








# “Consumer engagement in the conditions of business digitization: A case study of the hotel industry in Ukraine”

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# CONSUMER ENGAGEMENT IN THE CONDITIONS OF BUSINESS DIGITIZATION: A CASE STUDY OF THE HOTEL INDUSTRY IN UKRAINE

## Abstract

Competition in the hotel industry makes it necessary to study innovative ways to preserve and increase customer base. Effective interaction with customers is evidence of hotels' innovative activity determined by the active implementation of marketing concepts and the development of information technologies. Therefore, customer engagement involves digitalizing the "hotel-consumer" interaction process. This study aims to determine the components of digital customer engagement in the hotel industry using systematization, generalization, survey, and econometric models. The components of digital customer engagement include recognition, interest, communications, consumer experience, loyalty, and intentions of repatronage. Econometric models used the data of hotels in Kyiv (Ukraine) to prove the dependence of their income on the costs of digital consumer engagement. For financial indicators, the study surveyed hotel managers and stakeholders. The selected indicators have a significant influence on hotel income. In the case of a linear model ("Khreshchatyk" hotel), the parameters show how many units the effective feature will change when one-factor characteristic changes by one unit (assuming other factors are constant). In the case of power-law models ("Bratislava" and "Ukraine" hotels), the parameters are essentially elasticity coefficients that demonstrate the sensitivity of income changes to changes in factor characteristics. Accordingly, the coherence of implementation of all components in the digital engagement of hotel services' consumers ensures an increase in service provision volume and hotel operations' efficiency.

## Keywords

digitization, hotel, business process, consumer engagement, digital technologies

## JEL Classification

L25, L83, O10

## INTRODUCTION

A high level of competition for customers characterizes the business environment of hotels. Hotel services, unlike goods, are first sold and only then produced (provided) and consumed, and the processes of providing services and their consumption coincide. That is why the initial stage of the technological cycle of customer service, which preventively forms the consumer attractiveness of hotel service, is the engagement of a potential consumer in its purchase. Modern tools in attracting hotel service consumers can ensure stable relations with existing and potential consumers and form new approaches to understanding consumer behavior.

Technological changes and the increasing influence of digitalization on all spheres of the economy create new opportunities for development and threats of permanent crises and business risks. Cvent (2022) identified transformation trends in hotels: digitization of relationships with consumers and suppliers; direct online booking; investments in

mobile applications; virtual tours with VR, AR, and 3D technologies; sales of virtual and hybrid spaces; conducting hybrid events; use of interactive elements on websites; creation of safe environment (contactless service, contactless payments; implementation of smart technologies). A fundamentally new tool for the hotel business is the ChatGPT tool, which can increase the personalization of service and consumer satisfaction, reaching a larger segment of potential customers. Therefore, under the influence of digitalization, operational processes of hotels are changing, providing competitive advantages, which makes it possible to legitimately consider digital transformation as a process of integrating digital technologies into business processes, which is focused on the internal (operational activity) and external environment (creation of consumer value). This makes it possible to systematically counteract threats and develop the existing potential of the hotel business to compete, considering objective changes in the global economic environment. Therefore, the subjects of the hotel business are faced with fundamentally new challenges and problems caused by digitalization, primarily technological and innovative changes that relate to an important area of activity, such as consumer engagement.

## 1. LITERATURE REVIEW

Customer engagement is considered in various aspects as a process that influences consumer behavior and leads to loyalty (Ndhlovu & Maree, 2022; Islam et al., 2019; Bowden, 2009; Verhoef et al., 2010; Hollebeek, 2011; Gummerus et al., 2012; Lim & Rasul, 2022).

