



# Harmonization of Maroon and Sage Green Colors in Contemporary Kebaya Design: An Analysis of Aesthetics and Trend Relevance

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**Abstract:** This research analyzes the harmonization of maroon and sage green colors in contemporary kebaya design, exploring its aesthetics and trend relevance. Although the kebaya has transformed, a deep understanding of the specific color harmonization principles remains limited. The objectives include analyzing the aesthetic principles of the color combination, identifying its relevance and acceptance in formal/traditional fashion trends, and exploring its design implications and identity representation. Utilizing the ADDIE framework, this study conducted in-depth interviews with nine expert respondents from industry experts, practitioners, and academics, with data analyzed thematically. Findings indicate that maroon and sage green create a complex visual harmony, are popular as a fresh alternative in the Indonesian market, and represent the identity of modern women who value cultural heritage. A Scratch application was also developed as an interactive and pedagogical tool for simulation and exploration of kebaya color design.

**Keywords:** Kebaya design, color harmonization, fashion, maroon, ADDIE

## 1. Introduction

In the landscape of contemporary fashion design, a dynamic paradigm continues to evolve, characterized by the progressive synthesis of rich cultural traditions and modern aesthetic innovation (Hakim, 2023). Global designers actively bridge haute couture heritage with evolving market demands, especially highlighting the crucial role of color in shaping clothing identity and individual expression (Nursilah et al., 2024). This era witnesses an increased appreciation for handicrafts and ethnic fashion, which are reinterpreted through the lens of global trends to create new and relevant visual narratives.

In Indonesia, the kebaya, as one of the national clothing heritages, continues to undergo significant transformation. Although its form and silhouette evolve, the aspect of color plays a central role in defining its contemporary appeal (Sholihah et al., 2024). Indonesian designers now actively explore new color palettes that go beyond traditional conventions, seeking combinations that resonate with modern tastes while maintaining the essence of kebaya elegance (Handaru & Setiawan, 2023). However, amidst this exploration, a deep understanding of the specific color harmonization principles in contemporary kebaya, especially popular combinations like maroon and sage green, still remains limited. Research systematically lacks analysis of how these color combinations affect aesthetic perception and their relevance in the context of current fashion trends.

The existing scientific discourse on color theory in fashion, adaptation of traditional clothing, and trend analysis shows diverse approaches (Purwanti, 2022). Academics in France often examine the role of color in fashion semiotics and haute couture, while research in the United States analyzes consumer preferences and the impact of social media on color trends (Craik, 2024). Studies in Turkey contribute to the understanding of color in historical Ottoman textiles and their adaptation. In Germany, research often focuses on material science and dyeing technology, and in Russia, studies on cultural identity through clothing are often highlighted. Although this literature provides a broad theoretical framework, a clear gap is evident in the comprehensive analysis of specific color harmonization especially maroon and

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sage green in the context of traditional clothing like the kebaya, as well as its implications for contemporary aesthetics and trend relevance (Nagata & Sunarya, 2023). This research aims to fill that gap by providing a focused analysis of this color combination.

Beyond the theoretical and empirical analysis of color harmonization in contemporary kebaya, this research also examines the potential of interactive media to disseminate findings and facilitate visual exploration. Scratch, as a block-based visual programming platform, offers an intuitive environment for developing simple games or simulations (Anis et al., 2023). This application effectively represents complex concepts to a wider audience, including design students and even potential consumers. A game developed with Scratch can innovatively simulate the process of "trying on" maroon and sage green color combinations on various kebaya silhouettes. Users can select a virtual kebaya model, then interactively apply maroon or sage green color palettes, as well as combinations of both, to directly observe the visual impact on the overall design. This feature allows users to explore how different color placements such as a maroon top with a sage green bottom, or sage green embroidery accents on a kebaya maroon that affects the perception of harmony and aesthetics. This not only visualizes the aesthetic principles we analyze in the research, but also provides a platform for users to experiment with their personal preferences in the context of trends (Mahendra et al., 2024).

