https://doi.org/10.24867/GRID-2022-p28 Original scientific paper

COMPARATIVE ANALYSIS OF THE INFLUENCE OF COLOUR ON CUSTOMERS' TRUST TOWARDS WEBSITES IN THE FIELDS OF ONLINE BANKING AND CRYPTOCURRENCY TRADING

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Abstract: *This paper focuses on the influence of colour on customers' trust in websites in the fields of online banking and cryptocurrency trading. The literature reviews associated with the use of colour in web design shows that colour has a significant influence on customers' interaction with websites. Considering that, this study aimed to determine the relationship between used colour and trust towards websites in the specific areas of online banking and cryptocurrency trading. The method used to explore these relationships was an online survey, based on Likert scale. The survey inquired data about respondents, such as gender, age, level of education and their use of online banking and cryptocurrency trading. The main part of the survey was the one where the respondents were presented with website stimuli that differed in colour, and evaluated through grades on the Likert scale on given statements related to trust. To define to which extent, the chosen colour palette along with some users' general characteristics impacts the perception toward trust of presented websites, Kruskal–Wallis one-way analysis of variance and Mann–Whitney U test was conducted. The results indicated that there is a difference in respondents' trust towards websites in the fields of online banking and cryptocurrency trading depending on the colour used as the dominant in website design. Statistical significance was partly reached to their age and gender but not to their level of education. Overall, the study showed that when designing websites in the fields of online banking and cryptocurrency trading, choosing colour palettes that are needed to be trustworthy to the targeted audience is the issue that should be addressed with attention.*

Keywords: web design, colour, trust, e-banking, cryptocurrency

1. INTRODUCTION

As an element that affects the perception of the world around us, colour has always been the subject of interest and research. We never really think about colour as a phenomenon, it is present, and we process it unconsciously. From the earliest age, a human is taught to relate colour with some association, so even at the most mature age, it is not easy to describe it without using an example (Fairchild, 2005). Even though we know everything about a certain colour, we see it, we can imagine it if it is not present, we know how to recognize it, yet we would not be able to convey the sensation of colour to someone who does not have such possibilities. For that reason, how we perceive colour predominantly affects our perception of the world around us. Just as the processing of colour happens unconsciously, we also develop interpretations related to it throughout life. Culture, tradition, and religion are all aspects that, in addition to our character, will influence what associations we relate to the colour. Once we create an association, it is challenging, if not impossible, to change it. For example, in Europe, as well as in most other regions, white is considered the colour of purity and innocence; it is associated with weddings, while in the Far East, it is considered the colour of sadness and mourning (Bortoli & Maroto, 2001). Considering cultural differences, it would be absurd to ascribe strict interpretations to colours, although unofficially, but also unconsciously, we do so. In addition to all these factors, however, we cannot expect anyone with common demographic characteristics to share the same perception. This is a consequence of the influence of character on our general existence. Thus, people of the same religion, nationality, place of residence, and even gender and age will perceive colours differently. For example, someone will give the colour red a positive character and associate it with love, happiness, and passion.
In contrast, someone, on the other hand, will associate it with a negative context. They will associate it with danger, fire, and blood, which directly reminds them of disease, and war. Colour as a phenomenon directly affects our subconscious, causing certain emotions and moods. Each individual will interpret colours differently, which originates from psychological aspects. How we interpret particular colour says a lot about us. Research has established a close connection between human character and feelings toward colours. In addition to a persons' character defining how we will perceive a specific colour, the influence

of society, religion, and previous experiences will also impact our interpretation of them (Mikellides, 2012).

A significant amount of research was conducted to define the connection between colours and emotions. Research by Clarke and Costall (2008) confirmed that warm colours evoked more intense emotions than cool colours. The colour red has been found to have the most intense effect on the observer; it was associated with love, passion, warmth, and anger. The colour orange had a similar but less intense connotation. Orange is associated with warmth, happiness, and energy. Yellow, another colour from the group of warm colours, is associated with happiness and warmth. Based on these results, it was determined that with the decrease in the warm tone of the colour (from red to yellow) there is also a decrease in the excitement that the colour causes. Cool colours are, as expected, associated with more subtle concepts, such as peace, nature, and relaxation. Neutral colours were also investigated. Black colour is the most common association with evil, power, and strength, while white is associated with all the opposite emotions. Grey is rated as dull and monotonous but also calming. Brown and purple are colours with which the respondents had almost no association (Clarke & Costall, 2008).

