through which people express identity, aspirations, and belonging.

Colour creates environmental and functional considerations, beyond visual and cultural roles. Colour affects the environmental performance of residential buildings. Exterior colour choices influence thermal comfort and energy consumption by determining how much heat is absorbed or reflected (Sadineni *et al.,* 2019). Lighter shades tend to reflect solar radiation, keeping indoor spaces cooler in hot climates, while darker tones absorb heat, suitable for colder regions (Sadineni *et al.,* 2019). In tropical regions like Nigeria, the use of bright, reflective colours helps reduce dependence on artificial cooling systems, contributing to energy efficiency and sustainability (Alhusban, 2022). Moreover, colour contrast enhances visual orientation, aiding accessibility and spatial navigation within homes, particularly for the elderly or visually impaired (Li & Wu, 2020).

2.3.4 Psycology of Colours in Residential Spaces

Colour psychology is the study of hues as a determinant of human behaviour. Each colour has a certain psychological value. Colour and tone affect the comfort and productivity of the users of the indoor environment. Psychological perception of color interior environment can vary widely over time and is not constant. Colour perception can be perceived differently by everyone (Tantanatewin *et al.,* 2018). Research shows that interior colours elicit distinct emotional reactions that affect residential satisfaction. Cool colours such as blue and green are consistently associated with calmness, relaxation, and perceived spaciousness, making them suitable for bedrooms and study areas (Ibadullaev & Atoshov, 2019). Warm colours, on the other hand, tend to promote alertness, stimulation, and social interaction, which supports their use in living and dining spaces (Hiremath *et al.,* 2024). However, surface shape influences how residential colours are interpreted. Blue and blue-grey are commonly associated with cleanliness and calmness, while green-yellow was perceived negatively, linked with immaturity or discomfort. This

indicates that colour psychology in homes is context-sensitive and shaped by both cultural associations and individual experience (Chen *et al.,* 2024).

2.3.5 Socio-Economic Status and Colour Preferences

Socio-economic status (SES) significantly influences colour choices in residential buildings, as it reflects access to resources and aesthetic priorities. According to Johnson and Lee (2018), higher SES households often opt for premium paint brands and complex colour schemes, such as custom-mixed neutrals, to signal sophistication (Johnson & Lee, 2018). In contrast, lower SES households may prioritise cost-effective options like white or off-the-shelf colours due to budget constraints (Brown & Patel, 2020). A 2021 study by Garcia *et al.* found that wealthier homeowners used accent walls with bold colours to create focal points, a trend less common in lower-income households (Garcia *et al.,* 2021). Work on gender differences in colour preference and perception yields mixed results, with some studies reporting gender-linked tendencies in hue preference and others showing limited or context-dependent differences (He *et al.,* 2023). Experimental research in residential-like environments indicates that both age and gender interact with task demands and context: for example, younger adults may prefer saturated accent colours in living spaces while older adults and some female subgroups prefer more muted, balanced palettes for perceived calm (Poto nik, 2022). Practical recommendations from these findings emphasise adaptive colour strategies that prioritise high-contrast cues for ageing occupants and flexible accenting schemes to accommodate diverse gendered aesthetic preferences (Jaglarz, 2024).

2.3.6 Urbanization and Its Impact on Colour Choices

Colour in architecture evokes direct perceptual responses in humans, such as visual impressions. At the same time, it can cause side effects of behaviour, such as increased emotional reactions that regulate activity. We can discuss the stimulating aspect of colour in the environment (Ba´nka, 2016). Urbanisation shapes colour choices by influencing lifestyle and environmental factors. Urban dwellers often choose muted or monochromatic palettes to counteract the sensory overload of city life (Li & Zhang, 2019). In contrast, rural residents may select vibrant colours to reflect natural surroundings or cultural heritage (Kumar & Singh, 2022). Urbanisation also drives trends toward minimalist aesthetics, with greys and whites dominating modern city apartments (Chen *et al.,* 2020). These choices reflect a desire for simplicity and functionality in dense urban

settings (Park & Kim, 2023). Furthermore, a study found that urban high-income residents in the U.S. preferred eco-friendly paints with neutral tones, aligning with sustainability trends (Thompson *et al.,* 2020). In developing countries, rapid urbanisation has led to increased use of bright colours in low-income urban housing to foster community identity (Nguyen & Tran, 2021). Additionally, a 2023 survey by Patel and Kumar revealed that middle-class urban households in India increasingly adopted Western-inspired colour palettes, reflecting globalisation's impact on aesthetic preferences (Patel & Kumar, 2023). Urban space is worth analysing from the level of passers-by. Although open space is usually the most eye-catching, pedestrians also notice various colour accents—vibrating, patterned floors of squares and streets; benches; lanterns; hydrants; signboards; and many other small elements that create a unique atmosphere of the place. Curiosity and interest of passers-by are aroused by everything that stands out in space. People need contrasts and accents that make the street not seem endless, boring and tiring. The extraordinary art of designing urban space is the ability to enhance the diversity and liveliness of the street by using the colours of exhibitions, advertisements and small architecture that appeal to the imagination of observers, and the real mastery is the ability to match the colours of buildings and small space components (Jacobs, 2017).

2.3.7 Gender Differences in Colour Perception

Gender influences colour perception in residential settings, with studies indicating distinct preferences between males and females. According to Ellis and Ficek (2018), women are more likely to perceive warm colours like pink and coral as comforting, while men often prefer cooler tones like blue and green for their calming effects (Ellis & Ficek, 2018). Studies consistently show that adult women tend to exhibit a stronger preference for pink, purple, and certain warm hues, whereas adult men typically prefer blue and blue–green colours (Bonnardel *et al.,* 2018). This gender-related divergence in preference has been observed in multiple populations, suggesting that the phenomenon is widespread yet still modulated by cultural influences. Supporting this, cross-cultural investigations reveal that the commonly reported female preference for pink is prominent in many industrialised societies but not present in certain small-scale or non-Western communities, indicating that colour preference is shaped significantly by socialisation rather than innate biological inclination (Davis *et al.,* 2021; Al-Rasheed, 2015). A 2021 study by Wong *et al.* found that women valued aesthetic harmony in colour choices, while men prioritised functionality, such as colours that conceal wear and tear

(Wong *et al.,* 2021). These differences may stem from socialisation and gendered expectations in home design (Taylor & Moore, 2020). In applied architectural and environmental contexts, gender influences how individuals evaluate colour choices in the built environment. A 2023 study on façade design found that men and women differ in their preferences for saturation, brightness, and colour heaviness, indicating that gender may influence design acceptance and visual comfort in architectural settings (He *et al.,* 2023). This highlights the importance of acknowledging gender-related preferences when selecting colours for residential and urban design to improve user satisfaction and aesthetic appeal.

2.3.8 Age-Related Variations in Colour Perception

Age also shapes how colours are perceived in residential spaces. Older adults tend to prefer softer, less saturated colours, such as pastels, which reduce visual strain and create a serene environment (Smith *et al.,* 2019). In contrast, younger residents, particularly millennials, favour bold and trendy colours like emerald green or mustard yellow to reflect personal style (Lee & Park, 2022). A 2020 study by Chen and Liu found that children perceive bright colours like red and yellow as stimulating, influencing their behaviour in residential play areas (Chen & Liu, 2020). A 2023 experiment by Kim *et al.* showed that women aged 30–50 reported higher satisfaction with warm-toned bedrooms compared to men of the same age group (Kim *et al.,* 2023). Similarly, a 2019 study by Johnson and Brown found that older adults (65+) perceived white and beige interiors as more restful, while younger adults (18–30) found vibrant colours energising (Johnson & Brown, 2019). These findings suggest that colour perception is mediated by both biological and social factors across gender and age groups (Nguyen *et al.,* 2021). A substantial body of work finds age-related changes in visual function that alter colour discrimination and contrast sensitivity, with older adults often experiencing reduced sensitivity to short-wavelength hues and to chroma differences (Wang *et al.,* 2022). Empirical studies focusing on older residents report that colour visibility and high-contrast colour coding improve wayfinding and safety for seniors in domestic and care settings (Wang *et al.,* 2022).

