



The Impact of Dominant Color in the Shopee Application's User Interface Design on User Focus Levels

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Abstract— The design of mobile application interfaces plays a crucial role in shaping user experience, where color influences not only aesthetics but also user cognition and focus. This study aims to analyze the effect of the dominant orange color in the Shopee application interface on user focus levels. A quantitative correlational approach was employed, involving 32 respondents who completed a Likert-scale questionnaire, with data analyzed using SPSS. The results show a strong and statistically significant correlation between color perception and user focus ($r = 0.681$; $p < 0.05$), indicating that better evaluation of the dominant color is associated with higher focus levels. Furthermore, the coefficient of determination ($R^2 = 0.464$) reveals that nearly half of the variation in user focus is explained by color alone. These findings confirm that the dominant orange color enhances attention, supports sustained concentration, and improves navigation efficiency. This study highlights color as a key functional factor in optimizing user focus in mobile commerce applications.

Keywords: User Interface (UI); Color Psychology; User Attention; Mobile Applications; E-commerce; Visual Design

1. INTRODUCTION

Smartphone-based online shopping has become an integral part of daily life, particularly with the emergence of mobile shopping applications like Shopee, which prominently features orange as its primary color. Effective user interface (UI) design enhances navigation and product discovery while simultaneously influencing user comfort and concentration. The selection of color in interface design serves a dual purpose: acting as an aesthetic component and exerting a psychological influence on user behavior. Studies by [1] and [2] indicate that applying appropriate color contrast can improve visual comfort, whereas [3] reveals that optimal color application is crucial in creating an attractive and functional interface design.

Furthermore, [4] emphasize the importance of readability and accessibility through color contrast, while [5] and [6] associate visual elements with usability, which impacts the effectiveness of user interaction. From the perspective of color psychology, [7] and [8] posit that each color carries emotional associations, for instance, red is associated with urgency, blue with calmness, and green with harmony, while [9] highlights the influence of color combinations in enhancing user engagement. Research by [10] adds that color plays a significant role in increasing brand awareness, an aspect highly relevant to Shopee's visual identity through its dominant orange color.

In the context of mobile application interface design, [11] state that layout and display modes also affect user experience, whereas [12] emphasize that applying cognitive principles, such as Gestalt principles and Hick's Law, can reduce cognitive load, thereby increasing user focus. Studies by [13] and [14] support the importance of intuitive graphic design in facilitating efficient interactions, while [15] and [16] demonstrate that design consistency and visual control play a significant role in the overall user experience.

Innovations in color selection have also become a focus of recent research. [17] introduced CoColor, an interactive plugin for exploring adaptive color schemes, while [18] developed a personal color test application that integrates Generation Z preferences. [19] highlight the importance of optimizing color accessibility for users with perceptual limitations, whereas [20] prove that UI/UX quality directly affects user comfort and focus. Among the various elements of UI design, color holds a particularly influential role as both a visual and cognitive mechanism. Color is not merely an aesthetic enhancement but functions as a strategic tool that guides user attention, structures visual hierarchy, and facilitates faster information processing. Previous studies indicate that appropriate color contrast improves readability and accessibility, while consistent color usage strengthens brand identity and recognition. Furthermore, color has been shown to influence usability and interaction effectiveness within digital interfaces. From a psychological perspective, colors evoke emotional responses that can affect user behavior and concentration, and the application of suitable color combinations can enhance user engagement. In visually dense environments such as mobile commerce applications, effective color utilization also helps reduce cognitive load and directs user focus toward essential interface elements.

Despite the extensive body of research on color in UI/UX design, a clear research gap remains. Previous studies have predominantly examined color in terms of general usability, emotional impact, or aesthetic preference, without isolating the effect of a specific dominant color within a real-world application context. In particular, limited research has explored how a single, strongly branded color—such as the dominant orange used in the Shopee application—affects user focus in complex and stimulus-rich interfaces. This gap is important because e-commerce platforms typically present multiple visual elements simultaneously, which may either enhance or interfere with user concentration depending on how color is utilized.



