INFLUENCE OF THE WORKING ENVIRONMENT ON SAFETY AND HEALTH PROTECTION AT WORK AND PERFORMANCE OF THE EMPLOYEES IN AN OFFICE SPACE

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Abstract: *Currently, most employers ignore the fact that colors affect the behavior and thinking of employees in the work process. Workers are austere, colors, and they are places where employees only routinely perform tasks. In such an environment, employees can not feel good, do the best they can and work safely. It is important for employers to realize that by creating suitable working conditions they will help their employees to better manage their job tasks. Their performance will improve, they will work safely and significantly help in the development of society. The article deals with experiments that deal with the performance of test people who perform specific activities with different color backgrounds. This section evaluates the measured values and determines which colors affect the lowest performance, which colors are disturbing and cause many mistakes, human workplace problems, which can lead to arguments or even aggression. But also which colors can help achieve the highest efficiency that positively affect staff performance, support thinking and develop creativity, improve relationships and create a comfortable atmosphere.*

Keywords: SAFETY, PERFORMANCE, INFLUENCE OF THE COLOURS, WORKPLACE

1. Introduction

Workplace injury and illness account for a substantial source of sickness and disability burden in working-age populations. (Lay, 2010). People spend a significant part of a day at the working place and for delivering the best possible performance it is necessary to feel nice, to be all right, not to be distracted, not to feel disturbed or negative. It is colours that have the essential influence on all of these factors. It matters in what kind of environment the employee Works (Gilks, 2010). Studies and different surveys and researches proved that not all colours are suitable for each kind of work. If the emloyees should perform their best, it is necessary to adjust their working environment, including choosing the most suitable colour combination. The article deals with an experiment which looks at performance of the tested people doing particular activities with an influence of different colour backgrounds. This part evaluates the measured values and defines which colours influence the lowest performance, which colours are disturbing and cause making a lot of mistakes, interpersonal problems at the working place, which can result in arguments or even aggression. But also, which colours can help reach the highest effectivity, which positively influence the performance of the employees, support thinking and develop creativity, improve the relationships and create a pleasant atmosphere.

2. Working environment

Working space and its surroundings influence potential or current employees. It influences the performance to a great degree, number of mistakes made, it reduces or minimalizes extreme workload, exhaustion, illnesses and work injuries. Design, structure, suitable ergonomic conditions, safety management and health protection system are listed among the most important factors that make the company development possible. Management trends highlight international standards, sucha s quality management system, safety and health protection or environment protection (Hrehová, 2011).

Space, where machinery, devices, different tools, objects designed for performing the tasks of employees are placed, is called a work space. It can be a space where production or administrative activities are performed. Employees are integrated into a particular working environment on basis of their abilities and skills. It comprises of different factors of social, material and general conditions for work activities (Pikala, 1976).

One of the key factors when choosing a job is the working environment. Its positive or negative factors influence the behaviour, mood but most of all, people´s health and work. (Oravec, 2007). That is why it is extremely essential that the emloyers design and create a suitable atmosphere and space for work for all subordinates in their company and also aim at suitable physical, organisational, hygienic, aesthetic, socio-psychological conditions and also safety and health protection conditions (Hrehová, 2011).

Working environment influences people by its factors:

- physical: microclimatic conditions, radiation, air temperature, relative humidity, ventilation, lighting, noise, vibration, colour design of the environment,
- chemical: cigarette smoke, formaldehyds, volatile substances, biocides and other gaseous matters,
- biological: insects, viruses, bacteria, fungi, biological alergens etc.
- socio-psychological: motivation to work, kind of work, way of work organisation, relationships at work, communication (Hrehová, 2011).

Eventhough people feel and evaluate well-being in a complex way, they use individual senses so specifically that we can distinguish different kinds of well-being:

- sound (acoustic) – set limits for noise expositions for particular activities are not exceeded,
- optical – includes the illimunation of the surface, quality of illumination (blinding glare, stability, regularity), phototrophic influences (encouragement or attenuation), artistic aesthetic feeling, especially that of colour design,
- thermal – influenced by heating and ventilation, air-conditioning and air humidity,
- clean air – elimination of intensive odours, smells, dust, pathogenic germs, cigarette smoke, sweat,
- psychological – dependant on factors: physical health, physical or intelectual performance and social relationships (Hrehová, 2011).