It is vital to use innovations to attract consumers. Digitalization is the logical continuation of implementing and scaling innovative technologies in all spheres of activity, which “pushes companies to change their business models” (Weill & Woerner, 2018). It refers to the “widespread implementation of digital technologies” (Bosovska et al., 2022) and involves “maximizing the full use of the potential of digital technologies in all aspects of business” (Banche, 2020). There is a dynamic growth of digital implementations both in the hotel business (Boiko et al., 2022; Fang & Partovi, 2022; Lim et al., 2018; Melián-González & Bulchand-Gidumal, 2016) and in consumer engagement (Harrigan et al., 2017; Hollebeek & Belk, 2021; Touni et al., 2022; Hsu, 2023; Roy et al., 2023).

As for the hotel business, the initial powerful trigger for the active implementation of digital technologies was the global COVID-19 pandemic, which limited communications and increased the epidemiological danger. Since 2019, hotel businesses have begun to actively implement new digital technologies (Tajeddini, 2011; Hasenzahl et al., 2019; Bovsh et al., 2021; Ingaldi & Klimecka-Tatar, 2022; Boiko et al., 2022; Kaliappen & Hassan, 2022; Fisun et al., 2022; Gorina et al., 2022;

Okhrimenko et al., 2023). The main implementation tools include hotel websites, online booking systems, internet services, social media (Hsu, 2012; Iranmanesh et al., 2022; Zakić et al., 2022; Cvent, 2022), artificial intelligence (Iranmanesh et al., 2022; Li, 2022; Hsu, 2012), mobile applications, big data, self-service technologies, smart technologies, virtual reality tools (Baykal & Ayyıldız, 2022; Iranmanesh et al., 2022), digital learning, development, digital performance evaluation, digital reward (Melián-González & Bulchand-Gidumal, 2016; Ioannou et al., 2020; Abdelaal et al., 2022), blockchain, drones, 3D/4D printing, robotics, and autonomous cars (Aloulou, 2019; Lee et al., 2021). In general, digitalization involves a qualitative transformation of business processes based on information, communication, and Internet technologies.

Digitization is even considered a “challenge” to the existing entities (owners, staff, business processes) and the general state or situation in the hotel industry (Buer, 2019). It has great importance in providing wide user benefits and has various manifestations. Firstly, it contributes to the growth of the incomes of business subjects (Melián-González & Bulchand-Gidumal, 2016; Munasinghe et al., 2022; Suder et al., 2022), their productivity and sustainability (Barna, 2021). In addition, it can reduce costs for staff training and customer service, particularly by saving on software development costs while simultaneously guaranteeing the security and stability of systems (Li, 2022).

Secondly, it significantly affects the increase in competitiveness and the emergence of competi-

tive advantages (Ingaldi & Klimecka-Tatar, 2022; Zaridis et al., 2019). Thirdly, it generally contributes to the development of personnel and human resource management system in qualitative and quantitative aspects (Hazal & Mahmut, 2022).

Fourthly, it helps establish the environmental sustainability of the hotel business; in particular, the introduction of digital technologies into the personnel management system significantly impacts hotel environmental indicators (Abdelaal et al., 2022; Aloulou, 2019). Fifthly, a sufficient level of digitalization can increase transparency and help track corrupt practices and other unethical behavior (Romero-Martínez & García-Muiña, 2021).

Scientific research on digitization has proven the relationships and interactions between various components and areas of hotel activity. Suder et al. (2022), when studying the role of digital technologies in the tourism and hotel business, substantiated the relationships between pro-activeness, innovation, digitalization, productivity, and growth of hotel business entities. Accordingly, digitalization has a positive effect on the development of these subjects. Another aspect is the impact of digital marketing on consumer perception of hotel service quality and brand trust (Juliana et al., 2022). Moreover, as stated by Zakić et al. (2022), hotel consumers' satisfaction depends on the availability of digital technologies according to customer age. Therefore, there is a need to assess the demographic aspects of consumers and, if necessary, make the necessary adjustments.

Innovativeness, dynamism, and variability of digitalization of business processes of hotel business entities in the context of attracting consumers can become a determining factor in the stable growth of hotel business (Kostynets et al., 2020; Mazaraki et al., 2019). In 2023, 60% of brands invested in digital consumer engagement to improve their ability to meet their changing needs (Jann, 2023).