Therefore, this study aims to specifically investigate the effect of the dominant orange color in the Shopee application interface on user focus levels. By focusing on a real-world mobile commerce application and a single dominant color, this research seeks to provide more precise empirical evidence regarding the functional role of color in UI design. The findings are expected to contribute to the development of more effective UI/UX strategies by positioning color not only as a visual attribute but as a critical factor in optimizing user attention, navigation efficiency, and overall interaction quality in mobile applications.

2. RESEARCH METHODOLOGY

2.1 Research Design

This study employs a quantitative methodology with a descriptive framework to examine the impact of the dominant orange color in the Shopee application interface on user concentration levels. A descriptive design was selected to accurately explain the correlation between users' color perception and their resulting levels of concentration.



Fig 1. *Research Design Framework*

The research design of this study follows a systematic and sequential process, beginning with the identification of the problem and research gap related to the role of color in user interface (UI) design and its influence on user focus in mobile commerce applications. Based on this gap, a clear research objective is formulated, which is to analyze the effect of the dominant orange color in the Shopee application interface on user focus levels. To achieve this objective, a quantitative correlational research design is selected, as it enables the examination of relationships between variables without experimental manipulation. The study then defines and operationalizes the key variables, namely dominant color evaluation as the independent variable and user focus level as the dependent variable, ensuring that each construct is measurable and grounded in relevant theoretical perspectives.

Following the research design stage, data are collected using a structured questionnaire distributed to respondents who have experience using the Shopee application. The collected data are then processed and analyzed using statistical techniques, including descriptive statistics, validity and reliability testing, and inferential analysis such as Pearson correlation and simple linear regression. These analytical methods are employed to determine the strength and significance of the relationship between variables. The results of the analysis are subsequently interpreted to provide meaningful insights into how dominant color influences user focus, and finally, conclusions are drawn to summarize the findings and highlight their implications for UI/UX design, while also acknowledging limitations and opportunities for future research.

2.2 Population, Sample, and Sampling Technique

The target population for this study comprises active users of the Shopee application residing in Palembang.

- a. **Sampling Technique:** The study utilizes convenience sampling.
- b. **Sample Size:** The sample size will be adjusted to include more than 30 respondents, accounting for the limitations of distributing the survey within a single city.
- c. **Inclusion Criteria:** Selected respondents must meet the following specific criteria:



1. Have used the Shopee application for a minimum of three months,
2. Be aged between 17 and 35 years old.
3. Demonstrate consistent familiarity with the application.

2.3 Data Collection and Research Instrument

Data will be collected through an online questionnaire. A 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) will be utilized to measure perceptions and focus levels. The instrument is divided into four main sections:

Table 1. Research Instrument

Instrument Name	Description
Demographic Data	Includes name, age, gender, and frequency of application use.
Dominant Color Evaluation	Covers visual appeal, eye comfort, and color alignment with brand identity.
Four Focus Level Measurement	Assesses ease of finding products, task completion speed, visual distraction, concentration, eye fatigue, and accuracy.
Open-Ended Feedback	Explores the specific influence of the orange color on the user's focus.

2.3.1 Pilot Study

Before sending the questionnaire to the main sample, a pilot study with 15 respondents who satisfied the research requirements was undertaken to assess validity. Participants were requested to complete the questionnaire and furnish written input concerning the clarity and comprehensibility of each item. The pilot research data were evaluated descriptively to identify and amend any ambiguous or unclear items.

2.4 Data Analysis Techniques

Data analysis will be executed using SPSS software, incorporating several analytical phases:

- a. Descriptive Statistics: Frequencies, percentages, and means will be used to outline respondent characteristics and the distribution of responses.
- b. Validity Testing: Construct validity will be assessed using Exploratory Factor Analysis (EFA). EFA identifies the underlying factors of the questionnaire items, utilizing criteria of a factor loading ≥ 0.4 and a Kaiser-Meyer-Olkin (KMO) value ≥ 0.6 .
- c. Reliability Testing: The questionnaire's reliability will be tested using Cronbach's Alpha (a value ≥ 0.7 is considered reliable). If the Alpha value is < 0.7 , items with low item-total correlations will be eliminated.
- d. Hypothesis Testing: Correlation analysis will be used to determine the relationship between color perception and focus levels. Subsequently, simple linear regression analysis will measure the specific effect of the orange color on focus levels. The research hypothesis (proposing a positive and significant effect) will be accepted if the p-value < 0.05 .

