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The Psychological Effect of the Librarians' Uniform Color on Occupational Engagement

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ABSTRACT

Introduction: *Colors may have effects on our life and each color is a source of energy based on its chemical and psychological character. Color is one criterion of personality and health evaluation in modern psychology because any color influences a person's mental and physical.*
Purpose: *The research aimed to investigate the psychological effect of librarians' uniforms in public libraries on their occupational engagement.*
Methodology: *The quasi-experimental is applied with Pre-test, Post-test, control group, and experimental group. A statistical population was the library staff at "Iran Public Library Foundation, Isfahan". The sample was randomly selected and assigned to two exam groups experimental group (N=15) and the control group (N=15). Research tools consisted of Utrecht Work Engagement Questionnaire. Covariance analysis was used in the inferential analysis of the research hypothesis. The data were analyzed by SPSS version 22.*
Findings: *The findings have shown that changing the color of the library staff's uniform to yellow and light blue had an impact on their occupational engagement at a meaningful level with an impact of 37%.*
Conclusion: *This color-changing has a positive effect on their occupational engagement and they have more energy to meet the library users' information needs.*

KEYWORDS: *A Job Engagement, Color Psychology, Public Library, Occupational Engagement, Librarian.*

INTRODUCTION

Color has influenced humans and their environment from many years ago and they caused that man has been authorized by them. "Color and light always consider the main part of our life on earth. Natural colors affect us and the effect of the cause to frame our soul and body" (Luscher, 1971). Our world is covered by colors. Awareness about colors is necessary for many places like complementing spaces, architecture, electronic engineering,

advertisement, film, and cinema for an actor or in a workshop. "Human has been involved with colors during all era and used them as well and he tries to recognize and discover color secrets to employ in his life. Also, science development and research experience made different ways to understand colors; in particular, within two recent decades physicists, physiologists, chemists, sociologists, psychologists, and current virtuosos have studied colors and light and some issues related to visuals. Color usage is not something that we can study based on some mathematics values and principles because the principle which applies to use colors as a director is insufficient" (Itten, 1997). It can be shown that the mental impact of colors on man has a mental nature and has influenced by norms and actions, reactions, and people's behavior indirectly. If each factor motivates people mentally is a stimulus for neurotic receivers. Certainly, when a person shows a reaction to behavior that replies to a stimulus that transfers its neurotic receivers to the brain and finally a specific reaction will occur. The effect of color on a human is like the above reaction but it is inappreciable and unaware and, in some cases, semi-unaware. "Indian medicals believe that color is both inner and outer. When color is located on a specific energy level, it has an impact on the human that can influence his mind and body" (Ede, 1990). "Furthermore, another factor that can influence how people perceive a service regards the staff

uniforms. As stated by Solomon (1985) cited in Turley and Milliman (2000), the clothing of the staff can transmit the company's image and goals" (Lebedeva and Maia, 2017). However, the effect of colors on staff is not extreme and immediate. But by any way colors have few impacts on what they will collect during a long time, and they cause to make a significant effect. Of course, color is a ubiquitous phenomenon hiding in plain sight, and in most cases, it is not analyzed seriously (Blaszczyk and Spiekermann, 2017). On the other hand, occupational engagement is a manner related to a mental positive, pleasant, and occupational-oriented mode.

Figure 1 shows the number of published papers onthe topic of occupational engagement from 1997 to 2022 based on the Web of Science (WoS) analysis tool. These papers included different categories, 255 papers in rehabilitation, 55papers in social sciences interdisciplinary, 20 papers in psychiatry, 20 papers in public environmental occupational health, 18 papers in psychology applied, 7 papers in health policy services, 7 papers in psychology educational, 5 papers in education special, 5 papers in gerontology, and 5 papers in health care sciences services. This figure clearly shows that the number of research on occupational engagement in the rehabilitation category is higher than in other categories.

Figure 1: Published papers on occupational engagement topics from 1997 to 2022 based on different categories

