

14th International Scientific Conference "Business and Management 2024" May 16–17, 2024, Vilnius, Lithuania

NEW TRENDS IN CONTEMPORARY ECONOMICS, BUSINESS AND MANAGEMENT

ISSN 2029-4441 / eISSN 2029-929X eISBN 978-609-476-363-2 Article Number: bm.2024.1168 https://doi.org/10.3846/bm.2024.1168

V. NEW PERSPECTIVES ON MANAGEMENT AND RESILIENCE OF BUSINESS ORGANISATIONS

https://vilniustech.lt/bm

THE USER EXPERIENCES DESIGN THEORETICAL AND PRACTICAL ASPECTS

Margarita IŠORAITĖ¹, Laima STEIBLIENĖ², Gitana MEČĖJIENĖ³

¹International Business Department, Faculty of Business Management, Vilniaus kolegija / Higher Education Institution, Didlaukio g. 49, LT-08303 Vilnius, Lithuania ^{2, 3}Banking Department, Faculty of Economy, Vilniaus kolegija / Higher Education Institution, Studentų g. 39A, LT-08106 Vilnius, Lithuania

Received 27 February 2024; accepted 22 April 2024

Abstract. The article analyzes that the user experience design requires effort and investment. Improving the user experience can increase sales, improve customer loyalty, and create a good image for the company. The user experience strategies such as the user research, prototyping, and continuous improvement can be used to create product designs that meet users' needs and improve their experience. A successful user experience design is critical to a product's success, as providing a good experience makes users more likely to become loyal customers and recommend the product to their friends. A well-designed user experience can help increase product sales, improve the user experience, and reduce the number of support requests. To ensure a good user experience, it is necessary to follow certain design principles and use the right strategies. A good product without design is not enough – it is important that it is convenient to use and meets the needs of users. A scientific question. How to improve the user experience design of the e-store? The authors of the article aim to investigate the peculiarities of the user experience design of the e-store. The article was prepared on the basis of the analysis of scientific literature and the analysis of interview data. A semi-structured interview method was used.

Keywords: user experiences design, user experiences design indicators, use experiences design cases study.

JEL Classification: M30, M31.

1. Introduction

The business is currently looking for new ways to ensure that the service or product provided is ideal for the user and the overall feedback means that our service/product is recommended by word of mouth. In business, we call this phenomenon Customer Experience. Often, when providing a product/service, we reach a dead end, which leads to the fact that the user may be dissatisfied with something, even though the product is fully functional. The user experience design is a hot topic. It has been extensively studied by such scholars as Albert and Tullis (2022), Zhu and Hou (2021), Wang et al. (2020), Pei et al. (2020). IJsselsteijn et al. (2007), Jevremović et al. (2022), Hussain et al. (2022), Battarbee and Koskinen (2005), Csikszentmihalyi (1990), Pellas et al. (2021).

Scientific question. How to improve the user experience design of the e-store?

*Purpose.*The authors of the article aim to analysis scientific literature and to investigate the peculiarities of the user experience design of the e-store.

Research methods. The article was prepared on the basis of the analysis of scientific literature and the analysis of semi structural interview data.

Research methodology – analysis of scientific literature and semi structural interview used in the work. Literature analysis is a theoretical method of researching scientific literature and scientific articles. This article analyzes, compares, and evaluates other scholars' literature on the user experience design that addresses a research problem. The literature analysis shows the necessity of the study and the significance of the study.

Results – the study evaluated the effect of the user experience on their satisfaction in the case of the electronic store. And it showed that an effective good search is one of the most important aspects for users.

^{*} Corresponding author. E-mail: misoraite@gmail.com

Practical implications. The user experience design helps a company invest in the improvement of search algorithms, so that users can quickly and easily find the goods they want. This includes not only searching for basic keywords, but also filtering by the category, author, year of publication and other important criteria. The recommendation system is also an important aspect, which indicates that a company should improve its recommendation algorithms in order to provide personalized and targeted good suggestions based on users' browsing history, previous purchases and preferences.

Originality/value – an attractive design, the website usability are related to aspects such as speed, user-friend-liness, security, technical details, website navigation, content, and search engine optimization are among the most important criteria for evaluating users' experience.