2.3.9 Emotional Responses To Colours

Warm colours such as red, orange, and yellow evoke strong emotional responses in residential settings. Red is often associated with excitement and passion, but can also induce stress if overused (Elliot & Maier, 2018). Orange promotes warmth and sociability, making it ideal for

communal spaces like living rooms (Bakker *et al.,* 2019). Yellow is linked to optimism and energy but may cause discomfort in high saturation (Lee & Kim, 2020). These emotional responses shape residents' experiences of comfort and engagement. Cool colours, such as blue, green, and purple, are associated with calmness and relaxation. Blue is widely recognised for its soothing effects, often used in bedrooms to promote sleep (Zhang & Chen, 2021). Green evokes feelings of balance and connection to nature, enhancing well-being in residential spaces (Smith & Park, 2019). Purple, though less common, is perceived as luxurious but can feel cold in overly dark shades (Kumar & Singh, 2022). These findings highlight the restorative potential of cool colours in homes. A 2022 study by Patel *et al.* found that residents exposed to blue-painted rooms reported lower stress levels compared to those in red-painted rooms (Patel *et al.,* 2022). Similarly, a 2019 experiment by Thompson and Lee showed that green interiors increased feelings of tranquillity among urban residents (Thompson & Lee, 2019). A 2023 study shows that neutral colours like grey and beige fostered feelings of safety and neutrality, particularly in high-stress households (Wang *et al.,* 2023).

Decades of psychological research show reliable correspondences between colour categories and affective dimensions such as valence (pleasant–unpleasant) and arousal (calm–exciting) (Jonauskaite *et al.,* 2020). Empirical studies using the Geneva Emotion Wheel and similar tools demonstrate that colours like yellow and light tones often map onto positive, high-valence emotions, while dark and low-lightness colours are more likely to be associated with negative valence (Jonauskaite *et al.,* 2020). Interior-specific studies report that blue and green rooms are commonly associated with calmness, restoration, and reduced stress in domestic simulations and virtual room experiments (Güne, 2020). Conversely, red and orange colour treatments in residential interiors are frequently linked with increased arousal, attention capture, and mixed emotional connotations, including warmth and aggression, depending on context and culture (Fugate *et al.,* 2019). Neurophysiological evidence collected in controlled environment studies indicates that exposure to certain colours modulates autonomic markers and EEG signatures associated with emotional processing, lending objective support to subjective reports of colour-evoked affect (Bower *et al.,* 2022). Design guidance derived from emotion-focused work advises using calming cool hues in private, restorative zones and reserving warm, stimulating accents for social or active spaces, while always accounting for cultural and individual variability in colour-emotion mappings (Güne , 2020).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

Research design serves as a framework for developing a well-structured research proposal, ensuring that the study is comprehensive and thoughtfully organized (Adeyemi, 2013). It outlines the research methodology and provides a brief overview of the objectives achieved. This study will employ the use of mixed-method approach to investigate colour perception in residential buildings in Benin City. The mixed-method approach allows for a comprehensive understanding of the topic by making use of quantitative and qualitative data collection methods. The approach for Quantitative Data Collection will involve a survey questionnaire which will be distributed to a representative sample in residential buildings and the approach of qualitative data collection will involve case studies of 2 residential buildings in Benin this questionnaire and case studies will gather data on:

- Colour perception for different colour in residential buildings.
- Influence of socio economic and urbanization on colour choices of home owners in residential buildings.
- Gender or age difference in colour perception.
- Emotional sensitivity to colour.

3.2 RESEACRH SAMPLE FRAME

The sample frame is a crucial component of any research study as it establishes the basis for selecting participants, locations, or cases to be examined. In the context of this study on colour perception in residential buildings in Benin City, the sample frame will consist of a selection of 2 residential homes within the study area.

3.3 SAMPLE SIZE

A stratified random sampling technique will be used to ensure a representative sample across different students, accommodation halls and people within the Benin, Edo state. Sample size will be determined by a desired number of responses and margins of error as majority of the population will not be able to render qualitative knowledge. For the interviews, a purposive sampling technique will be used to target key stakeholders with relevant knowledge and experience.

3.4 DATA COLLECTION INSTRUMENT

Below are some of the data collection methods I will be using for this study:

- Photo voice: a self-administered group of images of residential buildings in Benin city, Edo state using the aid of online tools or paper-based format.
- Survey Questionnaire: A self-administered questionnaire will be developed using online survey tools (e.g. Google Forms) or paper-based format depending on internet access availability. The questionnaire will be pre-tested on a pilot group to ensure validity and reliability.
- Sample Survey: The questionnaire will consist of a mix of different question formats like:

3.5 DATA SOURCES

Data for this study will be obtained from both primary and secondary sources to ensure a comprehensive understanding of the perception of colour in residential buildings. The combination of these sources will enhance the reliability and depth of the research findings.

3.5.1 Primary Data

Primary data consists of firsthand information collected directly by the researcher. This includes:

- Field Observations: Site visits to selected residential buildings to document their condition, usage, and accessibility.

  Photographic Documentation and Sketches: Capturing real-time images and illustrations of the spaces to support analysis.
- Structured Interviews: Engaging with key residents, including home owners, tenants, and local residents, to gather insights on the challenges and benefits of urban green spaces.

3.5.2 Secondary Data

Secondary data includes information collected from existing sources that have been previously researched and published. This will provide historical context and supplement primary data collection. Sources include:

- Academic Research and Journals: Studies on the role colour in spaces in urban, landscape and buildings
- Books and Literature Reviews: Published works on colour, perception of colour and effects of colour in a space.
- Online Databases and Articles: Relevant web-based resources providing data on global best practices and case studies of the use, effect and perception of colour.

By integrating both primary and secondary data, this study will offer a well-rounded analysis of perception of colour in architecture

CHAPTER FOUR

4.0 ANALYSIS, FINDINGS AND DISCUSSION

4.1 OVERVIEW

This Chapter presents the analysis of the data collected for the study on preference and perception of colour in residential buildings conducted within Benin City, Edo State. The analysis will focus on examining the influence of age, social economic status, urbanization and gender to colour perception and preference and also evaluating emotional response colour evokes and identifying colour choices perception in residential buildings in Benin City. I'll be briefly restating an overview of my research questions for the research topic "Perception and Preference of colour on and in Residential Buildings in Benin city" majorly involving me using 2 residential buildings in Benin as a case study in my research. The methods of data collection used were majorly from mixed methods surveys, questionnaires and interviews as highlighted in my chapter 3 methodology. Before my data analysis presentation, these are the research questions I approached to study as referenced from chapter 1:

1. How do different color choices influence colour perception in residential buildings in Benin City Edo state?
2. How does socio economic status and urbanization influence color choices of home owners in residential buildings in Benin City Edo state?

3. What emotions are perceived when met with selected colours?
4. Does gender and age affect colour perception in residential buildings in Benin City Edo state?

4.2 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

This section will present the findings of the survey conducted as part of the research on perception and preference of colour in residential buildings. The survey data will be analyzed to provide insights into the respondent's perceptions, attitudes and behaviors related to colour in residential buildings. The survey had 100 respondents and the representation of the results for the survey questions is as follows:

Response Rate

A total of 200 questionnaires were sent out and the received feedback was 100 responses making it a 50% response rate.

Gender	Frequency
Male	56
Female	44

Table 4.1: Table showing the genders of respondents and their frequencies

Location	Frequency	Development
GRA	10	Developed
BDPA	3	Developed
Ekhenwa	9	Developed
Isihor	7	Rural
Ugbowo	44	Developed
Sapele Road	7	Rural
Uselu	9	Rural
Airport Road	3	Developed
Egor	2	Rural
Ekpoma	2	Rural
Ikpoba	1	Rural

Oluku	3	Rural

Table 4.2: Table showing sampling locations, the houses surveyed and the state of development of the locations