Another study provided very specific results regarding colour preferences in the context of gender. It was concluded that blue is the most preferred colour by both genders, while yellow is the least preferred. Men prefer red more than women, while the reverse is true for green. Interestingly, women show fewer positive emotions towards yellow and orange compared to men. It was also concluded that different time periods are accompanied by different colour preferences. For example, during the 1970s, orange was the second most preferred colour, while nowadays, it is the second least preferred (Mikellides, 2012).

In the research conducted by Coursaris and Swierenga (2013), it was found that respondents show a greater preference towards cool colours or combinations that include cool colours. It has been observed that a website with an immutable design and mutable colour palette causes different reactions according to the used palette. Namely, combinations that contained one of the cold colours as a base (e.g., blue), whether in combination with another cold or warm colour, were rated more positively compared to sites with a warm colour base. Thus, a site whose colour palette was based exclusively on warm colours (e.g., red and orange) was quite unattractive to respondents. Based on the results, it was concluded that cool colours are associated with more positive emotions compared to warm ones. Thus, the blue colour palette is the most common association with security, credibility, and confidentiality (Coursaris & Swierenga, 2013).

In addition to personal preferences, variations in the use of colour palettes were observed in relation to demographic characteristics. Kondratova and Goldfarb (2007) found that there are colour palettes that are widely used globally, but also those that are specific to regions. It was found that the palette of colours with a high application at the international level includes shades of grey, blue and light shades of yellow. In contrast to this palette, the authors extricated the colour palette that dominates the region of Japan. This palette is based on warm colours, shades of red, orange and yellow, where yellow has a distinct dominance when used. This knowledge clearly shows how much influence cultural and demographic characteristics have in this domain as well (Kondratova & Goldfarb, 2007).

Additionally, it was determined that demographic characteristics influence both the choice of colours and the users' desire to purchase through a specific website. Broeder and Scherp (2017) found that colour affects the percentage of purchase realization and confidence in the marketed content through emotions. It has been noticed that this influence is more intense in Asian countries compared to Western countries (Norway, Germany and United Kingdom) (Broeder & Scherp, 2017).

It is inevitable that the colour of the content, it causes different reactions among the users, and for this reason, tests were carried out aimed at more specific user behaviours. In the research of Pellet and Papadopoulou (2012) it was determined that colour is the parameter on web pages that has the most impact on users, compared to the used typography, animations and images. It was also observed that in addition to the basic role of the colour in design, it significantly impacts users through an emotional reaction. Stimuli that used softer colours were more visually appealing to users, providing a more pleasant environment, which is an essential factor in a potential purchase through the website. It has been confirmed that when colours are used following the contrast, they can significantly affect the speed and save time when searching for content. Through this research, Pellet and Papadopoulou (2012) also found that colour significantly impacts remembering content on web pages. A good combination of colours provides more readable content that allows the user to navigate and notice information more efficiently, giving users a more pleasant shopping experience and an easier decision. A lower contrast between the background and foreground colors has been shown to make a marketed web page easier to remember. Remembering the content will positively influence the realization of purchases, where it was

determined that the change of colour brightness also impacts these parameters. The respondents' preferences were directed towards brighter colours as background, which finally led to the conclusion of an inevitable connection between the colours used, remembering the content, and making a purchase (Pelet & Papadopoulou, 2012). In their research, Bagchi & Cheema (2013) investigated the influence of a red background on the desire to buy the presented product. Their research is based on online auctions. The results indicate that red backgrounds (versus blue) cause more significant bid spikes. A red background (compared to blue) has also been found to reduce offers in negotiations, inferring that red colour causes aggression through arousal (Bagchi & Cheema, 2013).

Reliability and trust that the content evokes among users are one of important parameters that are considered when designing and marketing web pages. Bearing this in mind, numerous authors have examined the direct influence of colour on the impression of the reliability of web content. Another research conducted by Pellet and Papadopoulou (2011) made it possible to focus specifically on the effect of colour on user trust in e-commerce. The results showed that colour affects user trust, both positively and negatively. Depending on the colour that was used as the base, the respondents evaluated the amount of trust it evoked through the attributes of competence, integrity, benevolence, and predictability of the site. Bright, low-saturated colours have been shown to instil more confidence in users because they are associated with the aforementioned attributes. These colours are also described as visually pleasing and attractive, leaving an impression of professionalism.

