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STUDY OF SELECTION BEHAVIOUR OF STANDARD OBSERVORS FOR BEST HUE COLOUR PATCHES BETWEEN THE FLORESCENT LIGHT AND U30 LIGHT

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ABSTRACT

This paper analyzes the variation in judgment for selection of best hue from colour patches between Florescent and U30 light the experiments for his study is performed in adherence with the ISO Standards and the results of this study shows that the trend for selecting next towerds higher density patches in Yellow and Cyan colour, opposite in Magenta colour and no change in case of Black colour.

Keywords : Hue , Colour , Print Contrast, Density, Standard Observer.

I. INTRODUCTION

Colors also look different due to optical illusions, background difference and individual differences. Therefore apart of above these hue influencing factors this study is made to analyze the variation in judgment for selection of best hue from colour patches between the Florescent and U30 light.

II. RESEARCH METHODOLOGY

For this study, first of all a suitable master was prepared after considering many changes with a continuous wedge of solids along with dot gain patches and experiment was carried out with following material and specifications.

For this study, Bilt C2S Art Paper Royal Gloss 130 GSM was selected for printing. Plates were prepared by CTP. The press room conditions were set as relative humidity of pressroom was 45-46 percent, the temperature was 28-30˚C and pH of the dampening solution was maintained 5.1. The master was designed in such a way that value of density and other values can be measured easily in effective way and same was printed using LT Spectro process ink. All the printing is done on 'ADAST Dominant 725 P' machine at 3000 I.P.H.

The printed sheets with different densities from one end to other end keeping the variation with 0.05 densities. The sheets be allowed to dry and after 8 hours, the 'Lab' and 'Print Contrast' are measured on each density patches, and the curve depicting different LAB and contrast values are captured accordingly using X-Rite eXact instrument. To make the analysis more justified by human perception the same sheets were given to 10 on line Fransworth-Munsell 100 hue color vision test qualified Standard Observers and and final colour

judgment procedure were done on X-Rite's Macbeth Lighting Booth. Which are recorded, analyzed and represented. All the parameters like Paper, Ink, Measuring Conditions, and Measuring Instruments etc. were maintained in compliance with ISO specifications.

III. TEST CHART

The elements of the test chart used in this study consists

Solid bars of CMYK.

Colour control strip along the length Colour control strip along the length (Digital Print control strip for electronic Imposition / Thomson Press).

Solid triangles of 155 square cm area for each triangle in which consumption of ink is high to low from left to right for Y&C and opposite for M&K.

Solid colour 19 patch strip of 1.3 x 2.5 cm of CMYKG colours.

Ugra/ Slur doubling patches of YMC and K colours and screen (Twice).