A. Age Group

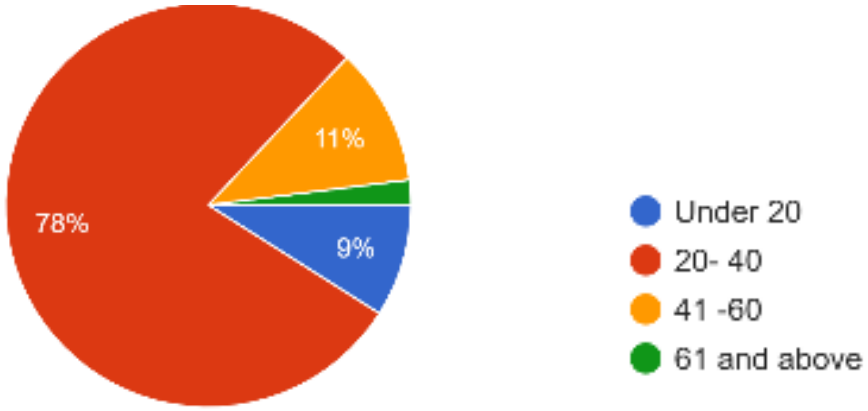

Figure 4.1: Pie chart showcasing age groups
Source: Researcher's fieldwork, 2025

B. Income Range

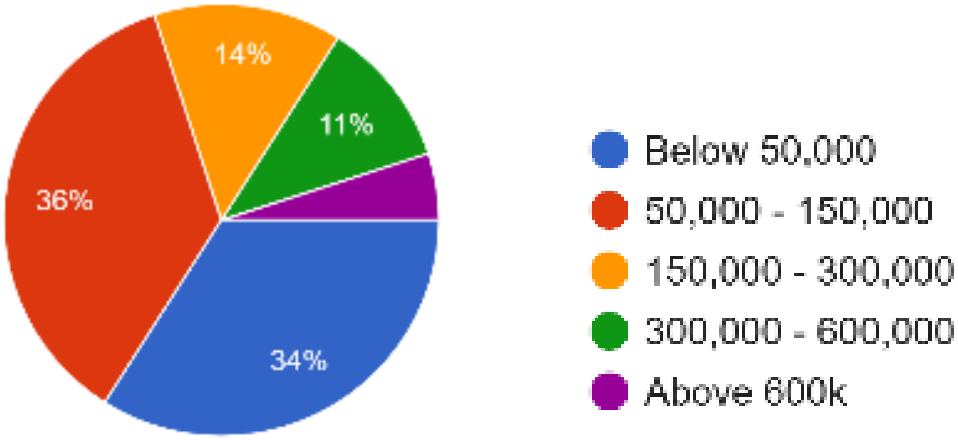

Figure 4.2: Pie chart showcasing monthly income range of respondents
Source: Researcher's fieldwork, 2025

4.3 INTERPRETATION OF OPINION-BASED SURVEY RESPONSES

This section offers a comprehensive interpretation of the 25 opinion-based questions, organized according to the study's research questions and objectives. The survey revealed a relatively uneven distribution of respondents across different age groups. The survey respondents were primarily youths, accounting for roughly 80 percent of the total responses, teenagers about 9 percent and the rest elderly. the survey reveals that over half the respondent earn within o to 150000 naira on a monthly basis, therefore putting majority of the respondents within average income. from the illustration, about 61 percent of the respondents perceive colour to be very

important in assessing a buildings beauty and about 25 percent see colour as important for the same cause giving a total of 86 percent of respondents hold colour important in a building's beauty. The survey shows that 44 percent of respondents prefer neutral colours to the exterior of their buildings and find it more appealing than other colours. From the survey out of 44 percent who found neutral colour appealing 42 percent perceive that it would increase the resale value of a house. The survey also shows that 80 percent of respondents perceive bright colours to attract attention.

4.3.1 Research Question One: What is the Perception of Colour in Residential Buildings?

A. Assessing building's beauty

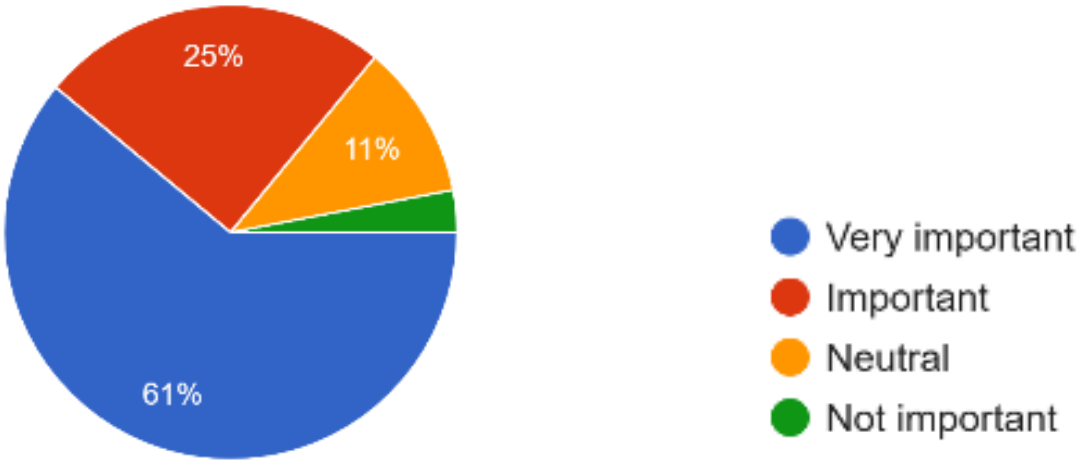

Figure 4.3: Pie chart showcasing the importance of colour in assessing a building's beauty
Source: Researcher's fieldwork, 2025

B. Appealing on building exteriors

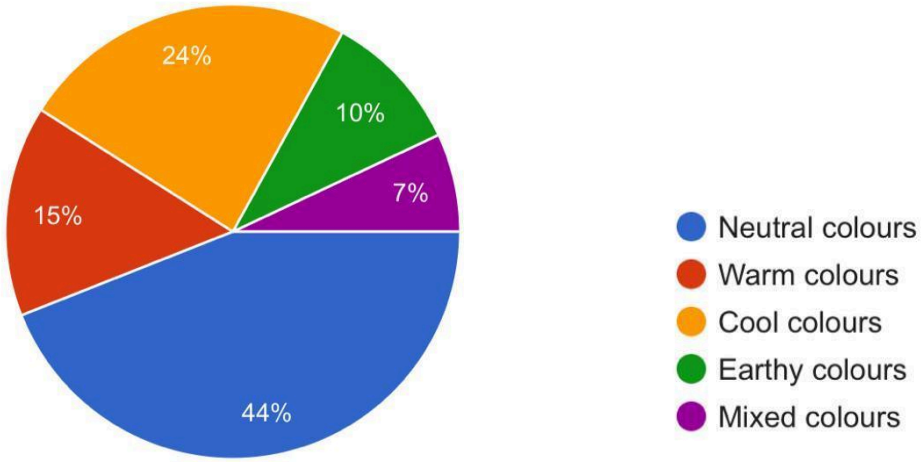

Figure 4.4: Pie chart showcasing the preference and perception of neutral colour to the exterior of a building.
Source: Researcher's fieldwork, 2025

C. Room Appearance

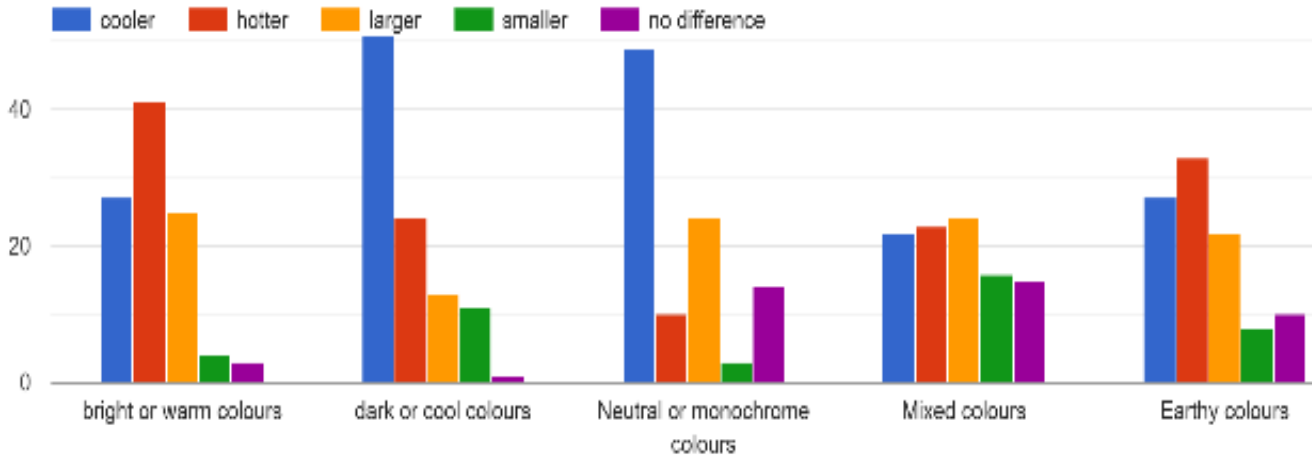

Figure 4.5: Bar chart showcasing the perception of individual colours in rooms.
Source: Researcher's fieldwork, 2026

From the survey and the chart above over 40 respondents perceive dark or cool colours and neutral colours to make a room feel cooler, about 40 respondents perceive bright colours to make a room hotter, for mixed colours our respondents are evenly distributed to the accustomed feeling of either cooler, hotter and larger and some no difference at all when used in a room. And for earthly colours the respondents are unevenly distributed to the accustomed feeling of hotter, cooler or larger majorly.