On the other hand, bright, highly saturated colours have a negative impact on the previously mentioned four attributes. The most common reason for this reaction is that these colours are perceived as too aggressive and promotional. In addition to the general use of colours, it was found that users also pay attention to the colours in the images used. They expressed their preference for colours that give an "authentic" impression. The research concluded that the combination of white background and chromatic colours is a crucial factor for initiating e-commerce. It is important to note that although brighter colours were more often associated with trust and the tendency to purchase, they were not always the trigger (Pelet & Papadopoulou, 2011). Pellet and associates (2013) subsequently found that using more saturated and brighter colours in the foreground can motivate users to feel excited about the content on the web page. Colour combinations with bright, saturated foreground colours reminiscent of the natural environment led to more positive user reactions to a website. These colours make the site easier to remember and more pleasant to use (Pelet et al., 2013). Colour contrast is reported to be one of the most important elements for effective visual usability: higher colour contrast is perceived to be more flattering to the users. It is also proven that choosing colour correctly provides a better first impression of a website (Kovačević, Brozović & Banić, 2020). As well as design in digital form, the design of printed products largely relies on colour. Along with the material and shape of the product, colour is one of the most important factors taken into consideration when designing packaging (Vladić et al., 2015) which should be taken into consideration since it is expected that photographs or 3D models of different product packaging are accented on the webpages.

Khrouf and Frikha (2021) found that upon first encountering a web page, the users' attention is primarily attracted by aesthetic elements such as colour. Then the user evaluates the extent to which the used colours match commercial web pages with a similar theme that he has already used. Suppose the dominant colour follows the users' previous experiences. In that case, the content placed will instil additional trust in the user due to coherence with other content of a similar theme. On the specific example (of a hotel) they used in their research, Khrouf and Frikha came up with results indicating that the blue colour suited the content better than the red. This also contributed to a higher level of trust among users, which was previously found to be one of the main factors for making a purchase and leaving personal information on a website (Khrouf & Frikha, 2021). Lee and Rao (2010) conducted similar research. On a straightforward online shopping site with an immutable design except for the colour, the authors found that customers better accepted the blue colour as in most previous research. As the authors analysed the differences between the reactions to the blue and green websites, it was evident that the positive reactions regarding the trust that the site provides to the users prevailed on the side of the blue website. It was also found that users' general colour preferences did not significantly impact the trust users felt when using the site. Thus, it was determined that colour alone does not have such a pronounced effect on the user as when it is viewed as one of the design elements (Lee & Rao, 2010).

Research that included an analysis of the influence of four colours (red, green, blue, and black) on trust was conducted in 2011 by Alberts and Van der Geest. This research primarily confirmed the pre-existing assumption that colour significantly impacts the trustworthiness of websites. It was found that the colour blue was ranked as the most trustworthy, while black caused the least trust among respondents. It also

investigated whether there is a difference when comparing sites, which gave a positive result. This would mean that, depending on the choice of two colours offered, there may be a variation in the amount of trust with the user. In this case, it turned out that the influence of colour on trust is more pronounced in women than men, but also that women were generally more trusting of the sites offered. In addition, it was examined whether there are differences in confidentiality and colour, according to website area of operation. Websites in the fields of law, finance, and medicine were analysed. It was determined that there are no significant variations regarding the relationship between colour and trust but that the generally used colour palette had significantly more influence on trust in the finance field than the other two areas. These results suggest that colour can have different effects in certain areas. However, to see this more clearly, it should be investigated in areas that are much more different from each other, as opposed to the three equally risky areas that the authors selected in this study.
Additionally, it was found that the colour blue was ranked as the most trusted in all three areas, while the reactions to the other colours differed concerning the area. Thus, in finance and medicine, the second most reliable colour was green, while in the field of law, it was black. The third most trusted colour differed between fields: for finance, it was black. For law, it was green. Moreover, for medicine, it was white. The number of respondents who preferred black on legal websites and an aversion to red on websites of a financial nature was interesting (Alberts & Van der Geest, 2011).
Regarding e-banking, Sasidharan and Dhanesh (2007) examined the effect of changing the blue colour brightness on user response, considering that the blue colour was rated in a handful of tests as the most trusted colour. Here, it was found that a light shade of blue evoked the most trust in users. It was also concluded that the use of colour, regardless of shade, gives more trust compared to websites where only black and white were used (Sasidharan & Dhanesh, 2007).
Driven by previous research findings, in this paper, we aimed to investigate the influence of website colours on users' trust in online banking and cryptocurrency trading. The main goal of the conducted research was to determine whether there were statistically significant differences between the answers on trust statements among users based on the dominant website colour and their gender, age, and level of education. Gained knowledge can be used as a particular indicator when it comes to colour choice in terms of providing confidentiality to the content of the websites in these areas.