When choosing a colour, it is necessary to take into account especially sex and age of the workers, temperature of the environment, possibilities of lighting, whether it is artificial lighting or natural light, the size of working zones as well as the kind of work in question (Hrehová, 2011).

Meanings of choosing a colour:

Functional meaning – this means using colours for fast orientation of an employee in the working space and for reliable handling of the necessary operations. It also contributes to creation of working atmosphere needed for performing the work.

Safety meaning – in the area of safety and health protection it is applied in form of colour markings, where blue colour means an order, yellow signals warning, red represents prohibition or danger and green colour marks escape ways.

Aesthetic meaning – colour desing of the working space contributes to creating working comfort for the empoyees.
Economic meaning – productivity is increased and number of injuries decreased. Some surveys show performance increase of 25 %. Sometimes, even higher numbers are listed. The fact is, that this influence exists and demonstartes itself (Berry, 1998) .

3. Legal framework of the European Union related to factors at work

Given safety regulations, rules and principles must be followed during working activites, occupations or jobs. What results from the legal regulations is (see Table 1), that one of the basic obligations of the employers is to protect and maintain good health condition of their employees, make prevention measurements regularly, so that there are no accidents at work and health deterioration and job-related illnesses do not occur. All working individuals have a right to know all the risks which can endanger them during performing of their work and must attend the necessary trainings.

Table 1: *Regal regulations of the EU related to factors at work*

Directive EÚ
89/391/EHS
European framework directive about implementation of measurements to support the improvement of safety and health protection of the employees at work. The aim of the dierctive is to set an equal level of safety and health protection for all emploees. It guarantees the minimal requirements for safety and health protection in the whole Europe (Council Directive, 89/391/EEC).
2003/10/ES
Directive about minimal health and safety requirements regarding the risks resulting from exposing employees to physical influences (noise). The aim is to decrease the risks resulting from exposition of employees to noise (Directive, 2003/10/EC).

4. Theory of colours

The word colour has many definitions. From the physical point of view, colour is a visible area of the electromagnetic radiation with wavelenghts of 380 – 730 nm, see picture no. 2. If a ray of particular wavelenght falls onto the eye, it causes a stimulus in it on basis of which a perception of colour is created in brain (Kvasňovský, 2010).

Cells in retina are receptors of light which change light signal into perception in neurons and are called rod cells and cone cells. Rod cells are responsible for perception of light and cone cells for distinguishing of colours (Woodson, 1992).

Blue, green and red are the primary, or basic colours. Some authors list yellow to the primary colours as well. If we mix two primary colours, we get a secundary colour. Tercial colour is created by mixing primary and secondary colours. It is suitable to combine all primary, secondary and tercial colours with neutral colours like white, black, grey and beige (www.suvke.sk).

Color scale divides colours to:

- warm colours, which are in the right half of the colour circle,
- cold colours, which are in the left half of the circle, (see Fig. 1).

Fig 1*: Colour circle (www.suvke.sk)*

Warm colours in the right half are suitable for smaller spaces, they will make them look bigger and give them more light. They create a pleasant and optimum atmosphere for higher work performance of the employees.

Cold colours in the left half of the circle are suitable for large areas which we do not need to make optically bigger. They support positive thinking and creativity of the employees. They will stimulate a sense of authority, seriousness, inteligence and development of the company, organisation or firm (www.suvke.sk).

Colour models

Colour model describes primary colours and schemes of mixing these colours to the final colour. Colour in the nature is a mixture of light of different wavelenghts and various colour models try to imitate the colour in the best possible way. We use models that are a suitable compromise between accuracy of the colour image and complexity of the particular model (Kvasňovský, 2010).

RGB colour model

It is a model in which each colour is created with a proportion of red (R), green (G) and blue (B) colour. These colours are primary for RGB model. Colours are mixed additively in this model. By adding a particular element a lighter colour is created. If all of them are added, white colour comes out. A combination of green and blue makes turquoise (cyan – C), red and blue make purple (magenta – M). And last but not least, if green and red are mixed yellow comes out (yellow – Y). This means that by combination of the basic colours of RGB additive mixing, basic colours for opposite subtractional mixing CMY are created, see Fig. 2. RGB model is used for televisions, monitors and screens. The screen of the televisions comprises of densely squashed red, green and blue points (www.suvke.sk).