4.3.2 Research Question Two: What are the Colour Preferences?

A. Attention

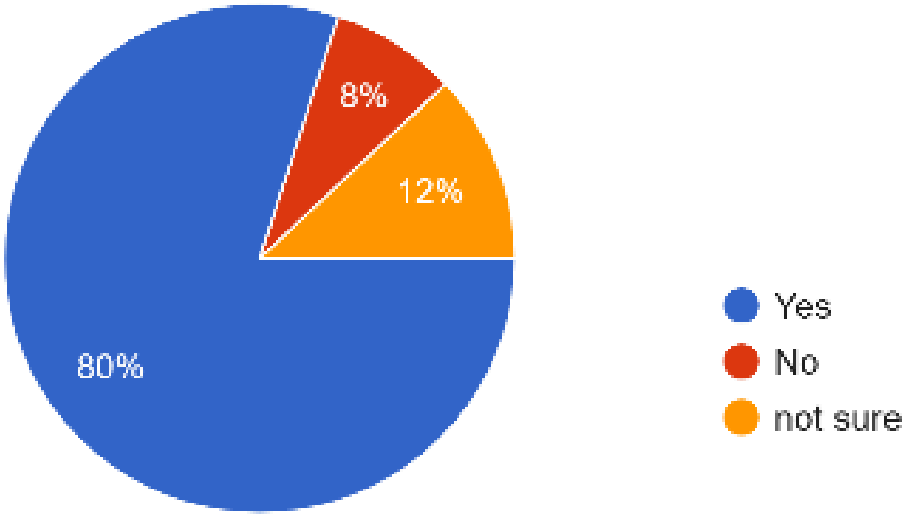

Figure 4.6: Pie chart showcasing that bright color attracts attention more easily.
Source: Researcher's fieldwork, 2025

B. Interior Wall Colors

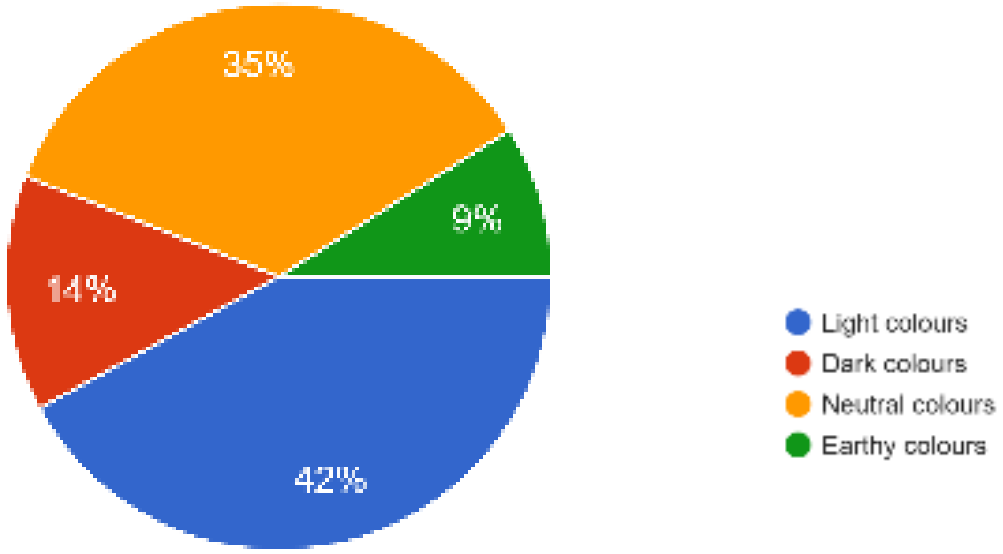

Figure 4.7: Pie chart showcasing the preferred interior wall colour in living spaces.
Source: Researcher's fieldwork, 2026

C. Resale Value

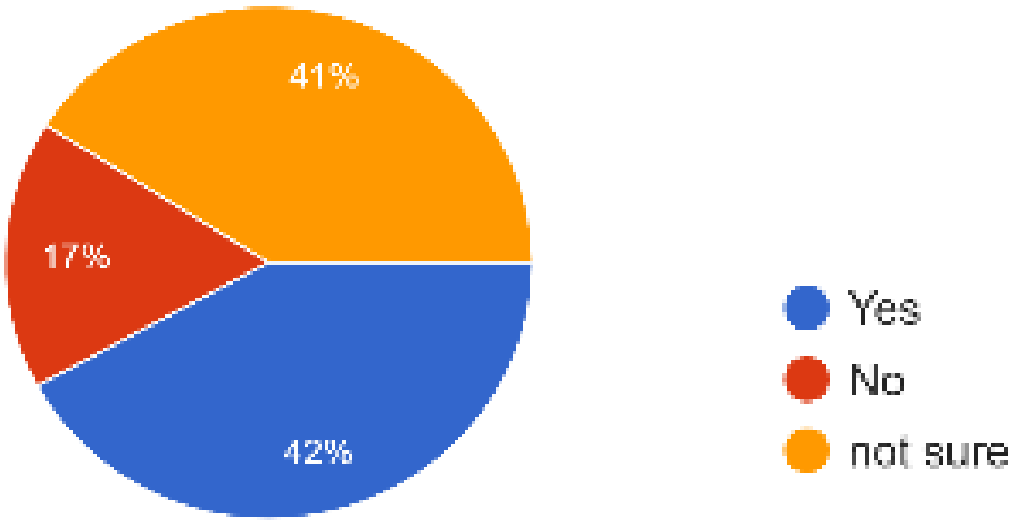

Figure 4.8: Pie chart showcasing that neutral colours increase the resale value of a house
Source: Researcher's fieldwork, 2025

The survey shows that about 42 percent of respondents prefer light colours in their living areas and about 35 percent prefer neutral colours while dark and earthly colours are not popularly preferred.

4.3.3 Research Question Three: What is the Emotional and Psychological Response to Colour?

A. Mood Changes

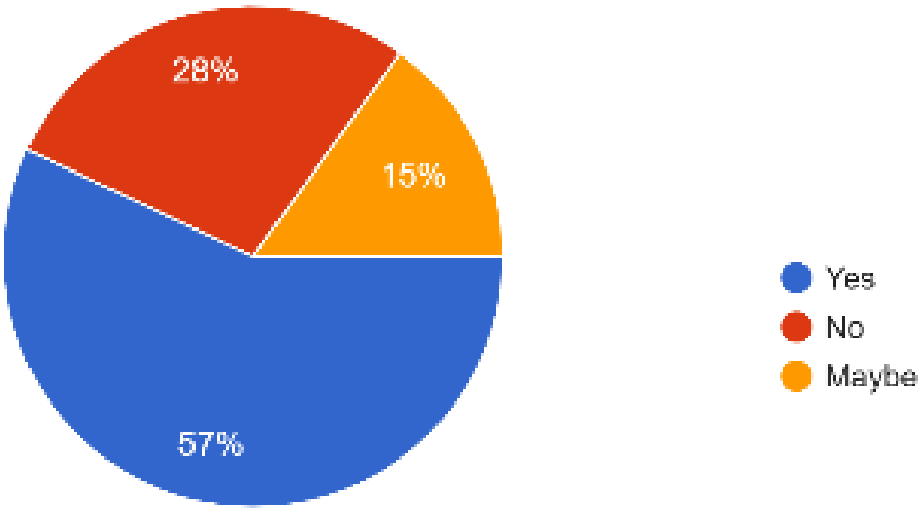

Figure 4.9: Pie chart showcasing respondents idea of associating color with mood changes
Source: Researcher's fieldwork, 2026

The survey reveals that 57 percent of respondents believe that colours affect mood change. The survey also reveals that over 60 percent of respondents believe that colour affect mental well-being of a person.

B. Mental Well-Being

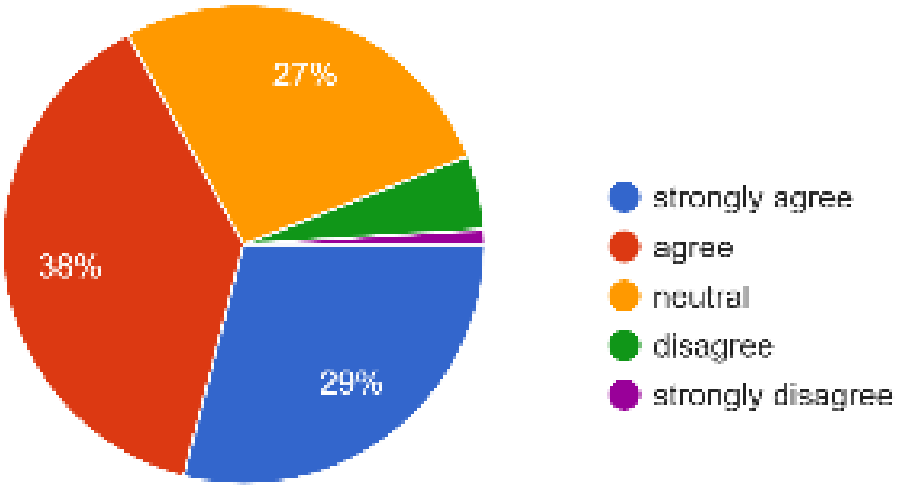

Figure 4.10: Pie chart showcasing colour as an influence to mental health.
Source: Researcher's fieldwork, 2026