Figure 2 shows the number of published papers on occupational engagementtopics from 1997to 2021 based on publication year. This figure clearly shows that numerous research on occupational engagement has been conducted in different years.
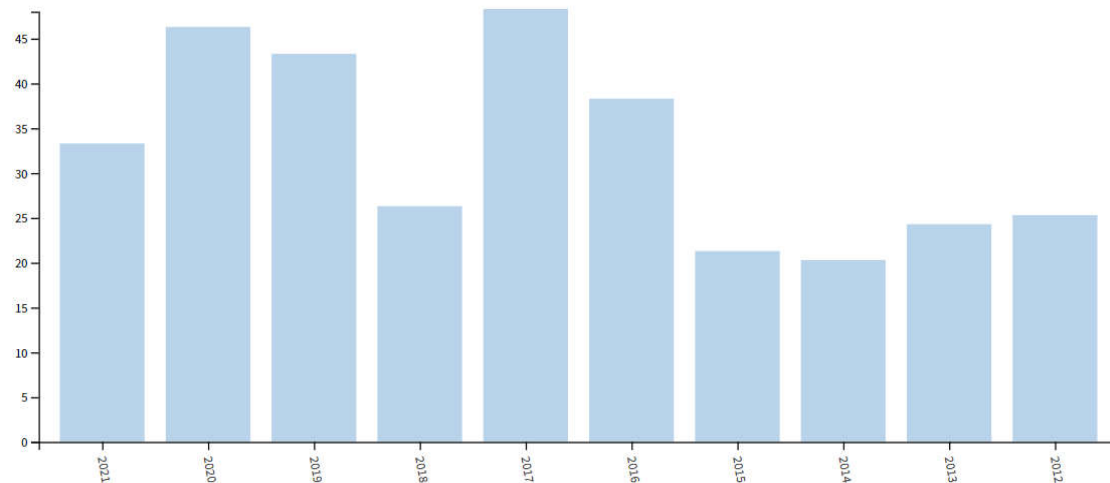

Figure 2: Published papers onoccupational engagementtopics from 1997 to 2021 based on publication year

Also, this research will help significantly to develop colors' role on adornment and safety of the occupational and living environment and its different effects on people's mental and soul who is engaged in that centers. Because those people can be considered as the main affection in an academic community of a country success in creating the culture of color psychology in information center environments and scientific and occupational developments require providing its infrastructures. Cultural and structural infrastructures are the main success factors in scientific fields and academic society should have special attention to this issue. As well as it can help to develop the whole information centers community, academics, and those organizations which engage inthe building and equipment field since they have the best performance on their work and tasks. Libraries and information science centers are some of the associations that seem to have a significant role to create a stable cultural development of a country's people. The existence of libraries in society considers a cultural reference for humans. The role of this cultural reference is to fulfill a tool to make engagement about the study and research people of the society by putting together thoughts, and ideas and gaining innovative ideas. We can't disregard the role of libraries as a cultural association to develop that part. The library is a gate toward knowledge to provide necessary conditions for ongoing learning. Independence decisions and people's cultural improvement and social groups require expert persons with a healthy spirit and fervent. Libraries, as space and the millennial generation, are both social and communal spaces and we should know how to communicate with today's users (Muszkiewicz, 2015). One of the effective factors on that subject is color. Color can have mental positive, negative, or even natural effects on those association staff's soul and performance unaware. The worth of this research and phenomena can be shown here and it states the necessity of using appropriate colors for staffuniforms. When staff uniforms havethe same form and color, and it is chosen with an

eligible color will help both the beauty and regularity of those associations or enhancement of staff's fresh and glad spirit. In conclusion, staff can have the best performance regarding their tasks, and they can do them with much engagement which causes increased organizational efficiency to get along with the development of the scientific community and enhancement of users. It should be noticed that the use of appropriate color on staff uniforms seems to become an unnecessary thing but added that it can have a positive effect on library patrons' attraction amount. It also can impact their mental indirectly and lead to encouragement of people regarding visiting the library to meet their information needs. Finally, it can lead to an increase in people's study capitation delectability. According to what was said, the question is what color can have an impact on the occupational engagement of the public libraries and information centers staff? And accordingly, the hypothesis of this study can be expressed as follows: The staff`s uniform color of the public libraries and information centers has a psychological effect on their occupational engagement.

LITERATURE REVIEW

According to Gibbons's (2006) study, job engagement is an emotional and intelligent relationship that an employee keeps with his/her job, organization, manager, and co-workers and will influence his binary job performance efforts. He believes when workers feel mentally and emotionally connected to their jobs, they are willing to apply discretionary effort to help their company succeed. There have been diffuse and few studies about the effect of color on experts 'and organization staff's job engagement as regards no study has been done on the subject professionally likewise this subject is kept in absolute.