2. User experience design concept

Discovering the user needs and problems is important in finding solutions. Solutions help create products that are easy to use and provide a good user experience for users. The creation of user experience design consists of important stages that help to create an individual, unique design adapted to the field of business activity – a deep analysis is carried out in various sections, the user experience prototype is created, large-scale testing is carried out and design implementation is carried out. User experience design helps to ensure that using a product is simple, convenient and satisfying for the user.

Berni and Borgianni (2021) stated that tracking the user experience is important. Today, not a single successful company is complete without monitoring the user experience. The user experience is about digging deep and understanding what customers need, what they value, as well as what they are capable of and where they need help. Therefore, the user experience consists of all user interactions with a product, service or system. Berni and Borgianni (2021) mentioned that in addition to the general division into "positive" and "negative", three dimensions of experience can be distinguished. Ergonomic, cognitive, and affective dimensions are defined here as key features that describe the overall experience.

Li et al. (2022) mentioned that nowadays consumers pay more attention to the services and experiences provided by products, tangible products with intangible experiences. According to Li et al. (2022), the user experience design must be linked to the development of a sustainable society.

Hu et al. (2022) mentioned that the user design process includes identifying customer needs, establishing design specifications. According to Hu et al. (2022), a special attention is paid to the needs of target customers. The basis of the identified needs of customers, it will be specified exactly what product is needed to meet the needs of the customer.

Doi and Doi (2023) investigated the effect of a product usage on consumers' subjective evaluation before usage. According to Doi and Doi (2023), the results show that consumers had higher expectations of products when they could more easily imagine how to use them.

Musulin and Strahonja (2023) argued that the user experience (UX) can be treated as a personal outcome of interaction with digital products and services, which can certainly increase the value for the customer. According to Musulin and Strahonja (2023), UX should be included in strategic plans and business models. As stated by Musulin and Strahonja (2023) business models should reflect a sustainability-oriented strategic concept that creates the value on an economic, social, and environmental basis.

Marques et al. (2021) in their article pay a great attention to the quality of the user experience by evaluating emotions. Much attention is paid to the importance of UX evaluation. Marques et al. (2021) mentioned that despite the variety of methods, it is difficult to capture the problem that led to bad UX. Therefore, it is difficult to determine what caused a negative user experience.

Fayez et al. (2023) mentioned that traditional student perceptions reveal students' readiness to accept the new digital transformation, while the user experience reflects transformation practices. According to Fayez et al. (2023), the concept of UX itself has grown into an emerging trend in the evaluation of human-computer interaction, making it relevant for online lessons. Fayez et al. (2023) argued that basic UX principles complement a student-centered mindset that contributes to a better online course design.

Hussain et al. (2022) stated that consumers nowadays want innovative products that provide a positive and proactive experience. According to Hussain et al. (2022), a positive UX design is determined by the user satisfaction, the context of use, quality, enjoyment, ease of use.

Luther et al. (2020) argue that the user experience is a subjective matter. According to Luther et al. (2020), however, in order to create long-term consumer loyalty to a brand, it is no longer enough to keep consumers satisfied, it is necessary to consider emotional factors and strive for a positive and trust-building experience.

Krueger et al. (2020) argue that consumers prefer products and services that promote positive experiences. According to Krueger et al. (2020), positive experiences promote a long-term use and consumer loyalty. Pell et al. (2021) stated that UX is the internal state of the user, which includes inclinations, expectations, needs, motivation and mood. Merritt and Zhao (2021) mentioned that today's customers are more tech-savvy than ever, making it increasingly difficult to remain competitive.

Summarizing the opinions of the above authors it can be concluded that not a single successful company is complete without monitoring the user experience (Berni & Borgianni, 2021), consumers pay more attention to the services and experiences provided by a product (Li et al., 2022), it will be specified exactly what product is needed to meet the needs of the customer (Hu et al., 2022), business models should reflect a sustainability-oriented

strategic (Musulin & Strahonja, 2023), investigated the effect of a product usage on consumers' subjective evaluation before usage (Doi & Doi, 2023), it is difficult to capture the problem that led to bad UX (Marques et al., 2021).

Summarizing the opinions of the above authors about the user experience design, it can be said that the user experience is dynamic and changeable: companies are recommended to create experiences focused on specific topics, strengthen positive impressions through symbols, eliminate negative aspects, and create a memorable image. In this way, it aims to fully stimulate users, creating an enriched and memorable experience for them. Thus, the user experience design is closely related to customer experience, both in physical and digital environments, and involves users' rational perceptions and emotions. Therefore, not only the quality of the product is taken into account, but also the creation of a memorable, meaningful experience for the user. Experiential marketing is one of the essential factors in promoting customer satisfaction and loyalty to a product or service.