4.3.4 Research Question Three: What is the Socio-Economic & Urbanization Influence?

A. Luxurious colors

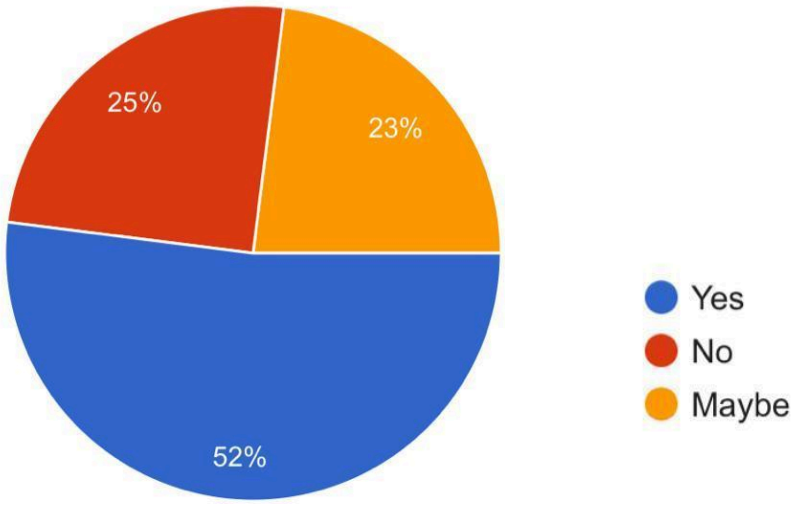

Figure 4.11: Pie chart showcasing that high income areas use more luxurious colours.
Source: Researcher's fieldwork, 2026

The survey reveals that 52 percent of respondents believe that high income areas make use of vibrant and luxurious colours. This survey reveals that 70 percent of respondents, more than average believe that urbanization influences colour choices in Benin City. From figure 4.9 the survey revealed that urbanization influences colour choices in Benin and also reveals that 58 percent of respondents believe that urbanized areas are painted uniformly, most are painted with the same colours. The survey likewise shows that 58 percent of respondents focus more on the maintenance of the colour when choosing a colour to paint their homes, 17 percent focus more on the cost of the paint and 12 percent focus on the trend.

B. Urbanization

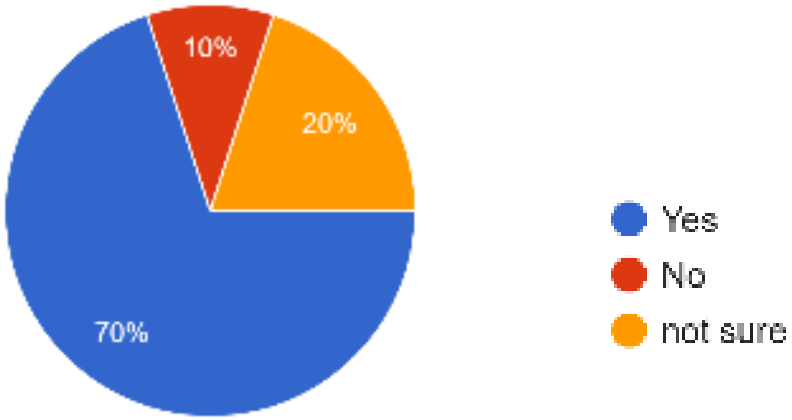

Figure 4.12: Pie chart showcasing urbanization as an influencer of color choices.
Source: Researcher's fieldwork, 2026

C. Painting Buildings

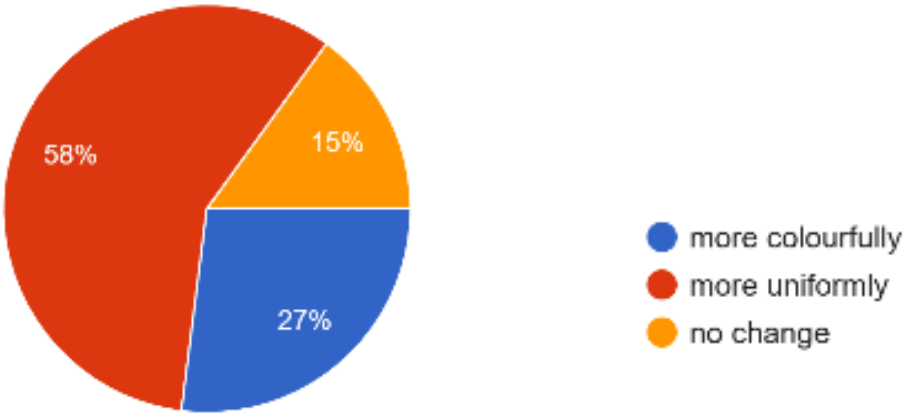

Figure 4.13: Pie chart showcasing urbanization as an influencer of painting buildings.
Source: Researcher's fieldwork, 2026

D. Colour Choice

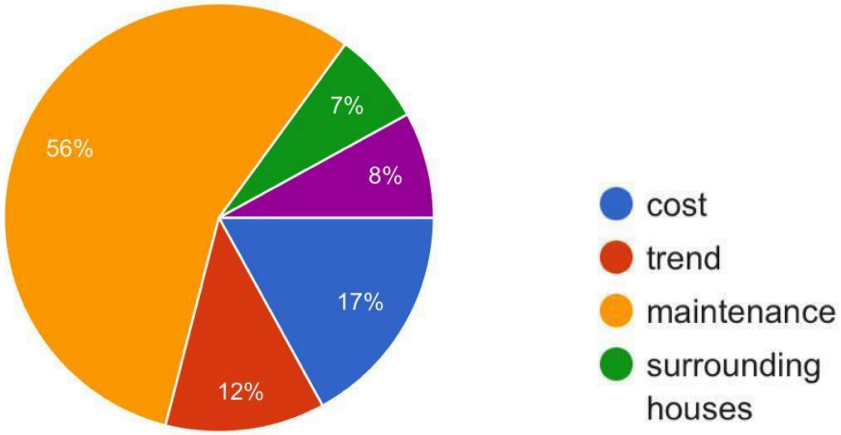

Figure 4.14: Pie chart showcasing factors that influence color choice when painting the home.
Source: Researcher's fieldwork, 2026

E. Colours Used

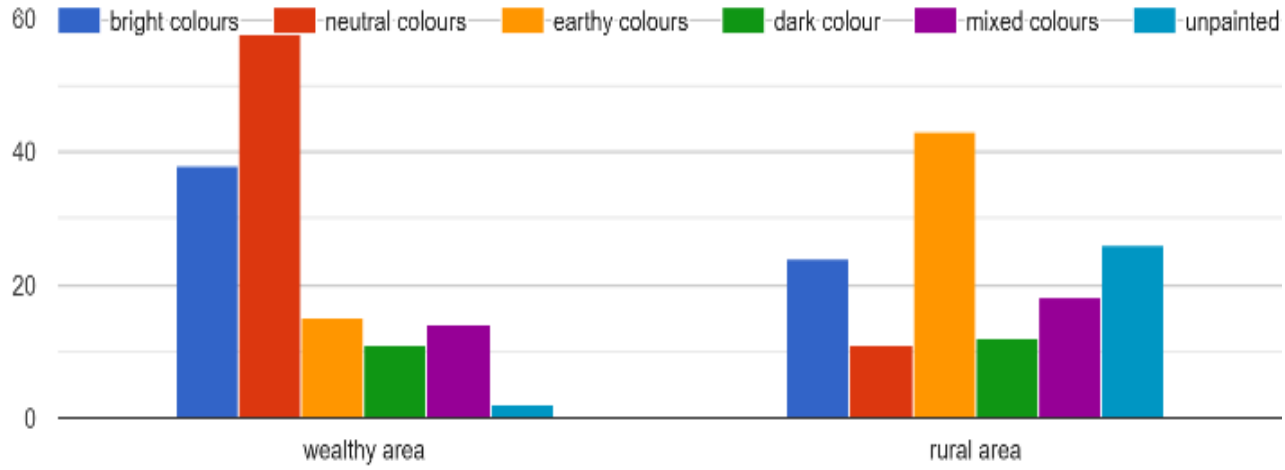

Figure 4.15: Bar chart showcasing the use of colours on residential buildings in wealthy and rural areas.
Source: Researcher's fieldwork, 2026

The survey reveals that our respondents are unevenly distributed majorly in neutral and bright colours for wealthy areas that are our respondents believe that in wealthy areas neutral colors and bright colours are used majorly above others and in rural areas our respondents are unevenly distributed majorly in earthy colours and unpainted.