Wohlfarth (1986) used a quasi-experimental control group to investigate the effects of full-spectrum light, prescribed color, combinations of light and color, ultraviolet light, and electromagnetic radiation. The results of this study support the request for additional field and laboratory research on the effects of color,

light, and color / light composition. In a study, Bellizzi and Hite (1992) tested the effects of red and blue in a shopping-related context. Research showed that red has a negative effect and blue has a calming effect. In both experimental environments, retail environments were simulated using predominantly red or blue colors. The results of this study showed that effective perception of color instead of color excitation dimension may affect the result. In another study by Lind (1993), two groups of people were tested. One group was university students and the other was not a student. These people participated in experiments to examine the similarities between color preferences as an abstract concept and color preferences for clothing. The results showed that blue and purple were the two preferred colors over other colors. The findings showed the effect of biological and social factors on color preferences. Sadeghipur (1999), in their study, selected the color space suitable for teaching. He identified the painting classes according to the preferences of the students, which have been effective in their improving academic achievement. The progression rate of the control group was about 80%. Also, the students' compatibility in this class was higher compared with the control group. These findings indicated that the painting classes according to the preferences of the students, increased the motivation, and engagement level of students in the classroom and is also effective in increasing rates of intelligence and precision. Also, Scargall (1999) discussed the appropriate use of colors in school libraries. Highlights included how colors affect students' learning and behavior; influence users' moods; users' ages; the use of colors to bring out the best physical attributes; and the use of color for floor coverings, window treatments, furnishings, and accessories. He suggested that use some colors for school libraries. He suggested for elementary school, use some shadows of blue, red, and yellow. Blue, green, and gray are suggested for middle school because libraries in these schools make more visual and mental relations. Shin, Yaguchi, and Shioiri (2004) used a laparoscopic color matching technique to examine the appearance of color at different levels of brightness. In this study, they used photopic to scotopic and

mesopic surfaces. The results of this study showed that not only color and brightness, but also the color of most color chips change with brightness. These results provide important features that should be considered in predicting the appearance of color at low light levels. Mehta and Zhu (2009) in their study examined the effect of color on the performance of cognitive tasks. They made conflicting findings in this study regarding the effect of color. Some results show that blue or green has a better effect than red. Some previous studies have reported the opposite. However, the results of this study show that red versus blue primarily evokes avoidance motivation, and blue enhances the performance of creative work. Elliot and Maier (2014) investigated the effects of colors on human psychological performance. The results of their study showed that color can have an important meaning and an important impact on human cognition and behavior. Tavakoli, Asemi, and Neshatdoost (2015) and Tavakoli, Asemi, and Tavakoli (2016) studied the psychological effect of the staff's uniform color at public libraries on their mental health. Gorton (2017) answered the question that "Is Wall Color Significant to Museum Visitors?" He examined the color of the wall of an exhibition that was visible to visitors. His study was quasi-experimental. Considered two treatment conditions. One included a bright yellow wall in the exhibition and white for the control group. The results showed that there was no difference between the two groups in terms of the time spent visiting. Dijkstraet al (2018) conducted an extensive study on the effect of athletes' clothing color on their mental performance. They looked at the effect of clothing color on an athlete's chances of winning a sporting event. According to the results of this study, the color of the athlete's clothes has little to do with their athletic performance. Their findings show that winning with a blue suit has no effect on the sport of judo, and a blue-and-white suit ensures an equal level of play in judo.Goldschmied and Lucena (2021) and Goldschmied et al (2021) had a critical review on the relationship of uniform

colors to performance in sports. They reviewed studies related to colors and functions and identified 33 studies in the field of exercise. After reviewing these studies, they concluded that the evidence of uniform colors influencing the outcome of sports competitions is weak. They suggested that more research was needed to investigate further.

The literature review shows that we can receive appropriate effects by colors based on specific parameters and use them to adjust various excitements and feelings. Excitements and feelings affect a person's physical balance. Therefore, the usage of colors based on a particular place and time conditions has a significant effect on educational and training environments. Thus, researchers have studied the mental effect of color on occupational engagement based on those kinds of impacts of this research. Studies about color usage in libraries have not done a serious study about librarians' uniform color with the approach of color psychology among staff and designers of information science centers and libraries or Iran higher education institutes. Thus, the recent research tried to survey this issue among information science experts and information centers staffs, and public libraries. Designers should have a correct and comprehensive recognition of the color psychology concept. It can help to arrange or make fundamental changes to strategies and policies in designing library and information science centers.

MATERIALS & METHODS

This study was an applied study based on quasi-experimental and is associated with pretest, protest, control group, and experimental. A statistical sample of this study was comprised of the Iran Public Library Foundation, Isfahan a total of 30 people was selected for accessible sampling. The sample was randomly selected and assigned to two exam groups such experimental group (N=15) and the control group (N=15).