3. User experiences design indicators

The user experience indicators are quantitative measurements that are necessary to evaluate and measure various aspects of the user interaction with products. Albert and Tullis (2022) argue that the user experience indicators must be designed to be observable and quantifiable. In other words, they need to be measured and expressed in numerical units. Some of the most common user experience indicators are the probability of successful task completion, user satisfaction, and error rate. These indicatorsmetrics are used to measure different aspects of the user experience such as efficiency (ability to complete a task), productivity (how much effort is required to complete a task), and satisfaction (the level of the user satisfaction after completing a task). Zhu and Hou (2021) conducted a study on mobile applications in government services, where previously mentioned user experience indicators of the task success probability, user satisfaction, and error rate were critical to improving government service applications. In this context, the task success rate measured how successfully, and efficiently certain government tasks were completed using mobile applications. The user satisfaction score measures overall user satisfaction, while the error rate measures the frequency and impact of problems encountered by users. The aim was to improve the efficiency and reliability of government services delivered digitally by improving the user experience.

Albert and Tullis (2022) state, unlike any other indicators, e.g. indicators that measure physical characteristics such as distance or speed that the user experience metrics focus on the interaction between the user and the product. These indicators aim to capture different aspects of the user experience, for example, how easy it is for the user to use a certain product, how easy it is and

how difficult it is, and how it meets the user's needs and expectations. To be useful, the user experience metrics must be based on a consistent and reliable measurement system. This is the only way to ensure that the results of different studies or assessments are comparable.

4. Use experiences design measurement and principles

At present, there are increasing changes in consumer behavior towards brands. Consumers increasingly choose not only functional or physical brands, but pay more attention to the emotional characteristics of the brand, the user experience. Goods are more and more often characterized by technologically and physically similar properties, so a homogenous offer increasingly encourages consumers to rely on the image of the brand. Many organizations are aware of the importance of building and developing a brand image in order to create a positive view of their brand in the minds of consumers.

In the business world, especially recently, customer orientation is often emphasized, i.e. the attention is paid to the user and meeting his expectations and needs. The user experience should be the goal of every successful business, because when the price and quality of a product or service are similar, it is perhaps the most important competitive factor that can help you stand out in the market. Creating the user journey is an important part of the marketing strategy "The user experience with a brand or company is best described by the user journey - to purchase a product or service, a customer must perform certain actions, such as clicking on a banner, going to a store, etc. t., - says D. Juozulynas. - Often the consumer journey begins long before he buys a product, and the experience he takes away from it accompanies him much longer than the doors of the store or service company close."

Kocaballi et al. (2019) emphasized an approach based on developing a rich understanding of users' needs, wants, dreams and motivations through various methods, including visual and textual data and creative tasks during the design phase. Kocaballi et al. (2019) approach provides a holistic view of the user experience, focusing on understanding the interaction between users, technology and the environment.

Wildner et al. (2015) developed a model to measure the subjective perception of the user experience. According to Wildner et al. (2015), the model includes task-oriented characteristics reflecting learning and operability, self-oriented characteristics reflecting more general human needs, aesthetic characteristics reflecting the sense of the product's appearance and feel.

Wang et al. (2020) argued that the user actions must be consistent throughout the process. The whole process must be computer-friendly and respect the user experience. According to Wang et al. (2020), it is necessary to ensure that products maintain the same basic functions across different mobile devices, such as smartphones, phones, and tablets, and to define their functions for different usage scenarios.

IJsselsteijn et al. (2007) found out that central to all of these experiences was a psychological state they called flow, an optimal state of enjoyment in which people are fully engaged in an activity. IJsselsteijn et al. (2007) observed that this experience was similar for all, regardless of differences in culture, social class, age, or gender.

According to Hussain et al. (2018), a common method for eliciting affective and cognitive aspects is through retrospective oral or written questionnaires in which the user is asked questions about his or her experiences.

Sankowski and Krause (2023) argue that measurement methods are usually designed for a certain level of user interaction and therefore require functional and physical prototypes. However, there are also efforts to implement the evaluation of human-centered aspects even further in the development process.