The study of innovative ways of interaction between consumers and businesses using digital technologies, and the definition of metrics of digital engagement of consumers, which cover the relationship between a business entity and consumers through digital channels of interaction, led to the formation of innovative business models –

digital engagement (Ringcentral, n.d.; Lentz, n.d.; Hueffner, 2022).

Kane et al. (2015) identified competencies capable of forming innovative business models for digitally engaging consumers. These are personalization of products and services; closed-cycle inherent in the cycle of services to consumers of hotel services; joint use of assets (thanks to the two-way online platform “Airbnb,” homeowners rent housing to tourists); payment upon receipt of service; the ecosystem of cooperation; and flexible and adaptive organization of activities.

New mechanisms of consumer engagement are being formed with the development of digitalization (Bijmolt et al., 2010; Harrigan et al., 2017; Hanh Le et al., 2021; So et al., 2021; Touni et al., 2022), and their toolkit is expanding with the development of social media (Harrigan et al., 2017; Hollebeek & Belk, 2021; Touni et al., 2022). Therefore, the current business landscape of the hotel business requires research into the basic components of the process of attracting consumers in order to improve management efficiency.

Following the literature review, the goal of this study is to determine the components in the digital engagement process of hotel services' consumers and its impact on the performance of hotels.

## 2. METHODS

Systematization methods were used to study consumers' digital engagement, in particular, summarizing the experience of using digital technologies by Ukrainian hotels. The results of digital consumer engagement are reflected in value indicators, namely hotel revenue indicators. The paper investigates the functional dependence of hotel income on the main influencing factors. In this dependence, the volume of net income (resultative indicator  $Y$ ) was chosen as the effective indicator, and the volume of sales expenses ( $X_1$ ), the wage fund ( $X_2$ ), costs for digitalization ( $X_3$ ) of business processes were selected as factor indicators. Data on the financial indicators of the selected hotels in Kyiv (Ukraine) were obtained from the national reporting portal of Ukrainian enterprises YouControl; the indicators of the number of ex-

penses for the digitalization of business processes are based on a survey. Three operating hotels that use digitization tools were selected for the study: 4-star hotels “Bratislava,” “Ukraine,” and “Khreshchatyk.”

Experts in this study were specialists in the hotel business (managers and top managers of the studied hotels, a representative of the NGO “Tourist Association of Ukraine,” a representative of the State Tourism Development Agency). With the help of an in-depth interview, these experts determined the percentage ratio of digitization costs relative to the total costs. They formed a list of the main influencing factors from the list of proposed ones. According to the survey and the awarding points for each feature, three main factor features were determined. When checking the consistency of experts’ opinions, the concordance coefficient was 0.848, corresponding to a high degree of agreement with the respondents’ opinions. The research error was 0.015, which is very insignificant. That is, the list of selected factor characteristics is correct.

### 3. RESULTS

The difficulty of ensuring the engagement of consumers of hotel services is currently connected and explained by a significant amount of factors characteristic of this market. They include the growth of consumer demands, the expansion of supply, the use of various concepts aimed at narrow segments (business, eco, youth, friendly to animals, for specific social community hotels, boutique hotels), the presence of thematic rooms, specific spaces (libraries, cinema halls, workshops, studios), as well as various innovative services (Melián-González & Bulchand-Gidumal, 2016; Nadeem et al., 2021; Fang & Partovi, 2022).

For Ukraine, additional unfavorable factors in ensuring the engagement of hotel services consumers are the complex political and socio-economic situation. This requires both the use of innovations and effective management of engagement processes based on their comprehensive evaluation. Assessing the impact of consumer engagement on hotel performance requires consideration of various components of these processes and their interrelationships. After all, their change

or improvement can increase the effectiveness of activities and generally contribute to business success (Melián-González & Bulchand-Gidumal, 2016; Cheung et al., 2021; Nadeem et al., 2021). Determining the components of consumer engagement processes helps understand their interrelationships, the sequence of actions, and the possibilities of responding to changes and preventing problematic situations.