Table 2*: Colours*

Red	Green	Blue
R	G	B

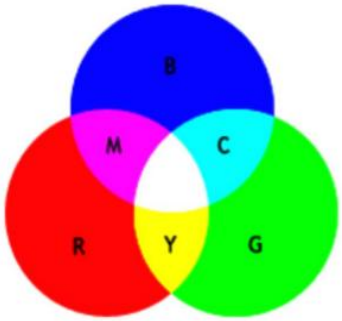

Fig 2*: GB model (www.suvke.sk)*

CMY/CMYK Colour model

With this colour model, each colour can be created by a proportion of turquoise (cyan – C), pink (magenta – M), yellow (yellow - Y). These colours are the basis for CMYK model. The colours come from reflected light and are mixed substractively. By adding a particular element, we get a darker colour. If all are added, black comes out. This kind of mixing is used in painting. It is suitable to use this model for printing purposes but from practical reasons it is necessary to include black colour (black - K), that is CMYK (Kvasňovský, 2010).

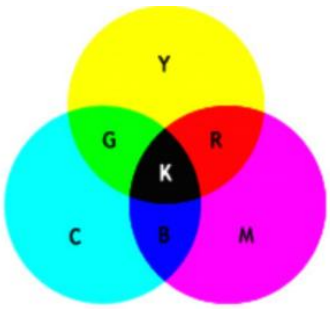

***Fig 3**: CMYK model (www.suvke.sk)*

5. Material and methods

Many studies dealt and deal with a question of how colours affect the working environment.

A study of how a colour can have a positive effect on someone´s psychic, which is not that known, is called "pink prison experiment" and is from the late seventies of the 20th century. According to the study, the prisoners in Seattle and Washington were placed in bright pink cells where they showed less agressive behaviour and characteristics. This result was accepted and quickly spread to many prisons in the USA and Canada. But when the same experiment was repeated several years later by a researcher from Canadian university, it did not have the same result. The new conclusion was that the change of colour generates less aggressive effects (www.informedesing.org).

Nancy Kwallek, a researcher from Texas University tested the influence of colours on the productivity of employees. A chosen group of people was to solve a given task in three different rooms which were painted with different colours. The first room was paited white, second red and third was cyan. The tested employees were divided into two groups on basis of the results of the experiment. The first group comprised of so called high-screeners, which means highly resistant employees and the second group comprised of so called low-screeners, employees of low resistance. Colour did not have and influence on the first group. The second group was significantly affected by colours. The first group, the high-screeners, did not have any problem with dealing with the task in the red room. The second group was disturbed by the red colour. Both groups made the biggest number of errors in the white room. Best results were reached in the cyan room by both groups (www.informedesing.org).

The newest studies by Konica Minolta proved that blue colour can partially negatively influence the mood.

***Table 3:** Influence of colours research (Hrehová, 2011)*

Colour	Positives	Negatives
Blue	Positive mood of the employees working in the blue environment was 72% lower to those of different colour.	Employees had a negative perception of their work and leisure time proportion (64%).
Yellow	85% of the interviewed listed that they feel more energy and can focus on work better. Psychological well-being of employees working in yellow environment was 72% higher.	No significantly negative effects of this colour were proved.
Red	Employees felt more motivated by their colleagues (58%), managers (43%) and feedback (30%). It is suitable for team work.	Some listed that they felt irritated in a red office.
Grey	It is an ideal choice for a administrative or office environment.	A majority of responderts (52%) had a lower performance. It is boring and inexpressive.
Black	Perception of motivation in a form of financial reward and professional growth was 40% higher.	It gives an impression of a meeting room and respondents felt strict and relentless.

6. Aims, construction and preparation of an experiment

The aim of the experiment is to find out how certain chosen colours affect the person´s performance during their working activity.

A group of chosen individuals was asked to reach the highest possible score while playing an online game. Before starting the game, a respondent looks at a chosen colour for a period of 60 seconds. After this period is over, the game starts. During playing the game, the participant observes the chosen colour.

A group of 20 participants was chosen for the experiment. It is a group of homogenous age (20-25 year-olds). Each person was informed in detail about the course of the experiment.

The experiment took place in a room where all participants had equal conditions for making the experiment.