2.5 Ethical Considerations

This study strictly adheres to standard research ethics principles. Prior to completing the questionnaire, all respondents will be provided with a clear explanation of the research objectives and an absolute assurance of data confidentiality. Participation in the study is entirely voluntary, and respondents retain the right to withdraw their participation at any time without consequence.



2.6 Research Questionnaire

Table 2. Research Questionnaire

No	Question	Answer/Scale
Section 1: Demographic Data		
1	Your Name:	
2	Your Age:	
3	Your Gender:	☐ Male ☐ Female
4	How often do you use the Shopee application in a week?	☐ Less than once ☐ 1–3 times ☐ 4–6 times ☐ More than 6 times
5	How long have you been using the Shopee application?	☐ Less than 3 months ☐ 3–6 months ☐ 6–12 months ☐ More than 12 months
Section 2: Orange Color Evaluation		
<i>(Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)</i>		
1	I find the orange color used in the Shopee application visually appealing.	1 2 3 4 5
2	I feel comfortable viewing the application interface dominated by orange.	1 2 3 4 5
3	The orange color used in the application is consistent with Shopee's brand identity.	1 2 3 4 5
4	The dominance of this color makes the application look modern and up to date.	1 2 3 4 5
5	The orange color in the Shopee application makes the application easy to navigate.	1 2 3 4 5
Section 3: User Focus Level		
<i>(Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)</i>		
1	I can easily find the products I am looking for in the Shopee application.	1 2 3 4 5
2	I can complete shopping tasks in the Shopee application quickly.	1 2 3 4 5
3	I am distracted by color elements that are too striking in the Shopee application.	1 2 3 4 5
4	I can easily maintain concentration while using the Shopee application.	1 2 3 4 5
5	My eyes become tired quickly when using the Shopee application.	1 2 3 4 5
6	The color design of the Shopee application supports an enjoyable and focused shopping experience.	1 2 3 4 5
Section 4: Open-Ended Question (Optional)		
1.	In your opinion, does the use of orange as the dominant color in the Shopee application help you remain focused while using the application, or is the color too striking and therefore disruptive to your concentration?	

3. RESULT AND DISCUSSION

3.1 Descriptive Statistics Results

Descriptive statistical measurement of these variables is necessary to provide a general overview of the data, such as the mean, maximum (Max), minimum (Min), and standard deviation for each variable: Color Evaluation (X) and User Focus Level (Y). The results of the descriptive statistics analysis can be seen in Figure 1 below:

Table 1. SPSS Descriptive Statistics Results

N	Range	Minimum	Maximum	Mean	Std. Deviation
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Evaluasi Warna	32	18	7	25	18,87	4,871
Tingkat Fokus	32	18	12	30	20,88	4,878
TOTAL	33	55	0	55	38,55	11,192
Valid N (listwise)	32					

Based on the descriptive test results above, the data distribution obtained can be described as follows:

- The Color Evaluation variable (X) has a minimum value of 7, a maximum value of 25, a mean of 18.87, and a standard deviation of 4.871.
- The Focus Level variable (Y) has a minimum value of 12, a maximum value of 30, a mean of 20.88, and a standard deviation of 4.878. (Note: Corrected a typo from the original text which mistakenly labeled Y's standard deviation as Color Evaluation).

3.2 Validity Test Results

The validity test was conducted to determine the ability of each questionnaire item to accurately measure the research variable. The test involved 11 statement items, namely P01 to P11, using the Pearson Product-Moment Correlation with 32 respondents. Each item was considered valid when the correlation coefficient between the item score and the total score was positive and the significance value was less than 0.05. The results of the instrument validity test are presented in the following table.