2. METHOD

The stimuli, online banking, and cryptocurrency trading websites were created using a monochromatic colour palette with five different colours as bases: grey, yellow, blue, red, and green. The elements created within the stimuli were based on the previous research of the existing websites in online banking and cryptocurrency trading. The method used to analyse the connection between colour and trust was a survey based on a Likert scale.
In order to minimize the deviation of the results, the respondents primarily took the Farnsworth Munsell 100 Hue Test. After gaining satisfactory results on this test, they were presented with a survey.
The survey consisted of sets of questions that obtained information about gender, age, level of education, and whether they use online banking and cryptocurrency trading. In the central part of the survey, respondents were presented with the stimuli with the task of evaluating them. The survey consisted of a total of 23 questions. In order to obtain detailed results, statistical analysis was performed using the nonparametric Mann-Whitney U Test and Kruskal Wallis Test.
The results of the nonparametric statistical tests were presented for two websites in five colours: a bank website with online banking service - website 1 and a website for cryptocurrency trading - website 2, based on the answers (given ratings on the Likert scale ranging from 1 – strongly disagree, 2- disagree, 3 – neutral, 4 – agree to 5 – strongly agree) on the following statements:
P1 - the website looks reliable and with truthful information,
P2 - I would have confidence in using one of the services offered on the site,
P3 - the colour palette used instils confidence in the stability and security of the bank/cryptocurrency trading.

2.1 General information about respondents

The total sample consisted of 90 respondents, of which there were significantly more female (63) than male respondents (23) (Figure 1).

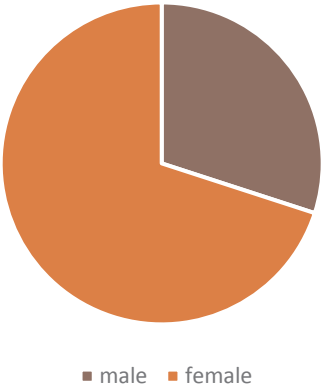

Figure 1: Graphic representation of respondents' gender

According to age, the largest number of respondents is classified in the group of 20 to 30 years old (77%), on the second place by the number of respondents is the group of 51 to 60 years old (13%), and then the group of 31 to 40 years old (6%). The lowest number of respondents was in the age group of 41 to 50 years (4%) (Figure 2).

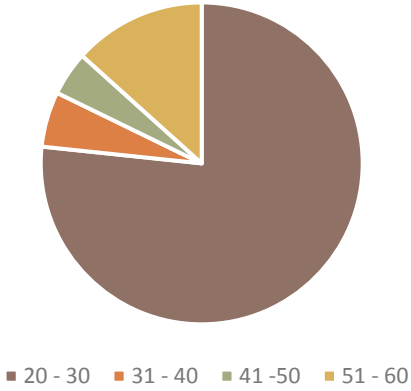

Figure 2: Graphic representation of respondents' age

Regarding education, the highest percentage of respondents has a high school education (56%), 29% of respondents have completed a bachelor's degree, and just 14% have master's degree. It was noticed that there is a very slight difference regarding the level of education in relation to the gender of the respondents, where female respondents have a slightly higher percentage of academic education (Figure 3).

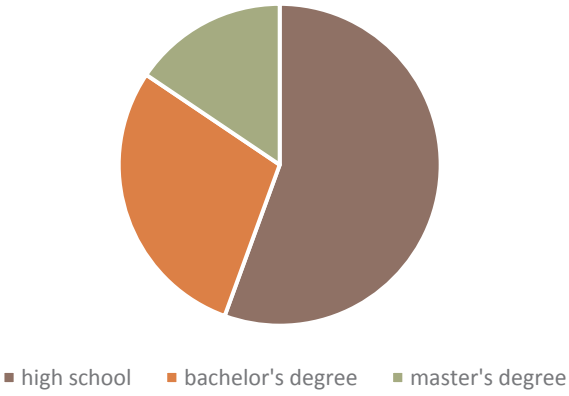

Figure 3: Graphic representation of respondents' education

Online banking services are used by 90% of the respondents (Figure 4). A higher percentage of male respondents (96%) than females (87%) use this banking service.

