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A Study on Palmistry Color Reflectance Related to Personality of Subject

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Abstract: The ancient art of palmistry, which is practiced all across the world, is traditionally referred to as palmistry. This method serves as one of the diagnostic techniques since blood circulation in the palm provides important information about an individual's health. A fresh study on palmistry color reflectance in relation to a subject's personality is presented in this publication. The primary goal is to digitally record palm photographs from a sample of participants representing different faculties at University Teknologi Mara, as well as to gather personality and health data. Significant data that can be related to the personality and health index will next be analyzed using the proper statistical tools. In order to investigate a subject's personality index, this research focuses on advances in the field of color image processing of palmistry using sophisticated RGB color image processing algorithms. Samples of palm photographs are digitally taken in a standard and controlled atmosphere for this task. The subject's personality is represented by additional distinctive parameters. The quantified color component indices from the processed image are subjected to statistical methods in order to identify important discoveries that can relate palm color to the character of the subject. In summary, all color components can be used to distinguish the non-social group from all other groups.

I. INTRODUCTION

Palmistry is a method that can reveal information about your personality and self, but it is not a way to predict the future. It is possible to assess how many our thoughts and emotions affect our happiness and the harmony of people around us by studying palmistry. Examining the features of the fingers, fingernails, fingerprints, palm skin patterns, skin texture, and the well-known method of hand line reading is an ancient method of studying the hand palm. However, a lot of casual hand observers contend that the lines are just flexure wrinkles that permit the hands to open and close. Palmists have therefore found that the lines are rarely consistent and are constantly shifting. No two hands ever exhibit the same formation, and observations have proven that the line can and does alter in appearance, length, and quality. Traditionally, the human eye is used to visually perceive the palm lines, texture, and color; however, due to individual differences in visual depth, this approach may lead to errors in % accuracy.

Moreover, any definitive prognosis takes time and expertise. Color reflected from the hand may now be measured using sophisticated image processing techniques thanks to advancements in computer and vision technologies. This project offers an alternative approach to the traditional method, which uses basic color analysis (RGB) to analyze palms. Because light from a source interacts with the skin's surface and inner layers through absorption and scattering, changing the light's spectral composition, it can be used as one of the image features. Quantification of the reflected light will encode the structural and optical characteristics of the skin. Color indices in relation to the RGB model are generated by processing a sample of palm photos. Using statistical methods, these indicators are assessed and analyzed to look for any meaningful correlations that can reveal the subject's personality. An automated model for identifying a subject's personality based on the palm's reflected color can be created using the characteristics given.

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II. RGB COLOR SPACE

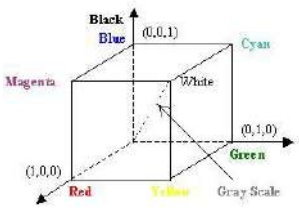

Fig 1-The RGB Color Cube

In computer graphics, the red, green, and blue (RGB) color space is frequently utilized. The three main additive colors red, green, and blue are represented using a three-dimensional Cartesian coordinate system (Figure 1). Additive colors are created by adding separate components. Different grayscale levels are represented by the cube's specified diagonal, which has equal amounts of each basic component. The RGB values for 100% amplitude and 100% saturated color bars, a typical video test signal, are shown in Table 1.

Color	Norminal range	White	Yellow	Cyan	Green	Magnenta	Red	Blue	Black
R	0 to 255	255	255	0	0	255	255	0	0
G	0 to 255	255	255	255	255	0	0	0	0
B	0 to 255	255	0	255	0	255	0	255	0

The RGB color space is the most prevalent choice for computer graphics because color displays use red, green and blue to create the desired color. Therefore, the choice of the RGB color space simplifies the architecture and design of the system. Also, a system that is designed using the RGB color space can take advantage of a large number of existing software routines, since this color space has been around for a number of years

III. METHODOLOGY

A. Data Collection

In this study, 302 sets of questionnaires were given to students enrolled in UiTM Shah Alam's Science and Technology building. The four sections of the questionnaire are sociability, intelligence (CGPA), sport, and health. Of the 302 responders, 176 are clever, 102 are in the sport group, and 197 are in the sociability group. In addition to completing the questionnaire, each respondent's right palm was recorded at the Faculty of Electrical Engineering's Image Capturing Studio Room (ICS Room), Advance Signal Processing (ASP) laboratory. It should be mentioned that these photos were taken in a controlled setting. Before image can be captured, the raw measurement (Lux reading) of light was recorded using Heavy Duty Light Meter connected with Data Logger or directly to computer. The measurement was recorded and categorized as whether image capturing is in the morning, evening or night session. Figure 2 below shows an example image of right hand palm of a respondent.