Table 2. SPSS Validity Test Results

		Correlations											
		P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	TOTAL
P01	Pearson Correlation	1	,729**	,572**	,791**	,758**	,426*	,514**	,225	,539**	,202	,583**	,783**
	Sig. (2-tailed)		,000	,001	,000	,000	,015	,003	,216	,001	,267	,000	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P02	Pearson Correlation	,729**	1	,473**	,777**	,737**	,489**	,530**	,135	,670**	,247	,627**	,797**
	Sig. (2-tailed)	,000		,006	,000	,000	,005	,002	,463	,000	,173	,000	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P03	Pearson Correlation	,572**	,473**	1	,572**	,564**	,619**	,576**	,098	,380*	-,011	,429*	,634**
	Sig. (2-tailed)	,001	,006		,001	,001	,000	,001	,593	,032	,953	,014	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P04	Pearson Correlation	,791**	,777**	,572**	1	,827**	,475**	,427*	,312	,621**	,230	,697**	,841**
	Sig. (2-tailed)	,000	,000	,001		,000	,006	,015	,082	,000	,205	,000	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P05	Pearson Correlation	,758**	,737**	,564**	,827**	1	,624**	,535**	,374*	,708**	,304	,743**	,892**
	Sig. (2-tailed)	,000	,000	,001	,000		,000	,002	,035	,000	,091	,000	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P06	Pearson Correlation	,426*	,489**	,619**	,475**	,624**	1	,675**	,249	,508**	,237	,579**	,714**
	Sig. (2-tailed)	,015	,005	,000	,006	,000		,000	,170	,003	,191	,001	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P07	Pearson Correlation	,514**	,530**	,576**	,427*	,535**	,675**	1	,168	,615**	,225	,688**	,718**
	Sig. (2-tailed)	,003	,002	,001	,015	,002	,000		,358	,000	,215	,000	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P08	Pearson Correlation	,225	,135	,098	,312	,374*	,249	,168	1	,262	,568**	,267	,483**
	Sig. (2-tailed)	,216	,463	,593	,082	,035	,170	,358		,148	,001	,140	,005
	N	32	32	32	32	32	32	32	32	32	32	32	32
P09	Pearson Correlation	,539**	,670**	,380*	,621**	,708**	,508**	,615**	,262	1	,467**	,852**	,825**
	Sig. (2-tailed)	,001	,000	,032	,000	,000	,003	,000	,148		,007	,000	,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
P10	Pearson Correlation	,202	,247	-,011	,230	,304	,237	,225	,568**	,467**	1	,333	,504**
	Sig. (2-tailed)	,267	,173	,953	,205	,091	,191	,215	,001	,007		,063	,003
	N	32	32	32	32	32	32	32	32	32	32	32	32
	Pearson Correlation	,583**	,627**	,429*	,697**	,743**	,579**	,688**	,267	,852**	,333	1	,840**



P11	Sig. (2-tailed)	,000	,000	,014	,000	,000	,001	,000	,140	,000	,063		,000
	N	32	32	32	32	32	32	32	32	32	32	32	32
TOTAL	Pearson Correlation	,783**	,797**	,634**	,841**	,892**	,714**	,718**	,483**	,825**	,504**	,840**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,005	,000	,003	,000	
	N	32	32	32	32	32	32	32	32	32	32	32	33

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

* . Correlation is significant at the 0.05 level (2-tailed).

The Pearson product-moment correlation coefficient (r) was utilized to derive a comparative value from the aforementioned test findings. For a sample size of $n=32$ and a significance level of 5% ($\alpha=0.05$), the critical value from the r -table is 0.349. For an item to be deemed valid, the output for each statement must exceed 0.349. The validity test findings demonstrate that all statements possess a value exceeding 0.349, indicating that the utilized questionnaire items are valid.

3.3 Reliability Test Results

The reliability test was conducted to assess the internal consistency of the research instrument consisting of 11 statement items. The test employed the Cronbach's Alpha method using SPSS. An instrument is considered reliable when the Cronbach's Alpha coefficient exceeds 0.70. The results of the reliability test are presented in Table 3.