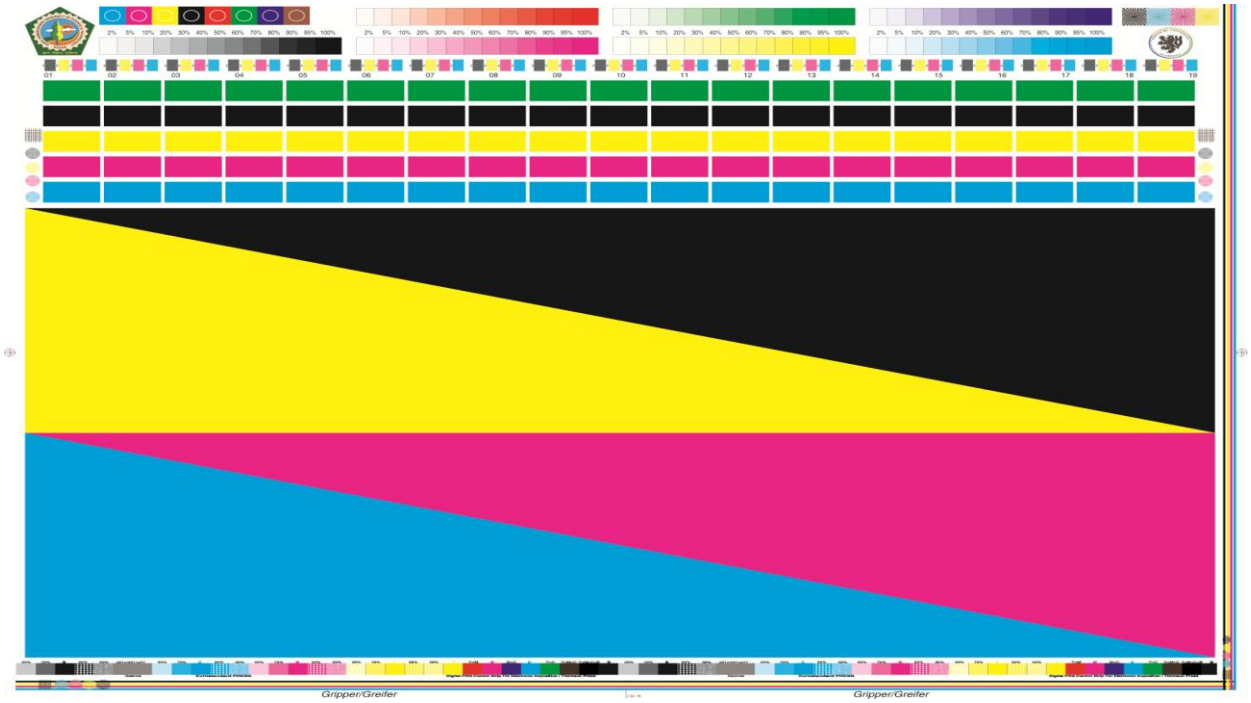
Ink key zone wise CMYK patches of 75 % dot patches for all 19 ink zones.

2-100% dot patch strip of RGBCMYK dot patches.

Logo of GJUS&T and Wuppertal University.

Plate blanket pressure and ink fill indicator patch.

Colour registration marks.



IV. DATA COLLECTION AND ANALYSIS

The patch numbers selected by Standard Observers in U30 Light after selecting an appropriate patch in florescent light for all ten sample sheets are first tabulated and their selection trends towards higher, lower and same patches are tabulated below:

Sheet No.	1	2	3	4	5	6	7	8	9	10	Frequency
CYAN COLOUR PATCHES											
Low to High Patch No.	4	4	3	4	4	3	2	7	6	6	43
High to Low Patch No.	2	1	4	1	2	2	3	2	2	2	21
Same Patch No	4	5	3	5	4	5	5	1	2	2	36
MAGENTA COLOUR PATCHES											
Low to High Patch No.	4	3	4	3	4	1	4	4	3	3	33
High to Low Patch No.	2	2	3	1	4	2	2	5	3	3	27
Same Patch No.	4	5	3	6	2	7	4	1	4	4	40
YELLOW COLOUR PATCHES											
Low to High Patch No.	5	3	3	2	6	3	3	3	5	5	38
High to Low Patch No.	2	1	3	4	3	1	5	2	4	4	29
Same Patch No.	3	6	4	4	1	6	2	5	1	1	33
BLACK COLOUR PATCHES											
Low to High Patch No.	4	2	3	4	5	6	2	3	0	0	29
High to Low Patch No.	1	3	4	2	2	2	5	2	3	3	27
Same Patch No.	5	5	3	4	3	2	3	5	7	7	44

V. RESULT & ANALYSIS

After seeing trends of results and analysis of tabular data the observations from this study are as following:

In case of Cyan color, U30 light selection in comparison with florescent light by maximum standard observers shows the trend for selection of little higher density and lower contrast patches.

In case of Magenta color, U30 light selection in comparison with florescent light by maximum standard observers shows the trend for selection of little lower density and lower contrast patches.

In case of Yellow color, U30 light selection in comparison with florescent light by maximum standard observers shows the trend for selection of little higher density and higher contrast patches.

In case of Black color, U30 light selection in comparison with florescent light by maximum standard observers

shows the trend for similar selection of density and contrast patches.

VI. CONCLUSION

Conclusions from above analysis is that the trend for selection of hue in case of florescent light and U30 light is not similar for process colors the results of this study shows that the trend for selecting next or higher density patches in Yellow and Cyan colour, opposite in Magenta colour and no change in case of Black colour.

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