More than just a simple simulation, this game functions as an effective pedagogical tool (Maharani et al., 2020). It bridges theoretical discussions about color harmony and relevance trends with practical visual experience, making these concepts more accessible and appealing to learners. Furthermore, the game has the potential to be an early prototyping instrument for designers to quickly and interactively test color combination ideas before moving to physical production, providing initial visual validation and facilitating design concept communication. Thus, the Scratch application not only supports the dissemination of research results but also enriches the methodology of fashion design exploration itself.

This research has several interconnected and comprehensive main objectives. First, we analyze the aesthetic principles and color harmony underlying the combination of maroon and sage green in contemporary kebaya design, which involves visual and theoretical deconstruction of how these two colors interact, as well as examining basic aesthetic principles such as contrast, balance, proportion, and emphasis Harsari et al.(2024), in addition to applying color harmony theory to understand their appeal and coherence, including how the intensity, saturation, and value of each nuance affect the overall visual perception of the kebaya, as well as its ornamental details, materials, and silhouette. Furthermore, we identify the relevance and acceptance of the maroon and sage green color combination within the context of current formal and traditional fashion trends, focusing on the position of this combination in the current fashion landscape, identifying reasons for its popularity whether due to psychological associations, pop culture influence, or shifts in Gen Z aesthetic preferences and assessing its acceptance through market response, social media presence, and perspectives from industry stakeholders and academics.

Finally, we explore the design implications and identity representation emerging from the application of maroon and sage green color harmonization in contemporary kebaya, delving into the practical consequences for designers in material selection and application techniques, and analyzing how these color choices shape or emanate the wearer's identity, such as modernity, elegance, or cultural continuity, to understand what they visually "say" or "represent" within the cultural and social context of modern kebaya users.

## **2. Methodology**

This research adopts the ADDIE (Analysis, Design, Development, Implementation, Evaluation) approach as its main methodological framework (Saeidnia et al., 2022). The ADDIE model, traditionally applied in the development of instructional systems, provides a comprehensive and iterative structure for design development and results analysis (Ali et al., 2024). The implementation of this model ensures a systematic research process, starting from a deep understanding of color aesthetic principles and trend relevance to an exploration of the design implications and identity representation of the kebaya.

### **2.1 Phase of Analysis**

In the Analysis phase, researchers comprehensively identified and defined the research problem. We analyzed the aesthetic principles and color harmony underpinning the combination of maroon and sage green in contemporary kebaya design. This analysis involved a visual and theoretical deconstruction of how these two colors interact, alongside an examination of basic aesthetic principles such as contrast, balance, proportion, and emphasis. Furthermore, we identified the relevance and acceptance of these color combinations within the context of current formal and traditional fashion trends, and explored the design implications and identity representation emerging from their application. A primary focus during this stage was the identification of gaps in the existing literature concerning specific color harmonization in kebaya.

### **2.2 Phase of Design**

The Design phase also involved the development of a prototype interface for the Scratch application. The prototype was structured to provide an interactive environment in which users could apply different color combinations and observe

their visual effects on kebaya designs. Figure 1 presents the prototype and workflow of the Scratch-based kebaya color simulation application.

The Design phase focused on meticulously crafting the research framework and developing data collection instruments. We designed in-depth interview instruments with specific questions for fashion industry experts, practitioners (designers, stylists, product developers), and academics. This phase also encompassed the conceptualization and initial blueprinting of the Scratch-based simulation game, defining interactive features for users to apply color palettes to virtual kebaya models and observe visual impact.

The initial stage, Phase (a), serves as the Splash Screen or Opening Screen. This is the very first visual presented to the user, displaying the main title "Try On Your KEBAYA" along with the designer's attribution, "by Shafa Avrilya." Its primary purpose is to introduce the application and establish a compelling first impression for the user. Following the introductory splash screen, Phase (b) presents the Start Screen. Here, the user is greeted with a clear "START" button. This phase is crucial for preparing the user to embark on the virtual kebaya try-on experience. It marks the initial point of interaction, requiring the user to take a deliberate action to proceed further into the application.

Next, we move into Phase (c), which can be described as the Selection or Model Preparation phase. In this stage, a virtual model, akin to a mannequin, is prominently displayed in a basic or plain outfit. Crucially, flanking the model are distinct kebaya options – specifically, a green kebaya and a red/black kebaya – presented as ready for selection or virtual trying-on. This phase is where the user actively engages in choosing their desired kebaya. The underlying mechanism likely involves a drag-and-drop functionality or simple clicks to apply the chosen kebaya onto the model.