The temperature in the room was 22°C. They also had adequate lighting. Each participant was wearing a so called eliminator on their eyes, through which they could only see the monitor.

In the beginning of the article, the characteristics of particular colours are described. As red, green, blue, white, orange/yellow and black colour have significant characteristics, they are the subject of the experiment.

Schematic representation of the experiment

The picture (see Fig. 4) shows the preparation, implementation and evaluation of the experiment.

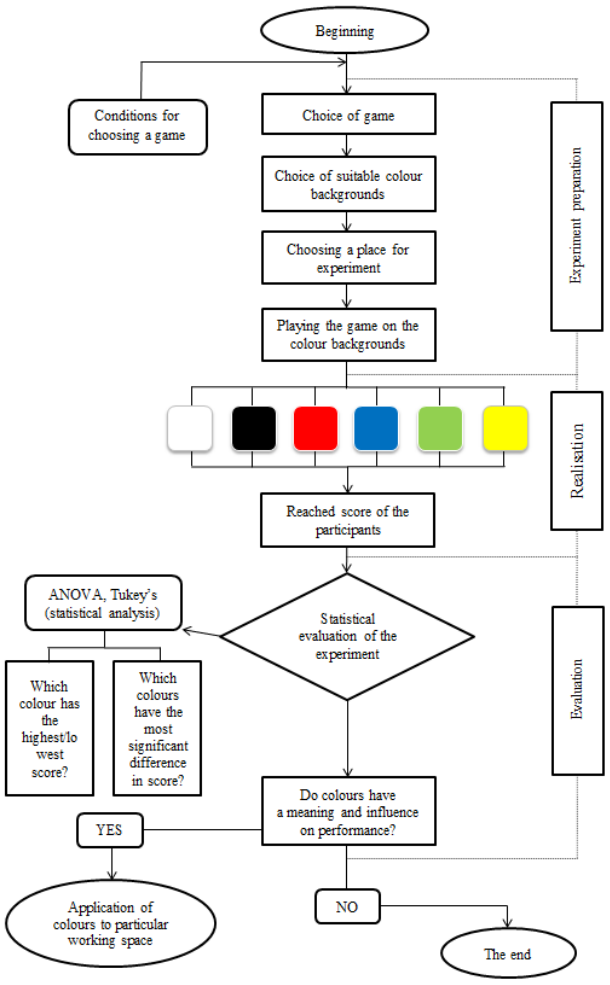

***Fig 4**: Schematic Picture of the experiment*

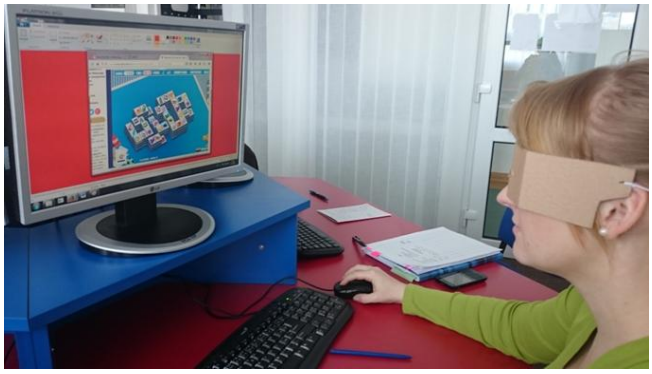

***Fig 5**: Red background*

Reached score with particular colour backgrounds

In table 4, a reached score of twenty students is listed. They played the chosen game with a white, red, blue, green and yellow backgroung.

***Table 4:** Reached score*

	White	Black	Red	Blue	Green	Yellow
Student 1	5478	4698	5420	6544	8136	5661
Student 2	7742	6159	7218	7053	6494	7461
Student 3	4638	4197	4655	6281	6935	6523
Student 4	3490	5233	5786	6454	6935	6523
Student 5	3404	4616	5588	6245	6428	5624
Student 6	4661	4788	4472	5928	6294	6792
Student 7	4830	7646	7626	6878	7010	7491
Student 8	5014	5285	6537	5844	6603	7276
Student 9	4386	4880	6344	6829	6669	5935
Student 10	3792	4096	6274	6340	7823	6065
Student 11	4383	4753	5429	7262	4131	6894
Student 12	4180	4845	6882	4817	6391	7217
Student 13	7754	6920	6754	6876	7702	6868
Student 14	5622	6473	6595	5885	6083	6908
Student 15	5292	6692	5779	8455	7470	7553
Student 16	3686	5644	6190	6676	6039	6376
Student 17	5715	5375	5782	5428	6872	5356
Student 18	7777	5445	6213	8016	6990	6360
Student 19	4787	4657	4277	5623	6034	5992
Student 20	6758	5651	6601	7566	6228	7802