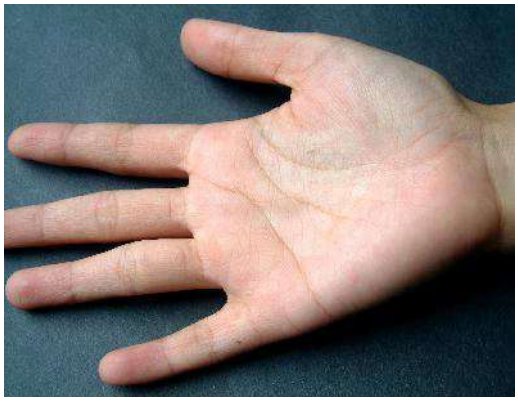

Fig 2 - Sample of Right Hand Palm

B. Data Capturing

A FinePix 6900 Zoom (FujiFilm) digital camera with a pixel resolution of 1280x960 was used to capture the Red, Green, and Blue (RGB) component color photographs, which were then stored in JPEG format. Since all pertinent information about the hand palm is displayed, this size is adequate for analysis [4]. The camera was positioned one foot over the respondent's palm during the photo shoot (Figure 3). A spotlight (Digicolor K-250C) provided the lighting needed to take pictures. Heavy Duty Data Logger (Model 380340) and Heavy Duty Light Meter (Model 407026) were used to measure the light intensity. A mean lux of 2677 + 48 in the morning and 2681 + 43 in the evening is the recommended light measurement during calibration. The lux values were taken using Heavy Duty Light Meter connected to the Data Logger with an interval time one second for each session (>20 sec). The suitable time for capturing image is in the morning at 0800 to 1200 and in the evening at 1400 to 1800, because the significant 0.614 p-value for lux reading was obtained during these sessions as described in Table 2.

Table 2- Paired Sample Test for Morning, Evening and Night session

Paired Sample Test	P-Value
Morning – Evening	0.614
Morning – Night	0
Evening – Night	0

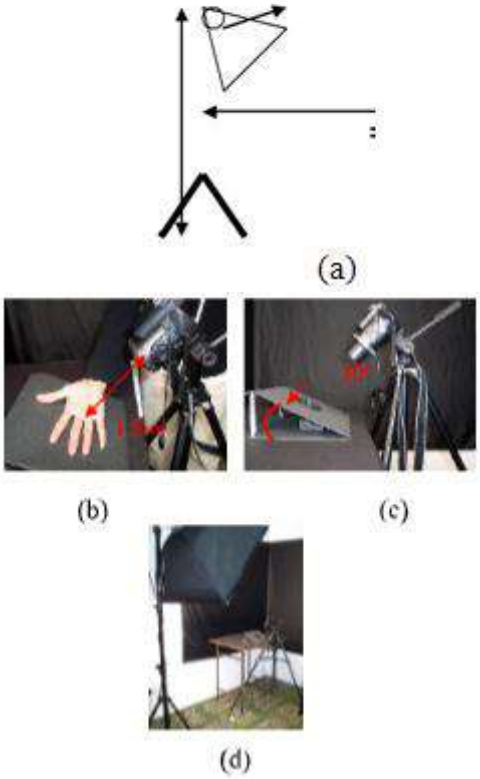

Fig 3 - Arrangement of equipments; (a) placement of light source with subject (b) distance between palm and camera (c) degree of subject platform &(d) picture of equipments

C. Image Processing

Each hand palm image was divided into two sample areas of interest (ROI), and each pixel's color was represented as an additive blend of the three primary RGB bands. For each pair of photos, a total of twenty ROI samples were initially taken into consideration. Following the identification of a sample from each image, the RGB mean pixel value will be noted. After that, SPSS software will be used to examine it. The image processing flowchart is shown below.