Table 3. SPSS Pearson Reliability Test Results

Cronbach's Alpha	N of Items
,907	11

The results of the reliability test are considered valid (reliable) if the Cronbach's Alpha value is greater than 0.6 (>0.6). The table shows that the test result is 0.907, indicating that the instrument is highly reliable.

3.4 Correlation Analysis Results

Correlation analysis was conducted to determine the relationship between Color Evaluation and Level of Focus among 32 respondents. The analysis employed the Pearson Product-Moment Correlation using SPSS. The strength and direction of the relationship were assessed based on the correlation coefficient, while statistical significance was determined using the significance value at the 0.01 level. The results of the correlation analysis are presented in the following table.

Table 4. SPSS Pearson Correlation Test Results

		Color Evaluation	Level of Focus
	Pearson Correlation	1	,681**
Color Evaluation	Sig. (2-tailed)		,000
	N	32	32
	Pearson Correlation	,681**	1
Level of Focus	Sig. (2-tailed)	,000	
	N	32	32

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

The Pearson correlation test findings from SPSS yielded a correlation coefficient of 0.681, with a significance value (Sig. 2-tailed) of 0.000. The significance value being less than 0.05 indicates a significant association between the prominent hue in the Shopee application interface design and the user's focus level. A correlation coefficient of 0.681 is classified as "strong," signifying that a more appropriate dominant hue correlates with an increased level of user focus.



3.5 Simple Linear Regression Analysis Results

3.5.1 Regression Equation Model

Simple linear regression analysis was conducted to examine the effect of Color Evaluation on the Level of Focus. The regression model was formulated using the constant value and the unstandardized regression coefficient obtained from the SPSS output. In this model, the Level of Focus serves as the dependent variable, while Color Evaluation serves as the independent variable. The results of the simple linear regression analysis are presented in Table 5.

Table 5. SPSS Simple Linear Regression Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	8,005		3,070	,005
	Evaluasi Warna	,682	,681	5,093	,000

Dependent Variable: Tingkat Fokus

Based on the analysis results above, the regression equation model can be formulated as follows:

$$Y = 8,005 (\alpha) + 0,682 (X) + e \quad (1)$$

Where:

- Constant (α) = 8.005: Indicates that if there is no influence from the Color Evaluation variable ($X=0$), the Focus Level (Y) remains at 8.005.
- Regression Coefficient (β) = 0.682: Indicates that every one-unit increase in Color Evaluation will increase the Focus Level by 0.682. Since the coefficient is positive, it can be concluded that the relationship between color evaluation and focus level is positive and unidirectional.

3.5.2 Hypothesis Testing

Hypothesis testing was conducted to determine whether Color Evaluation has a statistically significant effect on the Level of Focus. The hypothesis was examined using a partial t-test based on the simple linear regression output generated by SPSS. The alternative hypothesis is accepted when the significance value is less than 0.05, whereas the null hypothesis is accepted when the significance value is greater than 0.05. The results of the regression hypothesis test are presented in Table 6.

Table 6. SPSS Significance Test Results (Regression Hypothesis Testing)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	8,005		3,070	,005
	Evaluasi Warna	,682	,681	5,093	,000

Dependent Variable: Tingkat Fokus

- Significance Value: $0.000 < 0.05$
- t-value: $t\text{-count} > t\text{-table}$ ($5.093 > 2.042$)

According to the aforementioned decision-making criteria, it can be inferred that the color evaluation variable significantly influences the amount of focus. The significance value, being below 0.05, signifies a high level of confidence in the analysis results. Moreover, the computed t-value (t-count), above the t-table value, substantiates the statistical significance of this effect. Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, meaning that color evaluation has a tangible impact on increasing respondent focus.

3.5.3 Coefficient of Determination

The coefficient of determination was analyzed to determine the proportion of variation in the Level of Focus that can be explained by Color Evaluation in the regression model. This analysis was based on the R Square value obtained from the SPSS Model Summary output. The results of the coefficient of determination analysis are presented in the following table.