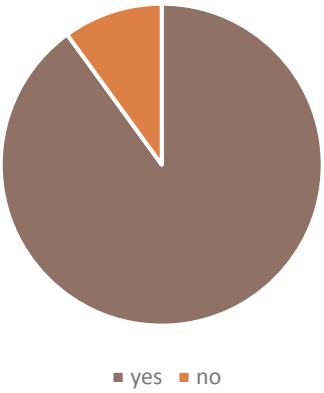

Figure 4: Graphic representation of respondents' e-banking usage

91% of respondents are familiar with cryptocurrency, while only 9% visit sites with this type of content (Figure 5). In addition, only 1 (2%) female respondent visits Internet content related to cryptocurrencies, while 22% of males answered positively.

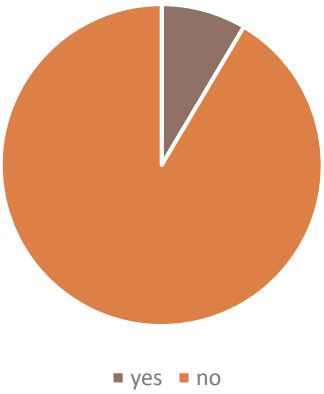

Figure 5: Graphic representation of respondents' usage of cryptocurrency trading websites

3. RESULTS AND DISCUSSION

In order to determine whether gender influences the respondents' answers, the Mann-Whitney U test was conducted. This test showed that a statistically significant difference at the $p<0.05$ level for the tested groups exists only in responses to statement 3 (*the used colour palette instils confidence in the stability and security of the bank/cryptocurrency trading*) for the bank website in red colour: z=-1.687, p=0.017, r=0.25. For all other colours and statements, the test determined that there are no statistically significant differences in the responses of men and women (Table 1).
Applying the Kruskal-Wallis test, it was concluded that there is no statistically significant difference in the reactions to stimuli of three different educational groups (G1, n=50, high school, G2, n=26, bachelor's degree, G3, n=14, master's degree) (Table 2).

Table 1: Results of the Mann-Whitney U test on influence of gender on respondents' answers

		Website 1			Website 2		
		P1	P2	P3	P1	P2	P3
Red	Z	-1.687	-1.746	-2.381	-0.742	-0.136	-0.619
	p	0.092	0.081	**0.017**	0.458	0.892	0.536
	r	0.18	0.18	0.25	0.08	0.01	0.07
Green	Z	-1.754	-1.887	-1.188	-1.122	-0.160	-0.583
	p	0.079	0.059	0.235	0.262	0.873	0.560
	r	0.18	0.2	0.12	0.12	0.02	0.06
Blue	Z	-1.301	-1.772	-0.786	-0.398	-0.616	-0.759
	p	0.193	0.076	0.432	0.691	0.538	0.448
	r	0.14	0.19	0.08	0.04	0.06	0.08
Yellow	Z	-0.483	-0.507	-0.351	-0.748	-0.041	-0.246
	p	0.629	0.612	0.726	0.454	0.967	0.806
	r	0.05	0.05	0.04	0.08	0.004	0.03
Grey	Z	-0.101	-0.297	-0.472	-0.281	-0.600	-0.750
	p	0.920	0.766	0.637	0.779	0.549	0.453
	r	0.01	0.03	0.05	0.03	0.06	0.08

Table 2: Results of the Kruskal-Wallis test on influence of education on respondents' answers

		Website 1			Website 2		
		P1	P2	P3	P1	P2	P3
Red	c^2	2.850	0.874	1.123	0.536	0.835	0.402
	df	2	2	2	2	2	2
	p	0.240	0.646	0.570	0.765	0.659	0.818
Green	c^2	3.754	3.339	4.393	0.091	0.982	0.307
	df	2	2	2	2	2	2
	p	0.153	0.188	0.111	0.956	0.612	0.858
Blue	c^2	0.966	0.044	1.285	1.215	0.042	1.147
	df	2	2	2	2	2	2
	p	0.617	0.978	0.526	0.545	0.979	0.564
Yellow	c^2	1.218	0.319	3.790	3.478	1.801	2.232
	df	2	2	2	2	2	2
	p	0.544	0.853	0.150	0.176	0.406	0.328
Grey	c^2	1.074	1.067	1.912	0.278	0.054	0.496
	df	2	2	2	2	2	2
	p	0.585	0.587	0.384	0.870	0.973	0.780