Ke and Yoon (2020) mentioned that positive emotions foster creativity and connectedness and enable the development of long-term intellectual, social and psychological resources. According to Ke and Yoon (2020), this positive effect has led to increased interest in the development of positive emotions. As stated by Ke and Yoon (2020), it is important to create distinctive and salient positive emotions such as pride, admiration, and surprise through unique utility features.

Vrhovac et al. (2023) analyzed that customer experience with last-mile delivery is a relatively new and understudied aspect. Vrhovac et al. (2023) contribution to this study is that they attempted to develop a measure of the user experience in the product delivery process. According to Vrhovac et al. (2023), the development of this tool will also allow the comparison of the experiences of different users in the last mile delivery process, which can be very important in order to improve the existing services in this area in practice.

According to Franzoni and Bonera (2019), experience depends not only on what destination it provides but also on how it interacts with the environment. Franzoni and Bonera (2019) argue that experience is internally created and the user constructs his own experience based on past experiences, education, values, attitudes, and beliefs.

Noguchi et al. (2013) mentioned that "the user experience design" focuses on improving the interface of products to facilitate usage, taking into account various physical and psychological needs and wants of end users. According to Noguchi et al. (2013) experience design involves both passive and active involvement of end users.

Yang et al. (2020) proposed a methodology to measure the user experience (UX) using artificial intelligence-aided design (AIAD) technology in mobile application development. To protect users' privacy, only a few dimensions of information are used when browsing and using the mobile application.

The company strives to be attractive to customers so that they return and share their positive experiences with others. In this way, it is aimed to take into account and understand what people need most. To achieve this, several basic principles are used that can help companies reach the desired customer. One of the most important principles of the user experience design is to understand the user needs, preferences and weaknesses. Another principle is representativeness. One of the examples of application of the principle is the design of a web page. It should be safe and easy to use. Closely related to this principle is the fact that the company's website will attract more users. Another important principle of the user experience design is to set goals for your company that are clear and linked to the needs of users. For this, various techniques can be used to help track the company's progress towards the set goal. The next principle of the user experience design is testing and innovation. Testing should be done not only within the team but also with real users to find out exactly what can be improved and what is already creating a positive experience for users. The next principle of the user experience design is learning and growth. Users' reviews can help monitor this. It can also be recorded in documents and shared with other people during training. The final principle of experience design is to involve the entire team in improving the user experience. Employees who deal with customers every day know and understand what they really need.

5. Research methodology and data analysis

5.1. Research methodology

The interview is used and widely applied at various stages of the research in order to define the problem and specify the research problem. Interviews can also be used to prepare the methodology of large surveys/surveys, testing, and developing questionnaires. In qualitative studies, the purpose of which is to explore a problem more deeply, to reveal emotional, experiential, or other aspects, interviews can be successfully used as the main method of information gathering. A semi-structured interview method was used.

As Bitinas et al. (2008) state, semi-structured interviews are most acceptable in a qualitative research. The researcher foresees in advance the topics and problems that will be discussed during the interview but does not stick to the order of questions or the intended words to be said, freely changes their places, and asks additional questions. According to Bitinas et al. (2008), the main advantage: more detailed, structured data is obtained, compared to an informal interview, and the interview remains informal, it takes place during the interview.

The purpose of the research is to analyse-users' experience in the online bookshop of patogupirkti.lt and to provide guidelines for electronic bookstores regarding the more efficient creation of the user experience in online bookstores, a qualitative study was conducted through interviews. During the interview, 7 respondents were interviewed.

Purposive sampling was used to select the interview participants. The following criteria were used for the

selection of respondents: 1) position (middle manager); 2) awareness of the internet marketing situation in the company; 3) at least 5 years of work experience in the field of internet marketing. Sample volume using half structured interview method consisted of 7 respondents The interview was conducted in February 2024 by interviewing respondents in a semi-structured interview.

Table 1. Instrument for the interview questionnaire

Interview question	The authors, who examined aspect
Overall customer satisfaction Webside	Guo et al. (2023), Pei et al. (2020)
Convenience and efficiency of the website	Cho et al. (2022)
Website design	Jevremović et al. (2022)

5.2. Results

When asked about overall customer satisfaction on the site, respondents said that for many shoppers, the digital space is much more natural than the physical one, so they will expect to find a much faster response speed, reliable information, convenient payment, and delivery solutions here (see Table 1). During the interviews, it was found out that efficient book search is one of the most important aspects for users. This means that the website should invest in improving search algorithms so that users can find the books they want quickly and easily. This includes not only searching for basic keywords, but also filtering by category, author, year of publication and other important criteria. Respondents positively assess the billing process and customer service.

