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Research on the Impact of the User Experience for the Success of a Virtual Product: Bulgarian Travel Agency Websites

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***Abstract*— The huge and ubiquitous of the Internet usage, confirms that websites consist a critical competitive resource for tourism business. For the purpose of this report, a study of the user experience of virtual products - websites of Bulgarian travel agencies were prepared. Nine of most of popular Bulgarian sites were selected, namely: "Alexander Tour", "Bohemia", "Ecuador", "Emerald", "Globus", "Mistral", "Red Tours", "RuAl" and "Sun Travel". Data collection was performed through an electronic questionnaire, which was based on Google Forms. The results obtained showed that among all the quality factors, ease of understanding, response time and intuitive functioning of the website (ease of use and navigation) were the most important. The study was tested on a sample of 95 customers of travel websites targeting the Bulgarian market. In conclusion, a positive correlation was found between the overall perceived quality and purchase intentions.**

Keywords*— *Travel websites, user experience, digitalization.

I. Introduction

Nowadays in the world of information technologies and programming are so important and help us reach unexpected opportunities. Web design, user experience and information architecture play an important role in improving user trust and customer engagement in all areas of our daily lives.

Travel websites are extensively used by travellers for their travel bookings, yet very little is known about the hedonic effectiveness of such experiences for the customer. The end users of these websites are customers who may not always be sophisticated information system (IS) users [1].

One of the key points of travel websites is that their products have their ability to inspire consumers' dream. Travel websites are widely used by travelers for their travel bookings, but very little is known about sales performance and the emotional experiences for the customers.

For the purpose of this report, a study of the user experience of virtual products - websites of Bulgarian travel agencies, was conducted. Nine of the most popular Bulgarian travel agency websites were selected, namely: „*Alexander Tour*", „*Bohemia*", „*Ecuador*", „*Emerald*", „*Globus*", „*Mistral*", „*RedTours*, „*RuAl*" and „*Sun Travel*". The websites of the compared agencies could be seen at: [2, 3, 4, 5, 6, 7, 8, 9, 10]. The empirical study was based on a quantitative approach. The sample consisted of 95 internet users who have visited this travel agencies's websites, 54 of whom were women (57.5%) and 41 men (43.5%), and their age ranged from 18 to 50, with the majority of participants belong to the age category of 18–25 years old (40%). The target group ranges from people looking for customized vacations, excursions and adventure experiences, families looking for convenient and safe destinations with entertainment options for children festivals to youth oriented budget travels, adventures and.

The measurement of emotional user experience according to the static method is based on subjective evaluations. Through these evaluations, users self-declare their emotional state during interaction with the product or its elements. One of the most common and widely used tools for generating user experience data in the static method is questionnaires. Exactly this method of collecting data on the emotional user experience was used for this study. Data collection was performed through an electronic questionnaire, which was based on Google Forms.

II. Materials and Methods

According to [11] in Bulgaria for 2024г. 47% of the Bulgarian respondents get information about their trips from family and friends, approximately 36% search on

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travel websites and 34% travel agencies and their brochures, and finally 24% use social networks such as Instagram, Facebook and TikTok as a source of inspiration. Based on these sources of information, Figure 1 shows where Bulgarians get the majority of information while making their decisions.

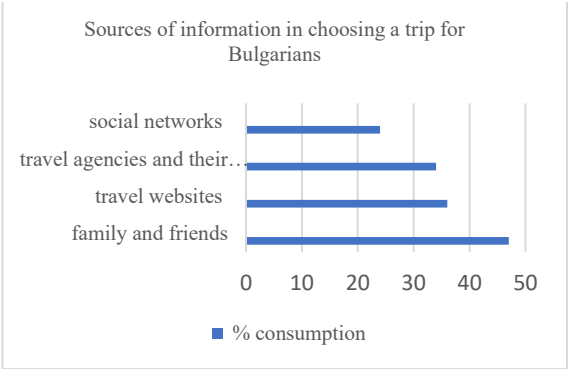

Fig. 1. Sources of information in choosing a trip for Bulgarians.