7. Analysis and experiment evaluation

Risks are omnipresent in most human activities. Risk analysis helps to establish the level of risk of a given situation, and to determine if the risk is acceptable, tolerable or unaceptable. (Tchiehe, 2017). After realisation of the experiment and collection of data and reached scores of the tested students, an evaluation follows. A right choice of suitable analysis is important for evaluating of the measured figures. It is also necessary to set hypothesis which will be tested by a suitable analysis. Statistical analysis will prove or deny whether there are differences in the reached score among the various colour backgrounds. If it is proved, then it will be necessary to find out which colours have the biggest difference. By proving the differences among the reached scores with individual colour backgrounds, we can assume that colours can influence performance of employees at work.

Method ANOVA was chosen for evaluation of the experiment. All statistical counting were realised in Excel 2007 - Microsoft Office.

We call method ANOVA an analysis of dispersion. It looks at relation between interval variable Y (reached score) and one or more nominal variables X, these are factors (individual colour backgrounds). (Knežo, 2011). It is necessary to find out whether the reached scores of tested persons (Y) is in relation to individual colour backgrounds (X). The file is divided into groups according to individual factors and it is tested whether the measured differences in score among the colours are only a coincidence or whether they are also statistically relevant. If the average of the groups is significantly different, the factor is statistically significant. That means that the variable X (score) really depends on the factor (colour). If it is proved that average scores among individual colours are significatnly different, it is necessary to find out between which colours are the differences the biggest. Post hoc analysis is used for it. There is a wide range of Post hoc tests but in this case, Tukey´s test is suitable. The subject-matter of the test is comparison of all possible pairs of colours and substantial differences analysis (Markechová, 2011).

So that we can use the analysis of dispersion, we need to meet the following conditions:

- the measured file must come from normal division (Shapiro-Wilk's test of normality),
- the same measured file must meet the homogenity of dispersion (Cochran's test)

Proving or denying of conditions needed for fulfiling analysis of dispersion

Shapiro-Wilk's test was used for proving the conditions of normality. For correct condition check, i tis necessary to set suitable hypothesis H_0 and H_1.

Hypothesis statement:

- H_0: The measured scores of the tested participants come from normal division.
- H_1: The measured scores of the tested participants do not come from normal division.

In tab. 5 to tab. 10 measured values are compared according to relevant test formula using Excel programe and table critical values at significance level of $\alpha = 0{,}01$ a n=20 (file extent, number of tested participants).

$$W \leq W_{\alpha}(n) \qquad (1)$$

where:
W – counted value according to tested characteristics for counting normality
$W_{\alpha}(n)$ - table critical value for Shapiro-Wilk´s test of normality
α - the level of significance
n - file extent

***Table 5:** Normality test for white colour*

	Shapiro-Wilk's test		Hypothesis H_0 is not valid, if
	Measured value W according to formula (5)	Table critical value $W_{0,01}$ (20)	$W \leq W_{0,01}$ (20) (the calculated value is smaller or the same as the table critical value)
White background	0,893	0,868	The equasion not proved, H_0 denied, measured score values with white background come from normal division. Condition fulfilled.

***Table 6:** Normality test for black colour*

	Shapiro-Wilk's test		Hypothesis H_0 is not valid, if
	Measured value W according to formula (5)	Table critical value $W_{0,01}$ (20)	$W \leq W_{0,01}$ (20) (the calculated value is smaller or the same as the table critical value)
Black background	0,928	0,868	The equasion not proved, H_0 denied, measured score values with black background come from normal division. Condition fulfilled.

Table 7: *Normality test for red colour*

	Shapiro-Wilk's test		Hypothesis H_0 is not valid, if
Red background	Measured value W according to formula (5)	Table critical value $W_{0,01}$ (20)	$W \leq W_{0,01}$ (20) (the calculated value is smaller or the same as the table critical value)
	0,967	0,868	The equasion not proved, H_0 denied, measured score values with red background come from normal division. Condition fulfilled.