4.3.5 Research Question Four: What is the Gender and Age Influence on Preference?

A. Gender Influence

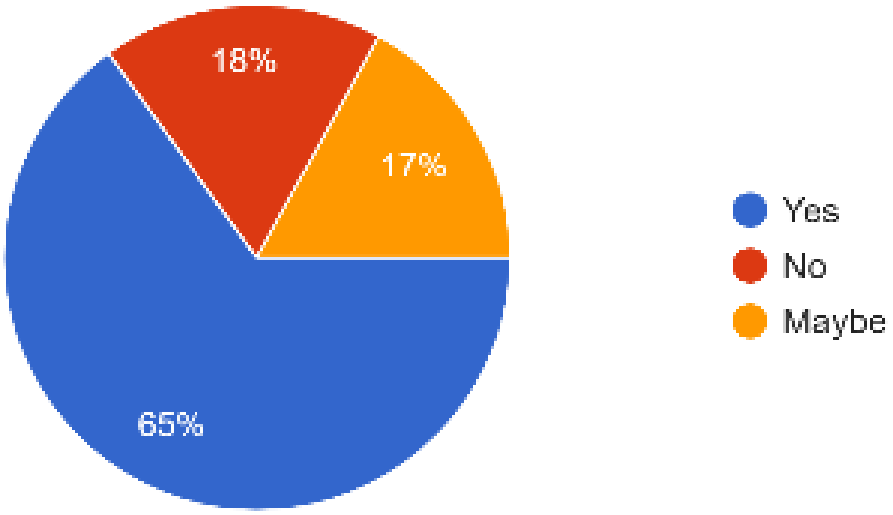

Figure 4.16: Pie chart showcasing gender influence in colour choices.
Source: Researcher's fieldwork, 2026

The survey reveals that 65 percent of respondents believe that gender influences colour preference in residential buildings in Benin City and 18 percent do not believe gender influences colour preference.

B. Age Influences

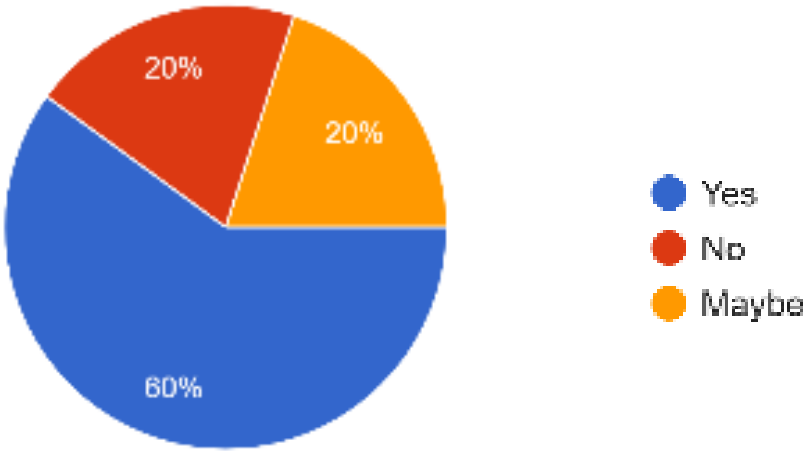

Figure 4.17: Pie chart showcasing age influence in colour preference.
Source: Researcher's fieldwork, 2026

The survey reveals that 60 percent of respondents believe that age influences colour preferences in residential buildings in Benin City and 20 percent of respondents do not share the same view. The survey shows that males are mostly associated with cool and neutral while females are mostly associated with warm colours. The survey also reveals that teenagers are majorly associated with cool and neutral colours while youth have a spread in neutral, cool and warm colours and for elderlies, they are mainly associated with neutral colours and some warm colours.

C. Colour best associated

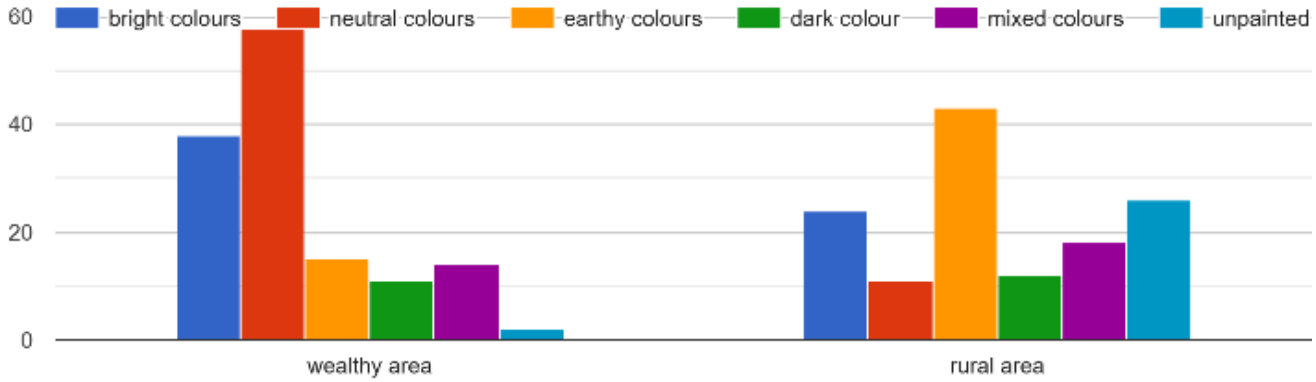

Figure 4.18: Bar chart showcasing the association of colour with different age categories and gender.
Source: Researcher's fieldwork, 2026

4.4 CASE STUDIES

To support the research findings and offer practical insights into the perception and preference of colour on and in residential buildings, two case studies will be carried out within Benin City, Edo State. These case studies will examine buildings that showcase thoughtful or innovative use of colours, whether for interiors, or exteriors. The goal is to observe how colours contribute to the mental health, attention, mood changes of individuals and urbanization of the environments. Each case study will explore the background of the project; the perception approach used, the colours selected, and any challenges encountered during implementation. Attention will also be given to the impact of the colours on user experience and the surrounding environment. These real-life examples will help highlight the practical the influence of colours in residential buildings and how they align with the broader objectives of enhancing building quality and visual appeal in Benin City.

4.4.1 CASE STUDY ONE:

Residential Building Located At Erediawa

This is a residential building located at Erediawa street off Ekhenwa road Benin City Edo State. It is the primary residence of Mr. Davd and his family. This residential building is a contemporary design which lacks the use of colour on the exterior but is identified with clean lines, large windows and the use of high-quality materials such as concrete, glass and metal constitute to it appeal.

Figure 4.19: Picture showcasing the living area of Mr. David's residence
Source: Researcher's fieldwork, 2026

Merits

- The colour used for the interior spaces gives a feeling of coolness and calmness
- Proper ventilation and natural lighting in spaces
- Neutral colour in the kitchen which enhances cleanliness and hygiene
- Cultivation of green area in the immediate surrounding