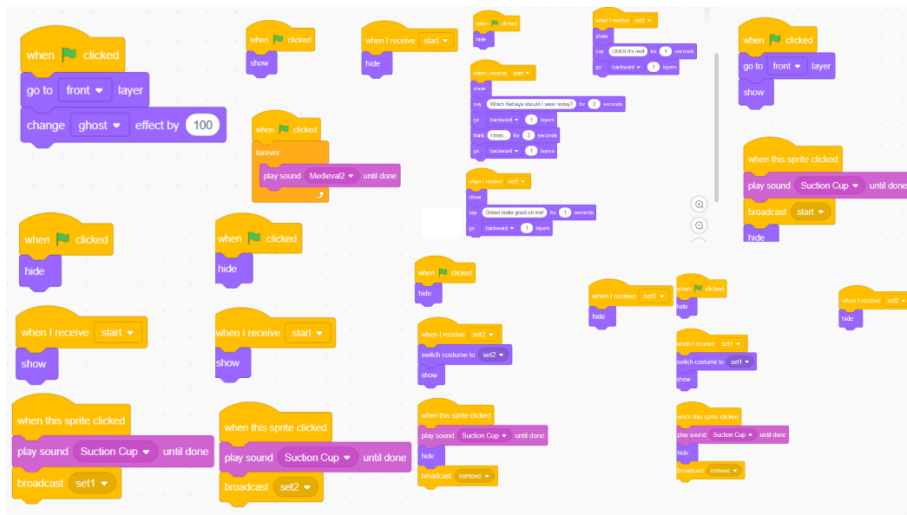
Finally, the images in the bottom row, though not explicitly labeled with a letter, represent the "Try-On" or "Preview" phases. The image on the left, which we can designate as Phase (d), showcases the Try-On / Preview of Kebaya 1. Here, the virtual model is depicted already adorned in the green kebaya. This visual outcome is a direct result of the try-on process, allowing the user to clearly visualize how the chosen kebaya appears on the model. This perspective is vital for users to evaluate the kebaya's aesthetics. Similarly, the image on the right, Phase (e), illustrates the Try-On / Preview of Kebaya 2.



**Figure 1: (a) First Display; (b) Main Menu; (c) Selection Phase; (d) Preview Kebaya 1 (Green); (e) Preview Kebaya 2 (Red)**

### 2.3 Phase of Development

In the Development phase, we implemented the designed instruments. We conducted in-depth interviews, serving as the primary qualitative data collection instrument, with nine (9) expert respondents. These respondents included fashion industry experts (Creative Director, Senior Fashion Consultant, National Fashion Museum Curator), fashion practitioners (Independent Fashion Designer, Professional Stylist, Digital Fashion Merchandiser), and fashion/IT academics (Lecturer in Fashion Design & Textile Technology, Human-Computer Interaction Researcher, Head of Visual Communication Design Study Program). Concurrently, we developed the simulation game application utilizing the Scratch platform, configuring its block-based code to create the predetermined interactive functionalities for color exploration as presented in Figure 2.



**Figure 2: Prototype (Coding for elements looks and to switch interactive objects)**

## 2.4 Phase of Implementation

The Implementation phase involved the systematic execution of data collection and the deployment of the developed application. We gathered rich qualitative data by conducting the in-depth interviews with the nine designated expert respondents. During these interviews, we actively focused on eliciting nuanced insights regarding the aesthetic principles of color harmonization, the relevance of these color combinations to current trends, their practical design implications, and their role in representing identity within contemporary kebaya. Concurrently, we fully implemented the Scratch game application, making it available for users to interactively experiment with various color combinations and directly observe their visual impact on different kebaya designs.

## 2.5 Phase of Evaluation

In the Evaluation phase, we thoroughly analyzed the collected data and assessed the effectiveness of the developed Scratch application. We applied thematic analysis as the primary method for analyzing the qualitative data derived from the in-depth interviews. This rigorous process involved several stages: familiarization with the data, generation of initial codes, systematic searching for emergent themes, critical review of identified themes, precise definition and naming of the final themes, and finally, comprehensive report writing. This analytical approach facilitated the discovery of deep insights regarding participants' perceptions of the aesthetic principles of maroon and sage green color harmonization in kebaya, its relevance to current trends, and its design implications and identity representation. Furthermore, our evaluation of the Scratch application encompassed assessing its functionality as an effective pedagogical tool and its utility as an initial prototyping instrument for designers.