Table 8: *Normality test for blue colour*

	Shapiro-Wilk's test		Hypothesis H_0 is not valid, if
Blue background	Measured value W according to formula (5)	Table critical value $W_{0,01}$ (20)	$W \leq W_{0,01}$ (20) (the calculated value is smaller or the same as the table critical value)
	0,987	0,868	The equasion not proved, H_0 denied, measured score values with blue background come from normal division. Condition fulfilled.

Table 9: *Normality test for green colour*

	Shapiro-Wilk's test		Hypothesis H_0 is not valid, if
Green background	Measured value W according to formula (5)	Table critical value $W_{0,01}$ (20)	$W \leq W_{0,01}$ (20) (the calculated value is smaller or the same as the table critical value)
	0,902	0,868	The equasion not proved, H_0 denied, measured score values with green background come from normal division. Condition fulfilled.

Table 10: *Normality test for yellow colour*

	Shapiro-Wilk's test		Hypothesis H_0 is not valid, if
Yellow background	Measured value W according to formula (5)	Table critical value $W_{0,01}$ (20)	$W \leq W_{0,01}$ (20) (the calculated value is smaller or the same as the table critical value)
	0,952	0,868	The equasion not proved, H_0 denied, measured score values with yellow background come from normal division. Condition fulfilled.

From table 5 – 10, i tis clear that the first condition for all measured values of the colour backgrounds was fullfiled.
For proving the homogenity condition, we used Cochran's test. For correct condition check, i tis necessary to set suitable hypothesis H_0 and H_1.
Hypothesis statement:

- H_0: The measured scores of the tested participants fulfill the condition of homogenity.
- H_1: The measured scores of the tested participants do not fulfill the condition of homogenity.

$$C \leq c_{\alpha}(k, n-1) \qquad (2)$$

where:
C - value measured according to tested characteristics for counting homogenity
c_{α}(k, n-1) - table critical value for Cochran´s test
α - the level of significance
n - file extent

Table 11*: Homogenity test*

Cochran's test		Hypothesis H_0 is not valid, if
Measured value C according to formula (6)	Table critical value $C_{0,01}$ (6,19)	$C \leq C_{0,01}$ (6,19) (the calculated value is the greater or the same as the table critical value)
0,33	0,36	The equasion not proved, H_0 denied, readings scores in all color requested meets the requirements of homogenity.

Table 11., proves that the second condition was fulfilled, too. That means it is possible to do analysis of dispersion ANOVA.

Use of ANOVA method
The aim of the method is to prove or deny whether individual colour backgrounds have an effect on the reached score of the tested participants.
Hypothesis statement:

- H_0: Differences among measured scores among various colours are coincidental (colours do not have an influence on the score).
- H_1: Differences among measured scores and various colours are statistically significant (colours do have an influence on the score).

$$F > F_{1-\alpha}(k-1, n-k) \qquad (3)$$

where
F – measured value according to the tested characteristics
F › $F_{1-\alpha}$ (k-1,n-k) - table critical value for ANOVA
α - the level of significance
n - file extent
k - number of classes

Table 12*: Analysis of colour influence*

ANOVA		Hypothesis H_0 is not valid, if
Measured value F according to formula (7)	$F_{0,01}$ (5,14)	$F \leq F_{0,99}$ (5,14) (the calculated value is the greater as the table critical value)
8,795	3,182	The equasion not proved, H_0 denied, readings scores in colored backgrounds they are statistically significant, the colors affect the score obtained by the test subjects .

It is clear from Tab. 12, that statistical analysis proved influence of individual colour backgrounds, which were set during the realisation of the experiment, on the reached score of the students. It is necessary to find out where the difference in colour sticks out the most, that is compare all possible pairs of colours by using Post hoc analysis.