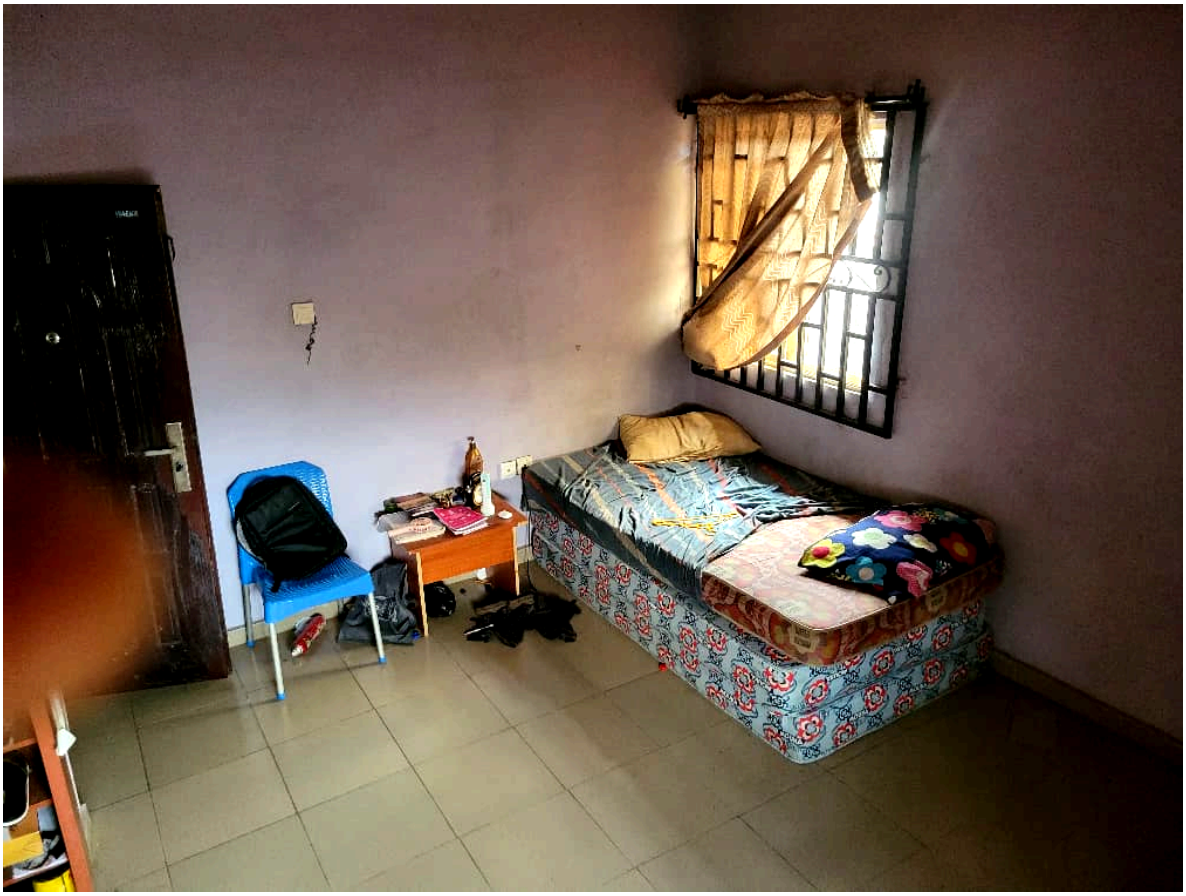

Figure 4.20: Picture showcasing a bedroom area of Mr. David's residence
Source: Researcher's fieldwork, 2026

Demerits

- Incomplete finishes on the exterior
- No unified interior colour scheme

According to Mr. David the choices of colour in his home is significantly impacted by maintenance, the use of purple in the girl's room is because it is a much better maintained option to pink, which also concurs to gender having an impact in colour choices. Mr. David also confirms that cost has relatively been a resulting factor of the unpainted exterior of his home. The kitchen was tiled with a neutral colour, it was not painted as it would be easier to remove dirt and grease from a tiled wall than a painted wall.

Figure 4.21: Picture showcasing the master bedroom of Mr. David's residence
Source: Researcher's fieldwork, 2026

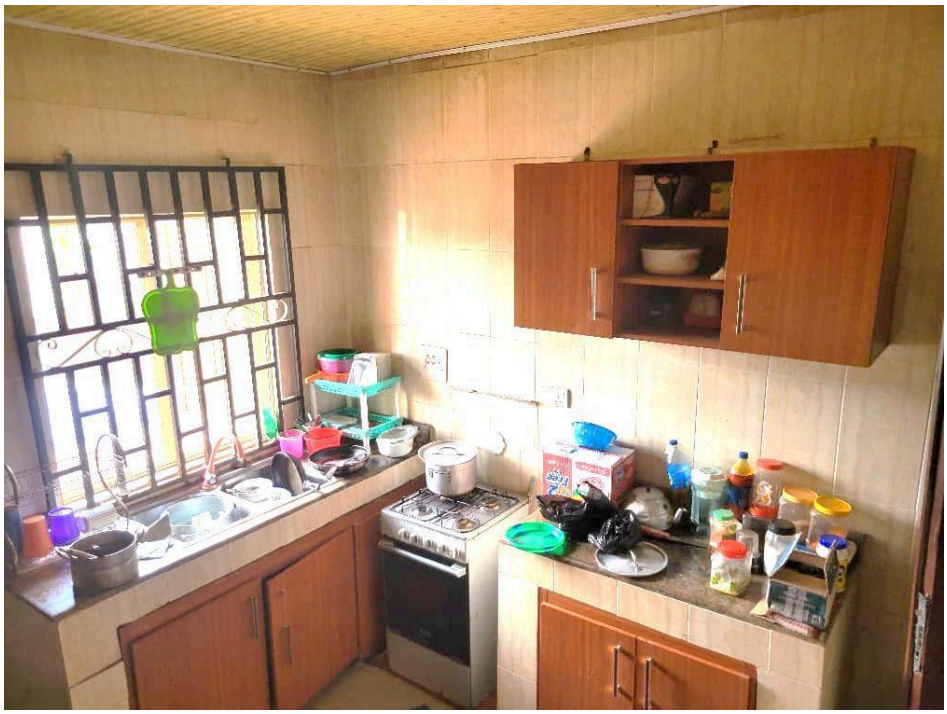

Figure 4.22: Picture showcasing showcasing the kitchen of Mr. David's residence
Source: Researcher's fieldwork, 2026

4.4.2 CASE STUDY TWO:

Residential Building Located At Eroewaen

This is a residential building located at Eroewaen street off Omore Benin City Edo State. It is the primary residence of the Omoigui-Oriakhi family. It is a classic Nigerian suburban bungalow. The exterior of the house is majorly tiled which is as a result of the owner not liking paint for the exterior, he believes it does not look nice and is difficult to maintain.

Figure 4.23a: Picture showcasing the exterior of the Omoigui-Oriakhi family residence
Source: Researcher's fieldwork, 2026

Merits

- Considering the climate in Benin this residence is built to withstand the climate weather
- It can be easily maintained over a period of time
- A unified colour scheme for the interior
- It has a functional layout

Demerits

- Lack of green area in the surrounding
- poor colour choices for the interior

Figure 4.23b: Picture showcasing the exterior of the Omoigui-Oriakhi family residence (side view)
Source: Researcher's fieldwork, 2026

Figure 4.24a: Picture showcasing the living area in the Oriakhi's residence
Source: Researcher's fieldwork, 2026

Figure 4.24b: Picture showcasing the living area in the Oriakhi's residence
Source: Researcher's fieldwork, 2026

Figure 4.25: Picture showcasing a bedroom of the Oriakhi's residence
Source: Researcher's fieldwork, 2026

The living room is a combination of white and green; the white was to be the original colour alone but the bottom half was painted green to maintain the stains which the parents found aesthetical but the children found the colour displeasing. The bedrooms are also painted blue green similar to the green in the living room but a tad bit different. A similar response to the living room was gotten for the bedroom, the children do not find the colour aesthetically appealing while the parent are more open to the colour because it is easier to maintain. The kitchen was tiled white half way through and painted green above, the tiles help to better maintain the kitchen while the green was just to compliment it.

Figure 4.26: Picture showcasing the kitchen of the Oriakhi's residence
Source: Researcher's fieldwork, 2026

4.5 DISCUSSION

The survey gathered responses from people of different fields, socio economic standard, age to understand the perception and preference of colour in an on residential buildings in Benin City. The key findings from 86 respondents out of 100 say colour is important in assessing a buildings beauty, Mitton, and Nystuen concur to this by saying that the color phenomenon has been researched for centuries and that color plays the most important role in the realm of design and building in Residential interior design: A guide to planning spaces. Majority of respondents (44%) prefer neutral colours on their home's exterior while 24% would rather opt for cool colours, this is as a result of easier maintenance and the perception that neutral colours increase the resale value of the buildings. Majority of respondents believe that bright colours makes a room to feel hotter, and dark or cool colours make a room to feel cooler, neutral colours makes a room to feel cooler, mixed colours and earthy colours have no particular united feelings evoked from the respondents as the result is sparingly distributed among hotter, cooler, indifference, larger and smaller. 42 respondents would rather use light colours for the interior of their home while 35 respondents opt for neutral colours instead. 70% of respondents believe that urbanization influences colour choices in Benin residential architecture which leads lot of areas in Benin City to colour houses more uniformly, in the same colour or patterns.

Furthermore, a lot of respondents see wealthy areas in Benin coloured more uniformly in neutral colours and rural areas are painted in earthy colours aiding easier maintenance. 67 respondents have the awareness that colour can influence mental well-being, mood changes in residential buildings. This is supported by Curcic that colour is a widely accepted phenomenon; it is a subtle stimulator with a silent impact on physical, physiological, psychological, and sociological aspects in everyday human lives. Majority but not all respondent believes that age and gender influences colour choices in residential buildings which goes to say that there is not enough awareness that age and gender also influence perception and preference of colour in design.

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF THE FINDINGS

Key Findings stated in this research are:

Colour is an integral part of residential design: colour not only enhances aesthetics, but also improves the overall comfort of a space. When used properly, colour transforms a space from ordinary to extraordinary. Gender and age constitute colour preferences: various age groups and genders favour certain colour schemes, which affect the basis of choosing colours. Socio-economic status and urbanisation affect colour choices: some people base their colour choices on their income to reduce costs and maintain them more easily, while urbanisation has made people's colour choices become more uniform and lacking in uniqueness. Colour is perceived differently by different people: colour significantly affected the psychological states of various people, causing them to perceive a feeling of calmness, coolness, hotness and other feelings.