## 3. Findings

Interviews with the respondents, particularly academics and practitioners, provided crucial insights into the aesthetic principles and color harmony underlying the combination of maroon and sage green in contemporary kebaya design. Academics highlighted that from a color theory perspective, maroon, with its rich value and deep saturation, intrinsically represents luxury, stability, and passion, while sage green symbolizes tranquility, closeness to nature, and sophistication. When combined, these colors create a complex harmony; they can function as analogous pairs with close values or as soft contrasts if the nuances are strategically chosen. Practitioners explained their creative process in achieving this harmony, for instance, by balancing visuals through color area comparison or using materials with different textures that accentuate each nuance. The application of color harmony theory in fashion design has been a subject of discussion in various journals, including those published by Taylor & Francis in *The Design Journal*, which often examine the interaction of color and form in the context of apparel. The influence of the intensity and saturation of each nuance is highly significant in affecting the overall visual perception of the kebaya (Prameswari et al., 2025). Respondents agreed that using darker maroon with lighter sage often creates an elegant and sophisticated effect, while brighter maroon with more saturated sage can give a bolder yet still harmonious impression. This analysis confirms that the appropriate selection of nuances is key to achieving the desired appeal and coherence.

The analysis of the relevance and acceptance of the maroon and sage green combination in the context of current formal and traditional fashion trends shows interesting dynamics. Fashion industry experts observed that this color combination is gaining popularity in formal wear in Indonesia. They view it as a fresh alternative to traditional color palettes like gold or silver, offering a contemporary aesthetic while retaining elegance. The potential of this combination from a market perspective is very high due to its flexibility in being adapted to various skin tones and occasions. One expert mentioned that this trend is driven by social media influence and consumers' desire to appear unique yet relevant.

Consumer responses, as expressed by practitioners, tend to be very positive. Many consumers were surprised by the elegance exuded by this combination, which they described as "fresh yet timeless." Although there was some initial hesitation from older demographics who tend to be more conservative about kebaya colors, acceptance from younger generations, especially Gen Z, is very strong. Respondents indicated that the psychological associations of the colors—maroon with luxury and sage with natural tranquility also contribute to their popularity. The phenomenon of color trend acceptance in fashion and consumer behavior has been widely researched, with journals like the *International Journal of Consumer Studies* (Wiley) and the *Journal of Fashion Marketing and Management* (Emerald) providing frameworks for understanding this dynamic.

The application of maroon and sage green color harmonization in contemporary kebaya brings significant design implications and represents a distinctive identity (Dewa & Ida, 2018). From a design perspective, practitioners explained that this color choice directly influences material decisions, such as selecting maroon brocade with sage green embroidery accents or using maroon velvet fabric with sage green silk details. They also emphasized the importance of appropriate application techniques, such as strategic embroidery placement or careful dyeing techniques, to achieve optimal visual harmony. This combination allows designers to create more modern and bold kebaya silhouettes while maintaining an essential elegant touch. In terms of identity representation, respondents consistently stated that kebayas with a maroon and sage green combination project the image of modern Indonesian women who appreciate their cultural heritage but also dare to embrace contemporary aesthetics. Academics further suggested that the recontextualization of popular colors in traditional clothing like the kebaya contributes to the evolution of national aesthetic clothing, demonstrating how cultural identity is dynamic and adaptable. This combination represents a blend of traditional luxury and environmental awareness, reflecting a sophisticated and globally minded identity that remains rooted in local heritage. Research in *Fashion Theory: The Journal of Dress, Body & Culture* (Sage) often discusses how clothing, including color, functions as a marker of cultural and personal identity.