Table 1: Overview of Research

Group	The sample size	Pre-test	Applying independent variables (Change the color of the uniform)	Post-test

Experimental	15	T_1	X	T_2
Control	15	T_1	——	T_2

Research tools consisted of Utrecht Work Engagement Questionnaire. Also, the researcher made a questionnaire used to collect demographic information. The findings were analyzed by SPSS/PC version 22 in two levels descriptive and statistical. Covariance analysis was used in the inferential analysis of the research hypothesis.

Table 2: Data Collection Tools

No.	Data Collection tools (Questionnaire)	Aim
1	Utrecht Work Engagement Questionnaire	Investigate Occupational Engagement, Devoted to the Work and Attraction at Work
2	Demographic Questionnaire	Investigate Demographic Information: Gender, marital status, age, education, profession, employment status, place of work (the activities of staff), work experience

Research Approach
The study population included the library staff at "Iran Public Library Foundation, Isfahan" which 30 persons out of 40, were able to cooperate in the research. The staff centers were working in different units. They were divided into two groups control and experimental randomly. In this case, there are 15 persons from various units for the control group and 15 persons from other units for the test group. A pre-test has been done on both of control and test group after the replacement of people. Then the uniform color of the test group has been changed to lemon and light blue. The reason for choosing this color was that based on the previous studies and literature review, yellow is one of the most energy-intensive colors that make youthful, vibrant, and young. The blue color also has vivacity and movement. On the other hand, according to Iranian government rules, employees are not allowed to use any color for their uniforms in the office place. The colors that male and female employees can use are limited. In addition, research economic problems have prevented to use of other colors in the experiment. Finally, a post-test also has been done for both groups of control and test. It should be noticed that the study has been done in a controlled environment to not make a dictation condition for staff. As changing of staff uniform color circularized such a circular by management to the staff centers. Also, it mentioned in the circular that currently the staff changing color uniform of this phase has been holding. (Phases that will consider by the researcher) and it will do in the next phases during the next few days. Therefore, the staff didn't understand anything about the fact and changing of color and it won't seem to dictation conditions the research has been done in a completely natural mode and its results are real. Figure 3 shows different steps of the conduct of research.
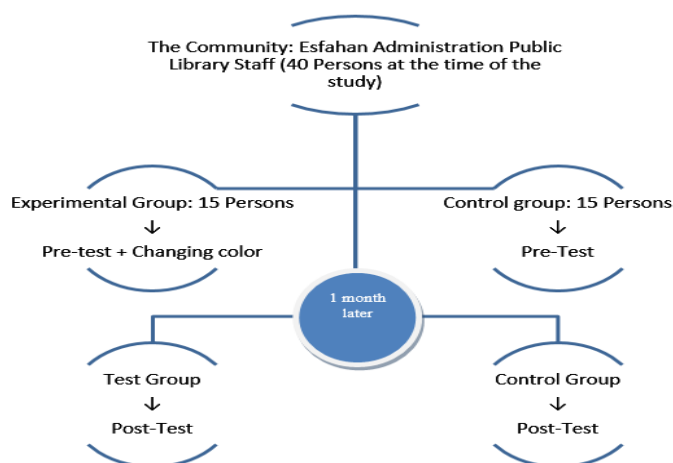
Figure 3: The Conduct of Research

FINDINGS

This research description finding includes the statistical average indicator and standard deviation. We utilized the Kolmogorov-Smirnov test to study normal data, the Leven test to study the homology of variance, and the Box's M test to survey correlation homology. There are different multivariate test criteria; in this case, we used Wilks' Lambda, Pillai-Bartlett Trace, Hotelling-Lawley Trace, and Roy's Largest Root test to compare the difference of dependence variables. The variance data analysis test has been used to compute data regarding the assurance of parametric default tests. The co-variance analysis exam has been used on that hypothesis that requires controlling of random variable trace and the multivariable co-variance analysis method has been used on the hypothesis that requires surveying about dependence variable trace simultaneously when there are two or more dependence variables. The results of descriptive statistical indicators, such as mean, standard deviation, and the number of subjects in the sample for all variables are presented in Table 3. It is noteworthy, that the results showed that none of the demographic variables had a significant effect on the dependent variables.

Table 3: The Mean and Standard Deviation Grades of Pre-Test and Post-Test of Occupational engagement

			Pre-test		Post-test	
Variable	**Group**	**N**	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**
Occupational engagement	experimental	15	32.86	12.31	67.93	7.26
	Control	15	58.86	19.63	62.53	17.79

As is shown in table 3; average scores of occupational engagements of post-test of the experimental group increased as compared to pre-test; however occupational engagement scores don't increase in the control group. To investigate the statistical hypothesis, multivariate covariance analysis was used the results come in Table 4.