Responding to the question of how they value the convenience and efficiency of the website, the respondents said that the website design is the first impression of the website. Customers usually get to the website page from search engines, and social networks, through recommendations. Therefore, it is important that customers navigate easily and conveniently and quickly find what they came here for. A website with a neat, attractive, and user-friendly design website trust, which encourages people to spend their money and recommend the website to other potential customers. The recommendation system is also an important aspect, which shows that estore should improve its recommendation algorithms to provide personalized and targeted book offers, based on users' browsing history, previous purchases, and preferences. This can help users discover new books that match their tastes and interests, driving higher user engagement and longer time spent on the site.

Responding to the question of how they value website design, the respondents said that an attractive design is necessary for every website. It is necessary to assess whether the customers who visit the website for the first time clearly understand who you are and what you offer them. The design of the website should seem to encourage you to take the action you are aiming for, such as

purchasing a product or service. The usefulness of a website is related to the aspects such as speed, user-friend-liness, security, and technical details. Site navigation is also important. Respondents indicated that the content is important. Website content should be legible. If the content is not relevant and useful to the visitors, there is a high probability that they will simply leave the site and go to competitors. The style is also important, since it reflects the brand and creates a positive impression on customers. Respondents also noted that website design has a significant impact on a search engine optimization. In order to optimize your website design, it is also important to use targeted keywords.

6. Discussions

Schmitt (1999) emphasizes that experiential marketing is not focused solely on the product or service and its features, but it also includes the experiences - both emotional and rational - that companies create for their customers. This means that the focus is not only on customer experience, but also on its management, requiring marketing strategies and decisions to be updated based on five key elements: sensation, emotion, action, thinking and interaction. Important aspects of experiential marketing include consumer experience, consumption as a holistic process, customer rationality and emotionality, and the variety of applied marketing methods. According to Yang et al. (2020), experiential marketing is a strategy that focuses on how consumers perceive and evaluate products, services, companies or brands based on their experiences. The essence of this approach is to create a positive experience that not only reinforces the value of a product, brand or company, but also emphasizes the emotions and sensations of consumers, rather than the quality of products or services. Experiential marketing is dynamic and changeable: companies are recommended to create experiences focused on specific topics, strengthen positive impressions through symbols, eliminate negative aspects, and create a memorable image. In this way, experiential marketing aims to fully stimulate consumers, creating an enriched and memorable experience for them.

This study presents that tracking the user experience is critical for business growth. Today, not a single successful company is complete without monitoring the user experience. The user experience is about digging deep and understanding what customers need, what they value, as well as what they are capable of and where they need help. Therefore, the user experience consists of all user interactions with a product, service, or system. Creating interesting and unique experiences is one of the best ways to connect with customers in order to ensure that they want to learn more about the brand and the features it offers.

According to the research conducted, the key to creating a more effective user experience in e-book stores is to ensure an intuitive and fast search system, convenient

navigation, high-quality customer service and a well-adapted website design for mobile devices, since these aspects strongly contribute to users' satisfaction and drive their purchase intentions, which are essential factors for a successful - e-bookstore.

7. Conclusions

- 1. The user experience includes everything your user feels and experiences while using the product. A good user experience means that visitors can easily find what they are looking for, understand the structure of the site, and feel comfortable using your site. A well-designed user experience makes it easier for visitors to take desired actions, such as ordering services or purchasing goods. Satisfied users are more likely to return to your site, recommend it to others, and engage with your business. The user experience is a critical factor in visitor satisfaction and website success. The user experience is dynamic and changeable: companies are recommended to create experiences focused on specific themes, strengthen positive impressions through symbols, eliminate negative aspects, and create a memorable image that involves all the user's senses - sight, smell, touch, taste and hearing. In this way, the aim is to fully stimulate-users, creating an enriched and memorable experience for them.
- 2. With the rapid growth of the number of this form of trade, the attractiveness of websites to the user is one of the indicators of a successful business in the digital space. Therefore, it is very important to know how users evaluate websites and what indicators influence their choices. From the point of view of researchers, the digital space where products and/or services are purchased is equivalent to a retail store, as it allows consumers to see the product.
- 3. The principles of the user experience design are very useful when creating and using a digital product. They help designers create user-friendly interfaces, understand the role of the user in software development, product managers make the right decisions, inform marketers about the customer preferences, and help business owners meet consumer expectations.
- 4. Respondents said that an attractive design and the website usability is related to such aspects as speed, user-friendliness, security, technical details, website navigation, content and search engine optimization that are the most important criteria for evaluating the user experience.