Table 3: Results of the Kruskal-Wallis test on influence of age on respondents' answers

		Website 1			Website 2		
		P1	P2	P3	P1	P2	P3
Red	c^2	3.851	3.554	3.513	5.942	5.659	6.825
	df	3	3	3	3	3	3
	p	0.278	0.314	0.319	0.114	0.129	0.078
Green	c^2	4.162	2.803	4.502	3.992	6.909	7.448
	df	3	3	3	3	3	3
	p	0.244	0.423	0.212	0.262	0.075	0.059
Blue	c^2	13.761	14.968	15.846	16.512	19.185	19.887
	df	3	3	3	3	3	3
	p	**0.003**	**0.002**	**0.001**	**0.001**	**0.000**	**0.000**
Yellow	c^2	1.990	3.032	3.126	3.530	6.010	5.260
	df	3	3	3	3	3	3
	p	0.575	0.387	0.373	0.317	0.111	0.154
Grey	c^2	8.559	8.268	8.074	13.533	11.447	11.896
	df	3	3	3	3	3	3
	p	**0.036**	**0.041**	**0.045**	**0.004**	**0.010**	**0.008**

The Kruskal-Wallis test, which was performed to determine whether there is an influence of the age of the subjects on the results, determined that there are statistically significant differences between the four age groups (G1, n=69, 20-30 years old, G2, n=5, 31-40 years old, G3, n=4, 41-50 years old, G4, n=12, 51-60 years old) (Table 3). Since it was determined that statistically significant differences in relation to the age of the respondents exist for the blue and grey websites, a post-hoc test was performed. As a post-hoc test, a series of Mann-Whitney tests were performed to determine between which age categories there was a statistically significant difference in the respondents' answers. These tests showed statistically significant differences between the age groups G1 (20-30 years old) and G4 (51-60 years old) in all four stimuli. The effect sizes r in the group were small or medium. A statistically significant difference was also observed between the age categories G1 and G3 (41-50 years old), but only for site stimuli with a cryptocurrency theme and in the case of both colours. In this case, the influence sizes for each parameter are greater than 0.3. Therefore, they belong to the medium influence group. Also, a statistically significant difference was observed in the responses between groups G2 and G4 for the bank-themed site in blue, with influence sizes exceeding 0.5, and therefore belonging to the high influence group. The calculated effect size shows a high level of influence between the G2 and G3 age groups for cryptocurrency-themed sites in both blue and grey (Table 4).

Table 4: Results of the post-hoc Mann-Whitney test (on influence of age on respondents' answers)

		Blue						Grey					
		Website 1			Website 2			Website 1			Website 2		
		P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3
G1/G2	Z	-0.452	-0.011	-0.453	-1.509	-1.974	-2.048	-1.771	-1.245	-1.387	-1.193	-0.895	-1.296
	p	0.676	1.000	0.676	0.153	0.063	0.051	0.094	0.244	0.188	0.263	0.400	0.219
	r	0.05	0.001	0.05	0.17	0.23	0.24	0.2	0.14	0.16	0.14	0.1	0.15
G1/G3	Z	-1.279	-1.587	-1.740	-2.704	-3.003	-2.993	-0.696	-1.150	-1.327	-2.619	-2.552	-2.659
	p	0.231	0.134	0.098	**0.006**	**0.001**	**0.001**	0.519	0.282	0.212	**0.007**	**0.009**	**0.006**
	r	0.15	0.19	0.2	**0.32**	**0.35**	**0.35**	0.08	0.13	0.15	**0.31**	**0.3**	**0.31**
G1/G4	Z	-3.460	-3.642	-3.741	-3.022	-3.029	3.114	-2.492	-2.534	-2.370	-2.623	-2.344	-2.135
	p	**0.001**	**0.000**	**0.000**	**0.003**	**0.002**	**0.002**	**0.013**	**0.011**	**0.018**	**0.009**	**0.019**	**0.033**
	r	**0.38**	**0.4**	**0.42**	**0.34**	**0.34**	**0.35**	0.28	0.28	0.26	0.29	0.26	0.24
G2/G3	Z	-1.273	-1.268	-1.178	-1.549	-1.807	-1.807	-0.130	-0.782	-0.637	-2.095	-2.095	-2.226
	p	0.286	0.286	0.286	0.190	0.111	0.111	0.905	0.556	0.556	**0.063**	**0.63**	**0.032**
	r	**0.4**	**0.4**	**0.39**	**0.5**	**0.6**	**0.6**	0.04	0.26	0.21	**0.7**	**0.7**	**0.74**
G2/G4	Z	-2.567	-2.206	-1.852	-0.843	-0.516	-0.516	-0.548	-0.940	-0.442	-1.209	-1.063	-0.714
	p	0.009	0.037	0.082	0.442	0.646	0.646	0.646	0.383	0.721	0.279	0.328	0.506
	r	**0.6**	**0.5**	**0.45**	0.09	0.06	0.06	0.06	0.1	0.05	0.13	0.12	0.08
G3/G4	Z	-0.447	-0.127	-0.441	-1.174	-1.536	-1.536	-0.630	-0.510	-0.128	-0.523	-0.403	-1.141
	p	0.684	0.953	0.684	0.316	0.170	0.170	0.599	0.684	0.953	0.684	0.770	0.316
	r	0.11	0.03	0.11	0.029	**0.38**	**0.38**	0.16	0.13	0.03	0.13	0.1	0.28