Table 4: Multivariate Covariance Analysis of Occupational Engagement in both Experimental and Control Groups at Post-Test

Variable	Sum of Squares	Degrees of Freedom (DF)	Mean Square	F	Significance level of P	Eta Square	Statistical Power
Occupational engagement	1198.95	1	1198.95	14.81	0.001	0.37	0.59

As is shown in table 4; it can be observed that after a cancellation (deletion) of the pre-test,itseffects on the independent variable, and based on computerized coefficient f: There is a difference among participations that belong to the experimental and control group for adjusted average scores of occupational engagements in pre-test phase (P>0.05, F=14.81). Thus, the hypothesis was confirmed by variable occupational engagement. Uniform color changing of the staff`s public libraries and information centers affects their occupational engagement. The amount of effect in the post-test is 37% (Figure 4).
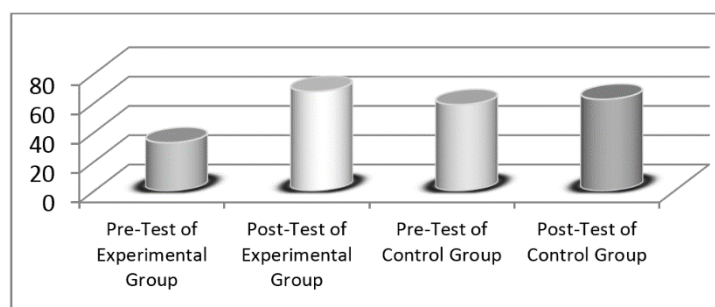

Figure 4: The mean changes of two groups in feature of occupational engagement

DISCUSSION AND CONCLUSION

This study has been done on the affection of the mental effect of color on staff uniforms to recognize information science centers and public libraries' staff's occupational engagement. Occupational engagement is defined as fervency to do occupational tasks, amortization with occupational and occupational appeal, and commitment. One of the small features of the occupational engagement scale is high-level energy, flexibility during working, engagement in hard work, and resistance to facing difficult conditions. The small features of the amortization scale consist of importance meaning, enthusiasm, inspiration and innovation, and pride and challenge. The features of occupational appeal are an absolute focus on the occupational and merge with it deeply. The results of this research hypothesis are that staff changing uniform color influences staff occupational engagement. However, according to data analysis of information science and public libraries thus staff changing uniform color has a positive effect on their occupational engagement because of yellow (lemon) and blue (light blue) color breezy feature which has been selected for staff uniform. Whereas changing color influences their occupational engagement, and it can be explained logically that has a positive effect on their occupational engagement because it can possible that the person has low occupational performance but has a high engagement to do his occupational tasks. Also, the selected color probably is appropriate for their mood, and it causes to improve their self-confidence and subsequently, increases occupational engagement. As well as it is concluded that color-changing or selected colors (lemon and light blue) is a stimulant factor in their occupational engagement. It can be noticed that because of the occupational nature of

centers thus changing color has a positive effect on staff occupational engagement. There have not been found scholars who coincide with this study, but it has been coordinated with Sadeghipur (1999) and Wohlfarth (1986). We explained the effect of appropriate color on making the motivation for study and behavior in this paper. Sadeghipur (1999) explained that choosing a desirable color in training environments and places like painting the color of class walls based on students' preferences can have meaningful education growth among them. Shin, Yaguchi, & Shioiri (2004) and Wohlfarth (1986) stated that the existence of class color influences students' behavior, and it leads to significant psychological changes in them. One of the research limitations is people's various engagements and reactions toward selected colors by the researcher. We also pay attention that a chosen color can have hurt or pleasure affection temporarily or forever. We can't consider colors affection as human mind and feelings thus it can be suggested that use breezy and beautiful colors like yellow, blue, and green as appropriate and pretty colors still regarding studies that are similar or close to this paper. Additionally, it offered that the staff's uniform and its color should select according to the staff's engagement, and it does not make each limitation for them about its color. For instance, we can suggest to them three colors because maybe they are bored with their current uniform, or it becomes dirty that they can use another color and uniform. According to this paper's results and as compared to other research results on color psychology, therefore, we present further suggestions for future works. The researchers could replicate our research with other colors; this research has been done with changing on human factor; others can do it based on an environmental factor like changing the color of inner decoration; the research population included the library staff at "Iran Public Library Foundation, Isfahan", other researchers can do this research on the other population. We studied the effect of staff's changing uniform color on their occupational engagement, and it is possible to study color affection in the other aspects. We used Utrecht's Work Engagement Questionnaire others can use another tool to do this research.

Declarations

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