References

- Albert, B., & Tullis, T. (2022). Measuring the user experience: Collecting, analyzing, and presenting UX metrics. Morgan Kaufmann.
- Battarbee, K., & Koskinen, I. (2005). Co-experience: User experience as interaction. *CoDesign*, *1*(1), 5–18. https://doi.org/10.1080/15710880412331289917
- Berni, A., & Borgianni, Y. (2021) Making order in user experience research to support its application in design and be-

- yond. *Applied Sciences*, 11(15), Article 6981. https://doi.org/10.3390/app11156981
- Bitinas, B., Rupšienė, L., & Žydžiūnaitė, V. (2008). *Kokybinių tyrimų metodologija* (vadovėlis vadybos ir administravimo studentams). Socialinių mokslų kolegija.
- Cho, Y., Lee, D., & Park, I. (2022). Comparison of media company performance efficiency based on the search engine's method of providing news content (External links vs. internal links). *Applied Sciences*, 12(23), Article 12327. https://doi.org/10.3390/app122312327
- Csikszentmihalyi, M. (1990). Flow. The Psychology of optimal experience. Harper & Row.
- Doi, T., & Doi, S. (2023) Which hierarchical levels of value description of design concepts enhance anticipated UX? effects of product type on user expectations. *Systems*, *11*(5), Article 230. https://doi.org/10.3390/systems11050230
- Fayez, O., Ozfidan, B., & Ismail, H. (2023). The praxis of user experience (UX) in the design of undergraduate online classes: Framing the perceptions of engineering and social sciences students. Sustainability, 15(4), Article 3300. https://doi.org/10.3390/su15043300
- Franzoni, S., & Bonera, M. (2019). How DMO can measure the experiences of a large territory. *Sustainability*, 11(2), Article 492. https://doi.org/10.3390/su11020492
- Guo, J., Zhang, W., & Xia, T. (2023). Impact of shopping website design on customer satisfaction and loyalty: The mediating role of usability and the moderating role of trust. *Sustainability*, *15*, Article 6347. https://doi.org/10.3390/su15086347
- Hu, H., Liu, Y., Guo, X., & Fu, C. (2022). A conceptual design specification based on user aesthetic information analysis and product functional reasoning. *Machines*, *10*(10), Article 868. https://doi.org/10.3390/machines10100868
- Hussain, J., Azhar, Z., Ahmad, H. F., Afzal, M., Raza, M., & Lee, S. (2022). User experience quantification model from online user reviews. *Applied Sciences*, *12*(13), Article 6700. https://doi.org/10.3390/app12136700
- Hussain, J., Khan, W. A., Hur, T., Bilal, H. S. M., Bang, J., Hassan, A. U., Afzal, M., & Lee, S. (2018). A multimodal deep log-based user experience (UX) platform for UX evaluation. Sensors, 18(5), Article 1622.
 - https://doi.org/10.3390/s18051622
- IJsselsteijn, W. A., Kort, de, Y. A. W., Poels, K., Jurgelionis, A., & Bellotti, F. (2007). Characterising and measuring user experiences in digital games. In R. Bernhaupt & M. Tscheligi (Eds.), Proceedings of the International Conference on Advances in Computer Entertainment Technology (ACE 2007) (pp. 1–4). ACM Digital Library.
- Jevremović, M., Gheorghiţă, C., Cerić, V., Blăjină, O., Jelić, Z., Ilić, M. P., & Bucea-Manea-Ţoniş, R. (2022). An empirical study on website interactivity impact among a student group, beneficent for companies, and other users. Sustainability, 14, Article 4507. https://doi.org/10.3390/su14084507
- Ke, J., & Yoon, J. (2020). Design for breathtaking experiences: An exploration of design strategies to evoke awe in humanproduct interactions. *Multimodal Technologies and Interac*tion, 4(4), Article 82. https://doi.org/10.3390/mti4040082
- Kocaballi, A. B., Laranjo, L., & Coiera, E. (2019). Understanding and measuring user experience in conversational interfaces. *Interacting with Computers*, 31(2), 192–207.
 - https://doi.org/10.1093/iwc/iwz015
- Krueger, A. E., Pollmann, K., Fronemann, N., & Foucault B. (2020). Guided user research methods for experience