D. Median Filtering

In order to reduce noise and make image segmentation easier, the initial stage was pre-processing the images using median filtering. In terms of tiny white elliptical lines or dots, the imaging method could be noisy. Since this is impulsive noise, the median filter provided by can be used to attenuate it. whereN_{med} is odd^2 and indicates the size of the two dimensional median filter. *P* represents all the three color components and only square median filter kernel was considered.

E. Statistical Measurement

Statistical analysis, including the t-test and error plot, was used to assess the respondents' personality identity. The three personality types' means and standard deviations were contrasted. For analysis, all image mean and standard deviation values were imported into SPSS.

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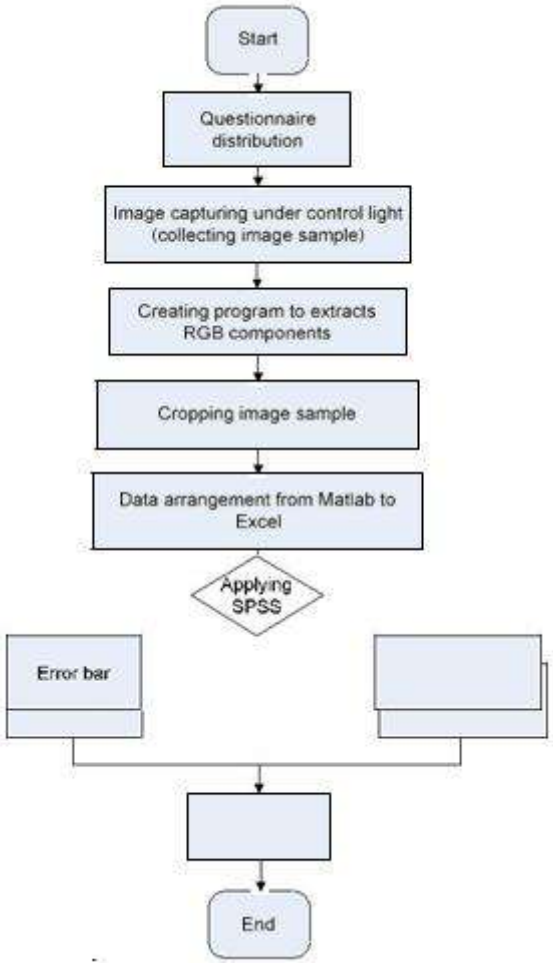

$$P_{med}(,,n) = edian\{P(\quad -k,n-1) \mid -\frac{N_{med}-1}{2} \le k,$$

$$l \le \frac{N_{med}-1}{2} \wedge 1 \le \quad -k \le \quad \wedge 1 \le n-1 \le N\} \quad (1)$$

F. Inference Test

The likelihood of finding a test statistic at least as extreme as the one calculated assuming the null hypothesis is true is known as the test's p-value. Because it quantifies the degree of statistical support for the alternative hypothesis, a test's p-value offers useful information. When compared to the graphical output of an error plot, a smaller p-value indicates more statistical evidence for the alternative hypothesis and more accurate analysis. When a certain test procedure is applied to a particular data set, the p-values represent the lowest level of significance at which H0 would be rejected. Once the p-value has been determined, the conclusion at any particular level alpha results from comparing the p-value to alpha which is p- value $\le$ 0.05 reject H_0 at level 0.05, p-value > 0.05 do not reject H_0 at level 0.05. Each sample mean was considered to be independent and uncorrelated from each other. Before conducting the t-test the necessary assumptions must be met. The assumptions for the t-test are:

1) Population normality – The populations that the samples were taken from ought to be typical. Use normalcy statistics like skewness and Shapiro-Wilks to verify this for every group.

2) Homogeneity of variance – Each group's scores ought to have uniform variances. Levene's test establishes if variances are equal or unequal, just like the t-test.