Table 7. SPSS Coefficient of Determination (R^2) Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,681 ^a	,464	,446	3,631

Predictors: (Constant), Evaluasi Warna

The R-Square (R^2) value of 0.464 indicates that 46.4% of the variation in the dependent variable is explained by the independent variable, namely color evaluation. This demonstrates that the regression model accounts for 46.4% of the variance in the respondents' focus levels caused by color evaluation, while the remaining 53.6% is influenced by external factors not included in the model. This value signifies a strong and statistically significant relationship between the two variables.

3.6 Why Color Affects User Focus

The relationship between dominant color and user focus can be explained through principles of visual attention and cognitive processing. Color acts as a visual cue that helps users quickly identify important elements within an interface, thereby reducing the effort required to process information. In this study, the dominant orange color may function as a visual anchor that guides users toward key features such as buttons and navigation elements. From a psychological perspective, orange is associated with energy and stimulation, which may increase alertness and engagement during interaction. However, this relationship should not be interpreted as causal, as color operates alongside other interface elements. In addition, excessive use of bright or highly saturated colors may lead to visual fatigue or distraction, indicating that the effectiveness of color depends on its balanced application within the overall design.

The coefficient of determination ($R^2 = 0.464$) indicates that a substantial portion of user focus is influenced by other factors beyond color. These include interface layout, information density, typography, and navigation structure, all of which affect how easily users process and interact with information. User-related factors, such as experience, familiarity with the application, and individual differences in perception, may also contribute to variations in focus. Furthermore, contextual conditions, including device settings and environmental distractions, can influence user attention. Therefore, while color is an important element in supporting user focus, it should be considered as part of a broader design system that integrates multiple factors to optimize the overall user experience.

3.7 The Effect of the Color Orange on Navigation Ease and User Focus

The R-Square (R^2) value of 0.464 indicates that 46.4% of the variation in the dependent variable is explained by the independent variable, namely color evaluation. This demonstrates that the regression model accounts for 46.4% of the variance in the respondents' focus levels caused by color evaluation, while the remaining 53.6% is influenced by external factors not included in the model. This value signifies a strong and statistically significant relationship between the two variables.

Warna orange pada aplikasi Shopee membuat saya merasa mudah untuk menavigasi aplikasi.
32 jawaban

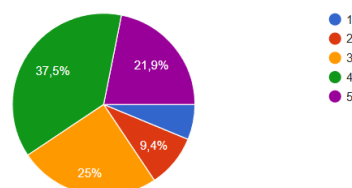


Fig 2. Distribution of Respondent Feedback

These findings indicate that the use of the color orange in Shopee's interface design is not only visually appealing but also assists users in the application navigation process. The bright and contrasting orange color appears to provide clarity to visual elements, thereby making it easier for users to recognize key features within the application. Consequently, this



dominant color plays a vital role in creating a more efficient navigation experience and possesses the potential to enhance user focus while utilizing the application.

4. CONCLUSION

This study demonstrates that the dominant color used in a mobile application interface is meaningfully associated with user focus. The findings indicate that positive perceptions of the dominant color align with higher levels of user attention and more efficient interaction within the Shopee application. Rather than functioning solely as an aesthetic element, color operates as a visual and cognitive cue that supports navigation and helps structure user attention in visually dense environments. These results reinforce the role of color as an important component of effective UI/UX design. However, the findings should be interpreted with caution due to several limitations. The relatively small sample size ($n = 32$) and the use of a convenience sampling method limit the generalizability of the results and may introduce sampling bias. In addition, the correlational design does not allow for causal conclusions, and user focus is likely influenced by multiple factors beyond color, such as interface layout, typography, user experience, and contextual conditions. From a practical perspective, this study suggests that designers should apply dominant colors strategically to enhance visual hierarchy and support user attention, while maintaining balance to avoid visual fatigue. For future research, it is recommended to involve larger and more diverse samples, apply experimental approaches to examine causal relationships, and incorporate additional variables such as layout complexity, interaction patterns, and user characteristics. Further studies may also compare different dominant colors across various application contexts to provide a more comprehensive understanding of their impact on user focus and overall user experience.

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