Over a third of Bulgarians choose package holidays for their trips - 39% [11]. A little over half of them, or 51%, were purchased at the office of a travel agency, and 49% of through online platforms with offers from different agencies or from the travel agency's website (fig.2). Data collected by Response Now S.R.O. in December 2024 through a representative sample of Internet users in Bulgaria between the ages of 18 and 60. The total number of respondents was 1028 [12].

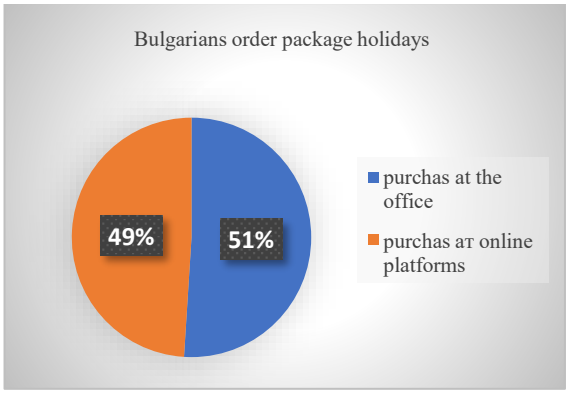

Fig. 2. Bulgarians order package holidays.

The total num digitalization is the basis for the development of a modern economy, and this process covers all aspects of management, including consumer behavior in the environment [13].

The static emotional user experience design study starts with questionnaire wording. There are more than 100 different methods for measuring user experience. The most commonly used tools in those tasks are the questionnaires. There are over 20 types of questionnaires. They are based on methods like Aesthetic scale, Hedonic utility scale, Game experience, Mental effort, Product semantic analysis, etc [14]

For the study was used the "Likert scale", according to which the user indicates a specific rating in an interval between two extremes – negative and positive Figure 3 shows the Rating scale for our study.

Fig. 3. Rating scale (1- I don't like it at all, 2- I don't like it, 3- I rather don't like it, 4- Neutral, 5- I rather like it, 6- I like it, 7- I really like it).

The criteria by which the audience evaluates dominants is how much they like them. The selected elements are the overall appearance, the web header, its main image and the main colour. Overall the sites are evaluated on how each one has chosen the combination of graphic elements and what is the impact on the target group.

The observance of a comparative regularity of principles in the construction of the assessed sites is noted. Basic norms for a well-functioning site have been adopted. For example, having a header that includes a menu that allows for easy navigation, a main image that is engaging, colourful and of high quality, consistent with the top destinations on offer.

The main goal of the study was to research and analyse the effect of the perceived quality on customers' overall satisfaction, and intentions to use online travel agency services.

The clarity of the approach to the digital representation of emotions and the way of recording the evaluations allows to move on to the construction of the structure of the questionnaire itself. The parts' into which the questionnaire is divided usually coincide with the steps of work on generating static dominance data. The consistency condition is met, in the individual parts of the questionnaire, the evaluation grades should be the same in number and value.

For the professional presentation of statistics and the creation of charts and clear results was used [15].

III. Result and Discussion

Table 1 presents the results of the qualitative technical characteristics of the user experience of the compared sites. In it, the highest ratings are marked in green, the lowest in red.

TABLE 1 AVERAGE VALUES OF COMPARED TECHNICAL PROPERTIES

Properties / Web	*Full coverage*	*Heather*	*Main Image*	*Colour*
Web 1 [2]	4.77	4.60	5.08	5.12
Web 2 [3]	4.10	3.85	4.25	4.12
Web 3 [4]	4.58	4.62	4.88	4.56
Web 4 [5]	4.04	4.15	3.94	4.11
Web 5 [6]	4.94	5.13	4.79	4.75
Web 6 [7]	4.92	4.44	4.62	4.71
Web 7 [8]	4.94	5.00	4.87	4.60
Web 8 [9]	4.88	4.87	4.75	4.60
Web 9 [10]	5.19	5.25	5.17	5.20

Figure 4 shows the final grades as a total value of the grades for all criteria. It is clear that website 9 is the favourite.