Beyond the theoretical and empirical analysis of color harmonization in contemporary kebaya, this research also explores the potential of interactive media to disseminate findings and facilitate visual exploration. Scratch, as a block-based visual programming platform, offers an intuitive environment for developing simple games or simulations (Anis et al., 2023). This application effectively represents complex concepts to a wider audience, including design students and even potential consumers. A game we developed with Scratch innovatively simulates the process of "trying on" maroon and sage green color combinations on various kebaya silhouettes. This not only visualizes the aesthetic principles we analyze in the research but also provides a platform for users to experiment with their personal preferences in the context of trends. More than just a simple simulation, this game functions as an effective pedagogical tool. It bridges theoretical discussions about color harmony and trend relevance with practical visual experience, making these concepts more accessible and appealing to learners. Furthermore, the game has the potential to be an early prototyping instrument for designers to quickly and interactively test color combination ideas before moving to physical production, providing initial visual validation and facilitating design concept communication (Bagas, 2023). Thus, the Scratch application not only supports the dissemination of research findings but also enriches the methodology of fashion design exploration itself.

**Table 1: Interview respondent background**

<b>Respondent</b>	<b>Participant Category</b>	<b>Job Position</b>	<b>Year of Experience</b>
R1	Fashion Industry Expert	Fashion Brand Creative Director	25
R2	Fashion Industri Expert	Senior Fashion Consultant	18
R3	Fashion Industry Expert	Curator, National Fashion Museum	22
R4	Fashion Practitioner	Independent Fashion Designer	10
R5	Fashion Practitioner	Professional Stylist	8
R6	Fashion Practitioner	Digital Fashion Merchandiser	12
R7	Fashion/IT Academic	Lecturer, Fashion Design & Textile Technology	15
R8	Fashion/IT Academic	Human-Computer Interaction (HCI) Researcher	13
R9	Fashion/IT Academic	Head of Visual Communication Design Study Program	20

The study involved nine expert respondents representing three stakeholder groups: fashion industry experts, fashion practitioners, and fashion/IT academics. The respondents possessed between 8 and 25 years of professional experience, ensuring a broad range of perspectives relevant to contemporary kebaya design. As shown in Table 1, the participants included creative directors, fashion consultants, designers, stylists, merchandisers, lecturers, and researchers.

#### 4. Conclusion

Based on the in-depth analysis conducted, this research successfully elucidated the harmonization of maroon and sage green colors in contemporary kebaya design, analyzing its aesthetics, trend relevance, and design implications, as well as its identity representation.

Firstly, this study comprehensively examined the aesthetic principles and color harmony underlying the maroon and sage green combination in contemporary kebaya. Findings indicate that maroon radiates luxury, stability, and passion, while sage green symbolizes tranquility and sophistication, creating a complex and balanced harmony. Practitioners effectively balance visual elements through color area comparison and varied material usage. Precise nuance selection is crucial for achieving the desired effect, whether elegant, sophisticated, or bold.

Secondly, we successfully identified the relevance and acceptance of the maroon and sage green color combination within the context of current formal and traditional fashion trends. Fashion industry experts observed a growing popularity of this combination as a fresh alternative that maintains elegance, driven by social media and consumer desires for unique yet relevant appearances. Consumers provided very positive feedback, often describing it as "fresh yet timeless," with strong acceptance particularly from younger generations. The psychological associations of the colors also contributed to this popularity.

Thirdly, this research explored the design implications and identity representation emerging from the application of maroon and sage green harmonization in contemporary kebaya. These color choices directly influence material decisions and application techniques, enabling designers to create modern yet essentially elegant kebaya silhouettes. In terms of identity, this combination projects the image of a modern Indonesian woman who values her cultural heritage while embracing contemporary aesthetics, reflecting a blend of traditional luxury and global environmental awareness.

Furthermore, this research utilized the Scratch application as an innovative interactive medium to disseminate findings and facilitate visual exploration. This simulation game allows users to interactively apply color palettes to virtual kebaya models, directly observing the visual impact on the overall design, and experimenting with their personal preferences within trend contexts. The application also serves as an effective pedagogical tool, bridging theoretical discussions with practical visual experience, and acting as an initial prototyping instrument for designers to quickly and interactively test color ideas. Thus, the utilization of Scratch not only supports the dissemination of research results but also enriches the methodology of fashion design exploration itself.

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#### Conflict of interest

the authors declare no conflict of interest.

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