- design a new approach to focus groups and cultural probes. *Multimodal Technologies and Interaction*, 4(3), Article 43. https://doi.org/10.3390/mti4030043
- Li, W., Zhou, Y., Luo, S., & Dong, Y. (2022) Design factors to improve the consistency and sustainable user experience of responsive interface design. Sustainability, 14(15), Article 9131. https://doi.org/10.3390/su14159131
- Luther, L., Tiberius, V., & Brem, A. (2020). User experience (UX) in business, management, and psychology: A bibliometric mapping of the current state of research. *Multimodal Technologies and Interaction*, 4(2), Article 18.

https://doi.org/10.3390/mti4020018

- Marques, L., Matsubara, P. G., Nakamura, W. T., Ferreira, B. M., Wiese, I. S., Gadelha, B. F., Zaina, L. M, Redmiles, D., Conte, T. U. (2021). Understanding UX better: A new technique to go beyond emotion assessment. *Sensors*, *21*(21), Article 7183. https://doi.org/10.3390/s21217183
- Merritt, K., & Zhao, S. (2021). An innovative reflection based on critically applying UX design principles. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(2), Article 129. https://doi.org/10.3390/joitmc7020129
- Musulin, J., & Strahonja, V. (2023). User experience, business models, and service design in concert: Towards a general methodological framework for value proposition enhancement. *Sustainability*, 15(16), Article 12509.

https://doi.org/10.3390/su151612509

- Noguchi, M., Ma, N., Woo, C. M. M., Chau, H.-w., & Zhou, J. (2013). The usability study of a proposed environmental experience design framework for active ageing. *Buildings*, 8(12), Article 167. https://doi.org/10.3390/buildings8120167
- Pei, X.-L., Guo, J.-N., Wu, T.-J., Zhou, W.-X., & Yeh, S.-P. (2020). Does the effect of customer experience on customer satisfaction create a sustainable competitive advantage? A comparative study of different shopping situations. Sustainability, 12, Article 7436. https://doi.org/10.3390/su12187436

- Pellas, N., Mystakidis, S., & Christopoulos, A. (2021). A systematic literature review on the user experience design for game-based interventions via 3D virtual worlds in K-12 education. *Multimodal Technologies and Interaction*, *5*(6), Article 28. https://doi.org/10.3390/mti5060028
- Sankowski, O., & Krause, D. (2023). The human-centredness metric: Early assessment of the quality of human-centred design activities. *Applied Sciences*, *13*(21), Article 12090. https://doi.org/10.3390/app132112090
- Schmitt, B. (1999). Experiential marketing: A new framework for design and communications. *Design Management Journal*, 10(2), 10–16.

https://doi.org/10.1111/j.1948-7169.1999.tb00247.x

- Vrhovac, V., Vasić, S., Milisavljević, S., Dudić, B., Štarchoň, P., & Žižakov, M. (2023). Measuring e-commerce user experience in the last-mile delivery. *Mathematics*, *11*(6), Article 1482. https://doi.org/10.3390/math11061482
- Wildner, R., Kittinger-Rosanelli, Ch., & Boseick, T. (2015). How good is your user experience? Measuring and Designing Interactions. *GfK Marketing Intellingence Review*, 7(2). https://doi.org/10.1515/gfkmir-2015-0019
- Wang, R., Zhang, X., & Yang, D. (2020). Research on user experience design consistency of internet products based on user experience. *Journal of Physics: Conference Series*, 1549, Article 032059.

https://doi.org/10.1088/1742-6596/1549/3/032059

Yang, B., Wei, L., & Pu, Z. (2020). Measuring and improving user experience through artificial intelligence-aided design. Frontiers in Psychology, 11.

https://doi.org/10.3389/fpsyg.2020.595374

Zhu, J., & Hou, H. (2021). Research on user experience evaluation of mobile applications in government services. *IEEE Access*, 9. https://doi.org/10.1109/ACCESS.2021.3070365