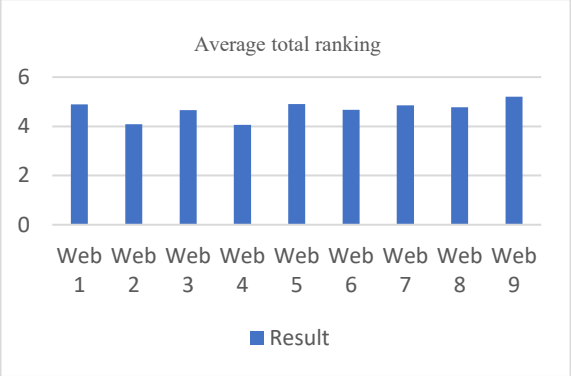

Fig. 4. Average Total Ranking.

Figure 5 shows the preferences of the respondents, comparing the highest rated and the lowest rated website.

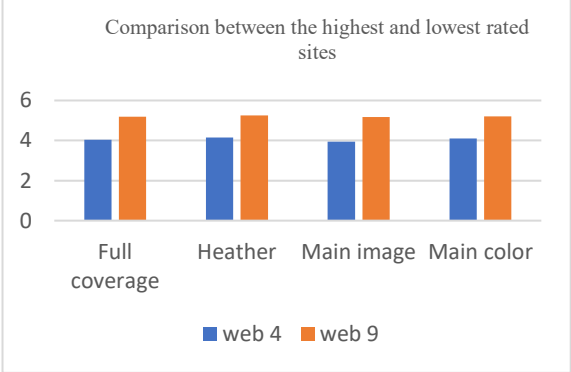

Fig.5. Comparison between the highest and lowest rated sites.

Sun Travel (*Web9*) is favoured by respondents for its clean look and bright vision, while Emerald (*Web 4*) takes a back seat due to a cluttered first impression, despite the enchanting image of a woman on the first page.

For the evaluation of the results is going to be used the box plot method. In descriptive statistics, a box plot or boxplot is a method for demonstrating graphically the locality, spread and skewness groups of numerical data through their quartiles [16]. In addition to the box on a boxplot, there can be lines (which are called whiskers) extending from the box indicating variability outside the upper and lower quartiles.

A boxplot is a standardized way of displaying the dataset based on the five-number summary: the minimum, the maximum, the sample median, and the first and third quartiles. The characteristics studied are represented by formula (1):

$$IQR = Q_3 - Q_1 = q_n * (0.75) - q_n * (0.25) \qquad (1)$$

where Q_3 or 75th percentile, and Q_1 or 25th percentile, are the median of the lower half of the dataset and the median of the upper half of the dataset. Interquartile range (*IQR*) is the distance between the upper and lower quartiles.

A boxplot usually includes two parts, a box and a set of whiskers.

For the formula to work we need to have the median known as Q_2 or 50*th* percentile. It is the middle value in the data. The box is drawn from Q_1 to Q_3 with a horizontal line drawn inside it to denote the median Q_2.

The *IQR* plays a major part in how long the whiskers extending from the box are. Each whisker extends to the furthest data point in each wing that is within 1.5 times the *IQR* as represented by formulas (2) and (3):

$$a = Q_3 - 1.5 * IQR \qquad (2)$$

$$b = Q_1 - 1.5 * IQR \qquad (3)$$

where ***a*** and ***b*** are the maximum and minimum point of the whisker's extensions from the box.

For every criteria and it is results the boxplot method was applied, so the data can be further analysed. Figures 6, 7, 8 and 9 show the visualization of the analysis and the boxplot.