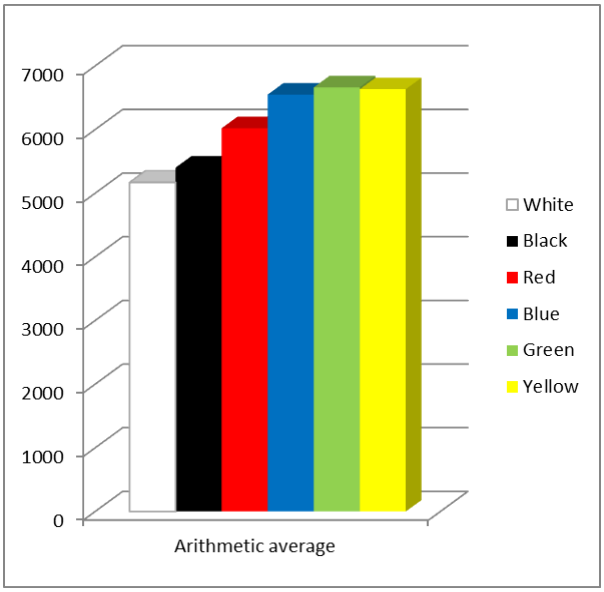

***Fig. 6**: Graphical Picture of average scores for individual colours*

Arithmetic averages of reached scores for colour backgrounds are graphically pictured on Fig. 6. It is clear, that the highest average was reached by playing the game with a green background. It can be a result of the fact that human eye perceives this colour the most. Looking at green colour strengthens thinking which can have a very positive effect on increasing of the employees performance. Yellow colour came second. From theoretical knowledge it is known that it supports creativity, is a source of energy and has a significantly stimulating effect. Blue colour is third. It supports communicative skills and has a calming effect. Green, yellow and blue have the highest score according to the experiment. Based on reached score, red colour follows. In general, it decreases tiredness, increases energy levels, but is a colour with which we need to deal carefully. It can have a positive effect, but also negative or even aggressive one. The lowest score was reached with white and black background. Based on the measurements from the experiment and theoretical knowledge it is possible to propose colour plan for changing colours during the working hours, see chapter 6.3.

Use of Post hoc analysis

A suitable Post hoc analysis for evaluation of the experiment is Tukey's test, which will check the biggest differences in reached scores among the colour backgrounds.

Hypothesis statement:

- H_0: There is no significant difference in score among individual colours (scores are equal).
- H_1: There is a significant difference in score among individual colours (scores differ).

$$T > t_y(r, n-r) \qquad (4)$$

where:

T – measured value according to tested characteristics

t_y(r,n - r) – table critical value for Tukey´s test of ultiple comparison

r – number of classes

n – file extent

Post hoc analysis showed the most significant differences of the measured scores for individual colours, see Tab. 13.

The most significant differences in scores are between these pairs of colours:

- white and blue,
- white and yellow,
- white and green,
- black and blue,
- black and green,
- black and yellow.

Conclusion

In relation between colour, performance and safety at the working place, we can define colour as danger. That means its features can potentially cause undesired effect or event in case of wrong choice. Initiator of this event could be stress, tiredness, and unfavourable working conditions, especially insufficient lighting of the working place. If colour design of the working place is wrong and initiators are not avoided, an undesired event can occur. This could result in performance decline, health deterioration of the employee, injury or property damage.

The objective of the experiment is to show that colours have an ability to influence employees when performing their work.

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***Table 13**: Post hoc analysis check*

Tukey's test				
Colour pair compared		Measured value T according to formula (8)	Table critical value $t_{0,99}$ (6,120-6)	Hypothesis H_0 is not valid, if $T > t_y$ (6,120-6) Counted value is higher than table critical value
White	Black	1,074	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
White	Red	3,924	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
White	Blue	6,361	4,87	Valid, H_0 denied. There is a significant difference in score between these colours.
White	Yellow	6,493	4,87	Valid, H_0 denied. There is a significant difference in score between these colours.
White	Green	6,773	4,87	Valid, H_0 denied. There is a significant difference in score between these colours.
Black	Red	2,849	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
Black	Blue	5,286	4,87	Valid, H_0 denied. There is a significant difference in score between these colours.
Black	Green	5,698	4,87	Valid, H_0 denied. There is a significant difference in score between these colours.
Black	Yellow	5,419	4,87	Valid, H_0 denied. There is a significant difference in score between these colours.
Blue	Green	0,412	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
Blue	Yellow	0,132	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
Green	Yellow	0,280	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
Red	Blue	2,437	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
Red	Green	2,849	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.
Red	Yellow	2,569	4,87	Not valid, H_0 denied. There is not a significant difference in score between these colours.