In the following analysis, which aimed to give a comprehensive insight into the influence of colour on respondents' answers towards confidentiality statements, respondents were treated as a whole since the level of education does not result in a statistically significant difference in respondents' answers (ratings) to stimuli, and in gender and age-based analysis, statistical significance was partly reached (Table 1-4).
Applying the Kruskal-Wallis test, it was revealed that there is a statistically significant difference in the respondents' responses in relation to the site's colour, both with the stimulus of the bank's website and with the stimulus with cryptocurrencies (Table 5).

Table 5: Results of the Kruskal-Wallis test on influence of colour on respondents' answers

	Website 1			Websites 2		
	P1	P2	P3	P1	P2	P3
c^2	38.538	42.512	42.199	18.872	18.932	20.069
df	4	4	4	4	4	4
p	**0.000**	**0.000**	**0.000**	**0.001**	**0.001**	**0.000**

In order to determine in more detail between which colours there is a statistically significant difference, an individual comparison was made between each of the two colours used using the Mann-Whitney test. The comparison was made for the following colour pairs: red-green, red-blue, red - yellow, red-grey, green - blue, green-yellow, green - grey, blue-yellow, blue-grey, and yellow-grey. The tests determined that statistically significant differences do not exist when comparing yellow and grey colours. In contrast, for all other pairs of colours there is a statistically significant difference in the answers to at least one statement for one site. In the first comparison group (red-green), the results indicate that there is a statistically significant difference only with the stimulus of the bank's website, on statement 2 - *I would have confidence in using one of the services offered on the website* (z= -1.341, p=0.033, r=0.22) and statement 3 – *the colour palette used instils confidence in the stability and security of the bank/cryptocurrency trade* (z= -3.126, p=0.002, r=0.33). The second group (red-blue) resulted in statistically significant difference for both sites, namely for the bank site for statements P2 (z= -2.111, p=0.035, r=0.22) and P3 (z= -3.045, p=0.002, r= 0.32), while for the site with cryptocurrencies this difference was observed for all three statements - P1 (z=-2.988, p=0.003, r=0.31), P2 (z= -3.154, p=0.002, r=0.33) and P3 (z= -3.288, p=0.001, r=0.35). When comparing red and yellow colours, there were differences only for bank websites, for statements P1 (z= -2.731, p=0.006, r=0.29) and P2 (z= -2.267, p=0.023, r=0.24). Differences in relation to the same statements also appeared when comparing red and grey colours - P1 (z= -3.326, p=0.001, r=0.35) and P2 (z= -2.766, p=0.006, r=0.29). A statistically significant

difference for the cryptocurrency site stimuli occurred when comparing green and blue. This comparison resulted in a statistically significant difference in all three statements - P1 (z= -2.703, p=0.007, r=0.28), P2 (z= -2.190, p=0.029, r=0.23) and P3 (z= -2.166, p=0.030, r=0.23). Unlike the previous comparison group, when comparing the green and yellow colours, the statistically significant differences occur only in bank websites, and in all three statements - P1 (z= -4.122, p=0.000, r=0.43), P2 (z= -4.440, p=0.000, r=0.47) and P3 (z= -4.549, p=0.000, r=0.48). The same is the case with the next two colours (green and grey) – P1 (z= -4.645, p=0.000, r=0.49), P2 (z= -4.868, p=0.000, r=0.51) and P3 (z= -4.679, p=0.000, r=0.49). Statistically significant differences of medium and high impact occur for both sites in all three statements when comparing blue and yellow and blue and grey (Table 6).