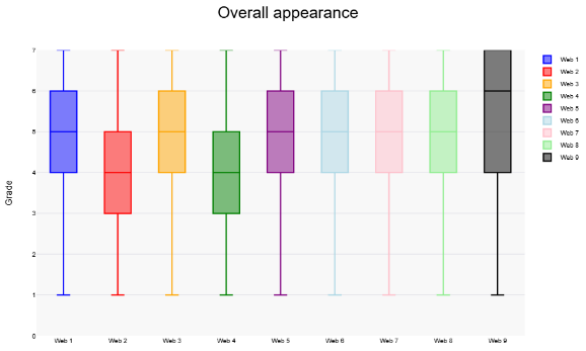

Fig.6. Boxplot of the highest and lowest rated sites based on the overall appearance.

Figure 6 shows that most websites have median grades (*Q2*) between 4 and 6, suggesting a moderate perception of overall appearance. However, *Web 3* and *Web 5* appear to have higher median values, indicating better user ratings for appearance. *Web 9* has a slightly higher median compared to the others, suggesting its overall appearance was rated favourably.

Web 1, Web 3, and *Web 9* have larger *IQRs*, suggesting diverse opinions among users. *Web 6* and *Web 7* have narrower *IQRs*, showing more consistent user feedback. Some websites exhibit wider whiskers (e.g., *Web 9),* indicating extreme ratings.

Websites with higher medians and consistent feedback (e.g., *Web 3, Web 5*) provide a more universally pleasing design.

Websites with larger *IQRs* and ranges (e.g., *Web 9*) might have polarizing designs that appealed strongly to some users while alienating others.

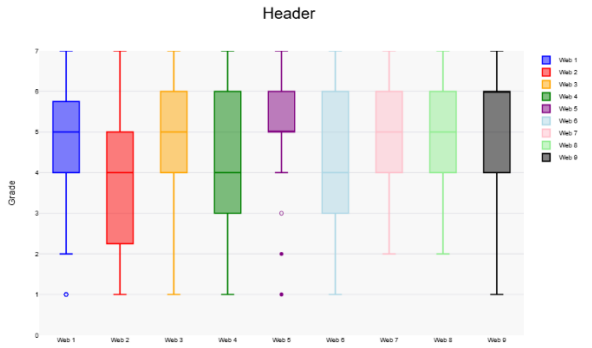

Fig.7. Boxplot of the highest and lowest rated sites based on the header.

Figure 7 shows the medians for the header range between 4 and 6, indicating moderate to good ratings for the header design across most websites. *Web 9* has the highest median value, showing better user satisfaction with its headers. *Web 2* has the lowest median, suggesting its header design and usability were less appealing to users.

Websites such as *Web 1, Web 3, and Web 9* show larger *IQRs*, meaning the opinions on these headers were more diverse. The extreme lower whisker for Web 2 (minimum of 1) suggests some users were highly dissatisfied with its header.

This analysis can guide improvements to header design, focusing on visual appeal, layout clarity, and most importantly usability.

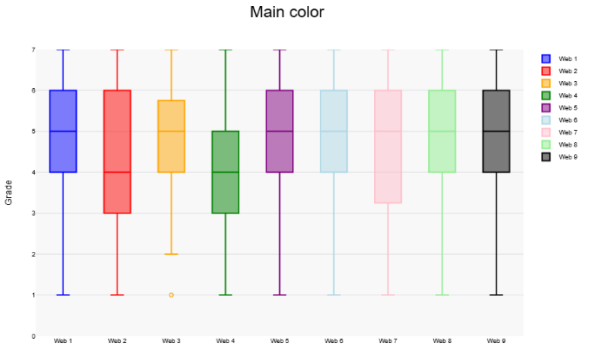

Fig.8. Boxplot of the highest and lowest rated sites based on the main image.

Figure 8 shows all websites received ratings across the full scale (1 to 7), reflecting varied user opinions on main colours. The results *for Web 3, Web 5,* and *Web 9* have higher median values, suggesting users were more satisfied with their main colour selection. *Web 2* and *Web 4* have lower medians, indicating less favourable opinions of their colour schemes.