5.2 IMPLICATIONS OF THE STUDY

The findings of this study implies that colour should be prioritized beyond aesthetics, colour should be properly understood by the user, architect and interior designer to enable them to pick good colours that not only prove to be aesthetically pleasing but also improve their health, mood and general well-being. Colour should not be an afterthought in design process but integrated from the onset to enhance psychological well-being. Inclusive designs should be used to ensure each and every person’s needs are met.

5.3 CONCLUSION

This study has demonstrated the significant potential for improving energy efficiency in university offices and accommodation buildings. By addressing the identified challenges and implementing effective measures, universities can reduce their energy consumption, reduce costs, and contribute to a more sustainable future.

5.4 RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

- Incorporate colour psychology guidelines in residential projects and use evident based palettes that balances aesthetics and emotional impact
- Encourage corporation between the architect, interior designers and client to prioritize colour selection
- Develop nonrestrictive colour guidelines for residential areas to enable visual harmony while allowing expression of one's individuality

Suggestions For Future Study

Based on this project research's findings, these are possible areas for further study:

- Conduct studies of long-term effects of specific colour schemes on occupant well being
- Explore colour perception and preferences in commercial and public buildings in Benin city.

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APPENDIX

SURVEY QUESTIONNAIRE
Topic: PERCEPTION AND PREFERENCE OF COLOUR ON AND IN RESIDENTIAL BUILDINGS IN BENIN CITY, EDO STATE
By **Akhigbe Ayomide Blessing**
Mat No: **ENV2103328**
Submitted to the Department of Architecture,
Faculty of Environmental Science,
University of Benin Questionnaire

Dear Respondent,
This questionnaire is designed to gather information on the perception and preference of colour on and in selected residential buildings in Benin City, as well as your experiences and opinions regarding use of luxurious colors, their influence on mood changes, challenges on mental health and others. The aim of this research is to better understand how colors function, the cultural and social values they uphold, and the improvements needed to enhance both their efficiency and significance.
Your responses will help identify key issues affecting colors on and in residential buildings and provide insights that can guide the development of sustainable, culturally and socially sensitive color revitalization strategies in Benin City. All information provided will be treated with strict confidentiality and will be used solely for academic research purposes. No personal identities will be recorded or disclosed.

Your participation is voluntary, and your honest input is highly valuable to the success of this study. Thank you for taking the time to assist in improving the future of our markets and preserving their cultural identity.

Yours faithfully,
AKHIGBE AYOMIDE BLESSING
Researcher

Appendix A
SURVEY QUESTIONNAIRE COLLECT DATA FROM RESIDENTS ON PERCEPTION AND PREFERENCE OF COLOUR ON AND IN RESIDENTIAL BUILDINGS IN BENIN CITY, EDO STATE

SECTION A: DEMOGRAPHIC INFORMATION **Respondent Profile**
Please tick (✓) the appropriate response.

1. **What is your gender?**
   ( ) Male
   ( ) Female
   ( ) Other

2. **What is your age group?**
   ( ) Under 20
   ( ) 21–30
   ( ) 31–40
   ( ) 41–50
   ( ) 51+

3. **What is your highest educational qualification?**
   ( ) Primary
   ( ) Secondary
   ( ) Tertiary
   ( ) Postgraduate
   ( ) None

4. **What is your occupation? _____**

5. **What is your monthly income range?**
   ( ) Below ₦50,000
   ( ) ₦50,000–₦100,000
   ( ) ₦101,000–₦200,000
   ( ) Above ₦200,000

6. **How long have you lived in Benin City?**
   ( ) Less than 1 year
   ( ) 1–5 years
   ( ) 6–10 years
   ( ) Over 10 years

7. **Which area of Benin City do you live in? _____**

8. **Do you own or rent your current residence?**
   ( ) Own
   ( ) Rent
   ( ) Family house
   ( ) Others

SECTION B: Research Questions
Colour Perception In Residential Buildings

1. **How important is colour to you when assessing a building's beauty?**
   ( ) Very important
   ( ) Important
   ( ) Neutral
   ( ) Not important

2. **Which colours do you most commonly see on residential building exteriors in your area?**
   ( ) White
   ( ) Cream
   ( ) Brown
   ( ) Blue
   ( ) Green
   ( ) Others: _____

3. **Which colours do you find most appealing on building exteriors?**
   ( ) Warm
   ( ) Cool
   ( ) Neutral

4. **Which interior wall colours do you prefer in living spaces?**
   ( ) Light
   ( ) Dark
   ( ) Bright
   ( ) Muted

5. **How do these colours affect how you see a space?**

	Cooler	Hotter	Larger	Smaller	No Difference

Bright coloured					
Dark-coloured					
Monochrome coloured					
Earthly coloured					
Mixed coloured					

SECTION C: Research Questions
Colour Preferences

1. **What is the dominant exterior wall colour of your building? _____**

2. **What is the dominant interior wall colour in your living room? _____**

3. **Would you change the exterior colour if given the chance?**
   ( ) Yes
   ( ) No
   ( ) Maybe if yes to _____

4. **Would you change the interior colour if given the chance?**
   ( ) Yes
   ( ) No
   ( ) Maybe if yes to _____

5. **Do you prefer bold or subtle colours in your living space**?
   ( ) Bold
   ( ) Subtle
   ( ) Depends on room

6. **Do you believe bright colours attract attention more easily?**
   ( ) Yes
   ( ) No

7. **Do you think neutral colours increase the resale value of a house?**
   ( ) Yes
   ( ) No
   ( ) Not sure

SECTION D: Research Questions
Emotional and Psychological Response to Colour

1. **Describe how the colours of buildings in your area make you feel about Benin City.**

	excited	calm	energetic	Angry	sad	proud	anxious
Red							
Blue							
Green							
Yellow							
purple							
white							
brown							

2. **Do you associate colour with mood changes?**
   ( ) Always

( ) Sometimes
( ) Never

3. **Do you believe the use of colour can affect mental well-being?**
( ) Strongly agree
( ) Agree
( ) Disagree
( ) Strongly disagree

SECTION E: Research Questions
Socio-Economic & Urbanization Influence

1. **Do people in your neighbourhood tend to use similar colours on their buildings?**
( ) Yes
( ) No
( ) Not sure

2. **I chose my building colour to**
( ) Match neighbours
( ) Stand out
( ) Reduce heat
( ) Show status

3. **Do you think higher-income areas use more vibrant or luxurious colours?**
( ) Yes
( ) No
( ) Sometimes

4. **Do you think urbanization influences colour choices in Benin City?**
( ) Yes
( ) No
( ) Not sure

5. **Urbanization has made people paint buildings?**
( ) More colorfully
( ) More uniformly
( ) No change

6. **Which of these most affects your colour choice when painting your home?**
( ) Cost
( ) trends
( ) Culture
( ) Maintenance
( )surrounding houses

7. **How often do you repaint or change colours in your home?**
( ) Every year
( ) Every 2–3 years
( ) Rarely
( ) Never

8. **Select the most appropriate**

	Bright colour	Neutral colour	Unpainted	Earth tones	Mixed colours
In wealthy areas					
In rural areas					

SECTION F: Research Questions
Gender and Age Influence on Preference

1. **Do you believe gender influences colour preference in homes?**
   ( ) Yes
   ( ) No
   ( ) Not sure

2. **Do you believe age influences colour preference in homes?**
   ( ) Yes
   ( ) No
   ( ) Not sure

3. Select the most appropriate

	Warm colour	Cool colour	Neutral colour	none
Male				
Female				
Teenagers				
youth				
elderlies				

4. **Gender affects interior colour choice more than exterior?**
   ( ) Agree
   ( ) Disagree
   ( ) Neutral

SECTION G: Research Questions
Cultural and Architectural Context

1. **Do you think certain colours have cultural or symbolic meanings in Benin culture?**
   ( ) Yes
   ( ) No

2. **How satisfied are you with the general use of colour in Benin City's residential buildings?**
   ( ) Very satisfied
   ( ) Satisfied
   ( ) Neutral
   ( ) Dissatisfied

3. What suggestions would you make to improve colour application in residential design in Benin City?
(Open-ended response) _____

4. **In Edo culture, red symbolizes?**
   ( ) Danger
   ( ) Royalty/Power
   ( ) Love
   ( ) Don't know

5. **White is used in buildings for?**

( ) Purity
( ) Mourning
( ) Heat reflection
( ) All