Table 6: Results of the Mann-Whitney test (on influence of colour on respondents' answers)

		Website 1			Website 2		
		P1	P2	P3	P1	P2	P3
Red - green	Z	-1.341	-2.134	-3.126	-0.632	-1.253	-1.363
	p	0.180	0.033	0.002	0.527	0.210	0.173
	r	0.14	0.22	0.33	0.07	0.13	0.14
Red - blue	Z	-1.283	-2.111	-3.045	-2.988	-3.154	-3.288
	p	0.199	**0.035**	**0.002**	**0.003**	**0.002**	**0.001**
	r	0.13	0.22	**0.32**	**0.31**	**0.33**	**0.35**
Red - yellow	Z	-2.731	-2.267	-1.122	-0.412	-0.062	-0.075
	p	**0.006**	**0.023**	0.262	0.681	0.951	0.940
	r	0.29	0.24	0.12	0.04	0.006	0.008
Red – grey	Z	-3.326	-2.766	-1.516	-0.698	-0.598	-0.598
	p	**0.001**	**0.006**	0.130	0.485	0.550	0.550
	r	**0.35**	0.29	0.16	0.07	0.06	0.06
Green - blue	Z	-0.030	-0.070	-0.058	-2.703	-2.190	-2.166
	p	0.976	0.944	0.954	**0.007**	**0.029**	**0.030**
	r	0.003	0.007	0.006	0.28	0.23	0.23
Green - yellow	Z	-4.122	-4.440	-4.459	-1.131	-1.282	-1.480
	p	**0.000**	**0.000**	**0.000**	0.258	0.200	0.139
	r	**0.43**	**0.47**	**0.48**	0.12	0.14	0.16
Green - grey	Z	-4.645	-4.868	-4.679	-1.350	-1.902	-1.896
	p	**0.000**	**0.000**	**0.000**	0.177	0.057	0.058
	r	**0.49**	0.51	**0.49**	0.14	0.2	0.2
Blue - yellow	Z	-3.905	-4.260	-4.387	-3.661	-3.335	-3.566
	ρ	**0.000**	**0.000**	**0.000**	**0.000**	**0.001**	**0.000**
	r	**0.4**	**0.45**	**0.46**	**0.39**	**0.35**	**0.38**
Blue - grey	Z	-4.449	-4.741	-4.571	-3.650	-3.716	-3.698
	ρ	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	r	**0.47**	0.5	**0.48**	**0.38**	**0.39**	**0.39**
Yellow - grey	Z	-0.758	-0.544	-0.395	-0.307	-0.712	-0.661
	ρ	0.448	0.586	0.693	0.759	0.477	0.509
	r	0.08	0.06	0.04	0.03	0.07	0.07

4. CONCLUSION

Results provided by this research can be observed as a preliminary report considering the users' responses to the use of colour on websites in online banking and cryptocurrency trading. Chosen colour palettes and users' general characteristics impact, to some extent, the perceived trust of presented websites.

In terms of colour, the conducted statistical tests revealed that statistical significance was not reached when comparing yellow and grey stimuli. In contrast, for all other pairs of colours there is a statistical significance in the answers to at least one statement regarding confidentiality and for at least one website.

Among the characteristics of the respondents, statistical significance was observed in the respondent's answers in the context of their age: the greater the age difference, the more the results varied. Gender

and level of education were not found to be variables that generate statistical significance in answers to stimuli-related statements. The only exception is in the analysis conducted for the variable respondents' age, where statistically significant difference in respondent's answers was determined in examining the answers given for the statement 3 (*the used colour palette instils confidence in the stability and security of the bank/cryptocurrency trading*) but only for the bank website and only in red colour. Gained knowledge can be used as a particular indicator regarding colour choice in terms of providing confidentiality of the targeted audience to the content of online banking and cryptocurrency trading websites.

5. ACKNOWLEDGMENTS

This research (paper) has been supported by the Ministry of Education, Science and Technological Development through project no. 451-03-68/2022-14/ 200156 "Innovative scientific and artistic research from the FTS (activity) domain."

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