An outlier can be observed in *Web 3,* where a user rated its main colour as *1* despite a generally favourable distribution. This suggests some users had strong negative reactions.

Sites with lower medians (e.g., *Web 2* and *Web 4*) need to address divisive colour choices that negatively impacted some users and could consider revising their colour palettes to align more with user preferences.

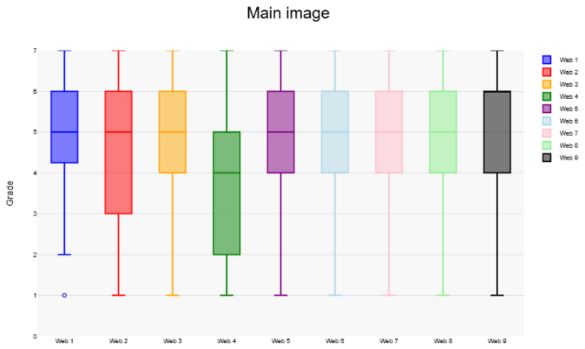

Fig.9. Boxplot of the highest and lowest rated sites based on the main colour.

Figure 9 shows the Best-Rated Main Image is that of *Web 9*. However, *Web 1, Web 2, Web 3, Web 5* also have high median scores, meaning users generally found these images attractive, high-quality, and appropriate. The narrow *IQR* suggests consistent approval, meaning most users had similar positive impressions.

Web 1 has an outlier at *Grade 1,* indicating at least one user strongly disliked its main image. Improving the main image's quality, emotional impact, and relevance can significantly enhance user experience and engagement.

All of the points above and the receiving of the highest score for all dominants, which is consistent with its clean look proves that *Web 9* has the most preferred vision and combination of elements from the user's point of view. It also has one of the highest average scores for overall appearance.

The 9th website features a clean and modern design, with a minimalist style, clear navigation, and well-organized content. They want to make it easier for the user to quickly find offers. The participants in this study highlighted that the large main image is engaging, colourful, and with high-quality, which is tailored to top destinations and points to the idea of travel and creates inspiration for destinations in Europe. The main palette is white with orange accents and black texts. This combination is fresh while maintaining good contrast for readability. Orange is usually associated with energy, sunshine and a positive mood, which complements the „Sun Travel" brand.

Based on their personal perceptions of the services, customers generally form their experiences [16, 17]. The proposed study conducted to examine the relationship of service quality and customer satisfaction. [18] summarizes the importance of the relationship between tourism and information technology is also justified by their place in the national economy.

IV. CONCLUSION.

Results indicated that among all the quality factors, the ease of understanding, response time, and the website intuitive operation (ease to use and navigation) emerged as

the most important. Quality perception was significantly different in terms of gender and age. Visiting the travel agency websites, with regard to the Internet user profile, are the reason of influence the perceived quality and user experience. Finally, a positive correlation was found between the overall perceived quality and purchase intentions.

All of the points above and the receiving of the highest score for all dominants, which is consistent with its clean look proves that site 9 has the most preferred vision and combination of elements from the user‘s point of view. It also has one of the highest average scores for overall appearance.

All sites rely on large, attractive images and clear search engines - typical for the tourism industry. The main differences are in the choice of colour palette and style of presentation of the offers. Some (*Globus Tours, Mistral, Ekvator.bg*) prefer a light background with bright accents, others (*RedTours, Rual Travel*) combine more photos in collages or categories, and Emerald and Alexander Tour are distinguished by more special visual solutions (Northern Lights, desert dunes), which create a specific atmosphere.

For travel websites, it is crucial to have quick and easy navigation, clearly distinguishable search and offers buttons, as well as a strong, attention-grabbing main image or slider that instantly transports the user to the desired destination or highlights promotional offers. Main images and headers play a key role in the overall perception.