Hence, the null and alternative hypothesis, and the t-test used are shown below [3]:

$$\textit{Null}\ \text{Hypothesis}\ (H_0) : (\square_1 - \square_2)\ \square\ 0 \qquad (2)$$

$$\textit{Alternative}\ \text{Hypothesis}\ (H_1) : (\square_1 - \square_2) \neq 0 \qquad (3)$$

$$\_\ \ \_\ {}_2\square - \square\square_1 - \quad \square\chi^{1} - \chi \quad \square_2 \square \qquad (4)$$

$$\textit{Test}\ \text{statistic} : t\ \square \frac{}{\sqrt{\sigma p\ \frac{1}{n_1}\ \square\ \frac{1}{n_2}}}$$

$$\textit{Degree}\ \text{of freedom} : df\ \square\ n_1\ \square\ n_2 - 1 \qquad (5)$$

RGB error bar plots shown will provide better interpretation if discrimination is required through observation [3]. Figure 5 shows the resulted RGB error plot respectively. By observation, the color space of nonssl (nonsocial) can be distinguished clearly from other type of personality in RGB color space.

B. ANOVA Test

Since the assumption of two conditions has been met, which is population normality and homogeneity of variance test [7] therefore hypothesis for ANOVA can be made:

H_0 = No different in RGB color space between each type of personality.

H_I = At least one different type of personality in RGB color space

The ANOVA table (Table 3) shows there is a significant difference in RGB color space across the different type of personality. The H_0 hypothesis can rejected or accepted the alternative hypothesis since the F_{RED} (5, 1806) = 8.573, p-value < 0.05, F_{GREEN} (5, 1806) = 8.085 , p- value < 0.05, F_{BLUE} (5,1806) = 3.306, p- value < 0.05.

		Sum of Squares	df	Mean Square	F	Sig.
RED	Between Groups	9496.342	5	1899.268	8.573	.000
	Within Groups	400084.5	1806	221.531		
	Total	409580.8	1811			
GREEN	Between Groups	10635.869	5	2127.174	8.085	.000
	Within Groups	475176.4	1806	263.110		
	Total	485812.3	1811			
BLUE	Between Groups	8192.931	5	1638.586	3.306	.006
	Within Groups	895142.2	1806	495.649		
	Total	903335.2	1811			

Table 3 ANOVA Table

C. Inference Test

From the independent t-test, p-value can be obtained to infer where there is evidence of group population or not between types of personality based on reflectance RGB mean indices

V. CONCLUSIONS

Algorithm which produced the reflectance RGB color indices for personality types was presented. Six group of personality types were identified for data processing either by using error bar or t-test. All groups consist of data images captured under controlled specifications. Performances of the methods used were analyzed and compared by displaying their error bar and then it was further tested with statistical inference tools. Result shown that by observing the error bar plots, the non-social group can be discriminated from all other groups significantly based on all color components. Measurements from the applied t-test outcomes have shown that RGB reflectance color space can portray and relate with personality of the subject.

VI. FUTURE RECOMMENDATION

In order to improve the capability and effectiveness of this research, this work can be extended by using the same algorithm but with other color models. In addition, the quantified color features can be used to train an intelligent system to classify types of the personality. It is also highly recommended to use more precision equipments for capturing image to avoid interference in brightness and sharpness of color. For future work, lighting control will be suggested for daylight when capturing image in order to get the best image.

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REFERENCES

1. Available at: http://www.zodiac3.netfirms.com/Palm%20 reading/ Palmistry_ home. htm," Palmistry".
2. S.Mansor, A Study on HSV Color Space of Psoriasis Lesion using Statistical Analysis, in Final Year Project Paper at Faculty of Electricalengineering, vol. B.Eng (Hons) Electrical Engineering: Universiti Teknlologi Mara (UiTM), 2006 .
3. H.Hashim, R. Jailani, M.N. Taib, S. Sulaiman, and R. Baba, An Inference Study between Conventional and LIR RGB Color Indices for Plaque Lesion, Kuala Lumpur, 2004.
4. H.Hashim, M.N. Taib, R. Jailani, S. Sulaiman, and R. Baba, Performance of Digital RGB Reflectance Color Extraction for Plaque Lesion, Bejing, China, 2004.
5. Paliwal, N.S. Shashidar, and D.S. Jayas, Grain Identification using Kernel Signature.
6. S.J. Coakes, SPSS12.0 for Windows: Analysis without Anguish, Sydney: John Wiley & Sons Australia, Ltd, 2005
7. McDonald, J.H. Handbook of Biological Statistics, 2nd ed. Baltimore: Sparky House Publishing. 2009.