The results of this study are considered important for practitioners in the online travel sector, by identifying significant factors that affect online consumers’ willingness to purchase and will also contribute to building the concept of online travel agency quality performance. Additionally, tourism agencies should design guest satisfaction programs and counselling sessions focused on new quality and visual performance their virtual product-websites.

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REFERENCES

[1] M. Wani, A. Raghavan, V.Abraham, et al. “Beyond utilitarian factors:User experience and travel company website successes.“ Inf Syst Front 19, p.769–785 , 22 March 2017, [Online]. Available: https://link.springer.com/article/10.1007/s10796-017-9747-1, [Accessed: Feb. 02, 2025],.https://doi.org/10.1007/s10796-017-9747-1.

[2] Alexander Tour Home Page, [Online]. Available: https://alexandertour.com. [Accessed: Feb. 02, 2025].

[3] Bohemia Home Page, [Online]. Available: https://www.bohemia.bg. [Accessed: Feb. 02, 2025].

[4] Ekvator Home Page, [Online]. Available: https://ekvator.bg. [Accessed: Feb. 02, 2025].

[5] Emerald Home Page, [Online]. Available: https://emerald.bg/bg. [Accessed: Feb. 02, 2025].

[6] Globus Home Page, [Online]. Available: https://www.globuses.com. [Accessed: Feb. 02, 2025].

[7] Mistral Home Page, [Online]. Available: https://www.mistralbg.com. [Accessed: Feb. 02, 2025].

[8] RedTours Home Page, [Online]. Available: https://redtours.bg. [Accessed: Feb. 02, 2025].

[9] RuAL Home Page, [Online]. Available: https://rual-travel.com. [Accessed: Feb. 02, 2025].

[10] Sun Travel Home Page, [Online]. Available: https://www.suntravel.bg. [Accessed: Feb. 02, 2025].

[11] P.Stoyanova, "80%Bulgarians will pay with digital means during their vacations abroad", https://www.investor.bg/a/566-novini-i-analizi/395423-pochti-80-ot-balgarite-shte-plashtat-s-digitalni-sredstva-po-vreme-na-vakantsiite-si-v-chuzhbina?utm_source.com, [Accessed: Feb. 02, 2025].

[12] National Board of Tourism, “Visa survey: 67% of Bulgarians plan winter vacation in the mountains, digital payments preferred“, Feb. 04, 2025. [Online]. Available: https://tourismboard.bg/news/prouchvane-na-visa-67-ot-balgarite-planirat-zimna-pochivka-v-planinata-predpochitani-sa-digitalnite-plashtaniya/. [Accessed: Feb. 06, 2025].

[13] O. M. Ali, The digital economy and its impact on consumption in the regions of Bulgaria. In: 3rd International Conference Spatial Development of Territories (SDT 2020). Atlantis Press, p. 256-261, 2021.

[14] Y. Svezhenov, A. Nikov, L. Dimitrov, Modelling in dynamic user experience design of educational toys packages, In: AIP Conference Proceedings, SP -090015, 13.11.2019.

[15] Statistics Kingdom, “Advanced box and whisker plot maker” [Online]. Available: https://www.statskingdom.com/advanced-boxplot-maker.html [Accessed: Feb. 06, 2025].

[16] S. H. C. Toit , A. G. W. Steyn and R. H. Stumpf, Graphical exploratory data analysis.Springer, 1986, ISBN 978-1-4612-9371-2. OCLC 1019645745.

[17] F. Khan, A. Rasli, R Mdyusoff, and A. Ahmad. "Do Demographic Make a Difference to Job Burnout Among University Academicians?", International Journal of Economics and Financial, Issues 5,p. 229-237, July 2015.

[18] O. Mancheva-Ali and V. Dimitrova, Factors influencing hotel industry, XIV-th International Scientific Conference,At: Agia Triada, Greece, April 2019, [Online]. Available: https://www.researchgate.net/publication/332523141_factors_influencing_hotel_industry, [Accessed: Feb. 06, 2025].