The use of innovative digital technologies in attracting consumers is an urgent requirement. They contribute to the intensification of online interaction between business entities and consumers (Melián-González & Bulchand-Gidumal, 2016) and take place in the form of viewing, showing, reaching, clicking, commenting, or sharing (Hollebeek et al., 2019). For hotel businesses, the basic tools of interaction with consumers are the Internet, websites, social networks, and mobile applications (Hsu, 2012; Islam et al., 2019; Santini et al., 2020). In general, depending on the purpose of the business process, hotels use different types of digital technologies:

- in communication business processes with consumers, information and promotion resources: websites, social networks, e-mail, chatbots, mobile applications, service reservation platforms, online banking, and content generated by consumers (Hsu, 2012; Islam et al., 2019; Santini et al., 2020; Fang & Partovi, 2022);
- in the business processes of service provision: mobile registration, image recognition systems and technologies, and biometric technologies (Li et al., 2022; Ioannou et al., 2020; Binesh & Baloglu, 2023; Lim et al., 2018; Lee et al., 2021);
- in intra-organizational and production business processes: basic and auxiliary tools in managing business processes (electronic document flow, CRM, data processing, dashboards of critical indicators, analytics, robotization of processes) (Binesh & Baloglu, 2023; Li et al., 2022; Ioannou et al., 2020).

Digitization in the hotel business is relevant in direct interaction with consumers – digital engagement of consumers. In this context, the following areas should be highlighted:

- 1) engaging consumers as a means of influencing the consumption experience (Hanh Le et al., 2021; Touni et al., 2022);
- 2) engaging consumers as a relationship strategy (Nadeem et al., 2021; Islam et al., 2019);
- 3) engaging consumers to identify differences in their behavior (Cheung et al., 2021; Muhammad et al., 2021);
- 4) engaging consumers to manage relationships with loyal consumers (Bowden, 2009; Hollebeek, 2021);
- 5) engaging consumers in social networks, including Facebook, Twitter, Instagram, and Tik Tok (Harrigan et al., 2017; So et al., 2021; Touni et al., 2022).

Identifying the indicated areas makes it possible to note that digital consumer engagement is a process that maximizes the interaction between the object and the subject of influence and encourages existing (potential) consumers to purchase (consume) a hotel product using digital technologies.

Summarizing the experience of hotels in Ukraine makes it possible to determine the mechanism of digital engagement of hotel services' consumers. With digital means, a potential consumer can turn into a real one. It is important to consider the individualization and personalization of services (Pizam, 2015; Tomczyk et al., 2022). Therefore, at the initial stage, the following aspects are essential: 1) persuasiveness and interest in targeted advertising; 2) SEO effectiveness; 3) quality, convenience, comprehensibility, and interest in websites, social network pages, and mobile applications. According to lead generation results, consumers interested in cooperation demonstrate particular behavior (get registered, leave contacts, initiate newsletters, subscribe to social network pages, or directly book services). Next, there is direct communication between the consumer and a hotel, obtaining a consumer experience, and in case of positive impressions, a loyal relationship – further cooperation. Loyalty formation is becoming a hotel's strategic goal (Koo et al., 2020; Belhadi et al., 2023).

In this context, it is necessary to pay attention to the fact that many studies foresee the formation of loyalty as the final stage of attracting consumers. However, it should be noted that loyalty refers to the consumer's attachment to the business entity. It is more important to encourage the consumers to make repeat purchases, i.e., forming repatronage intentions (Atulkar & Kesari, 2017).

Accordingly, the components of the process of digital customer engagement by the subjects of the hotel business are 1) recognition; 2) interest; 3) communications; 4) consumer experience; 5) loyalty; 6) repatronage intentions (Figure 1).

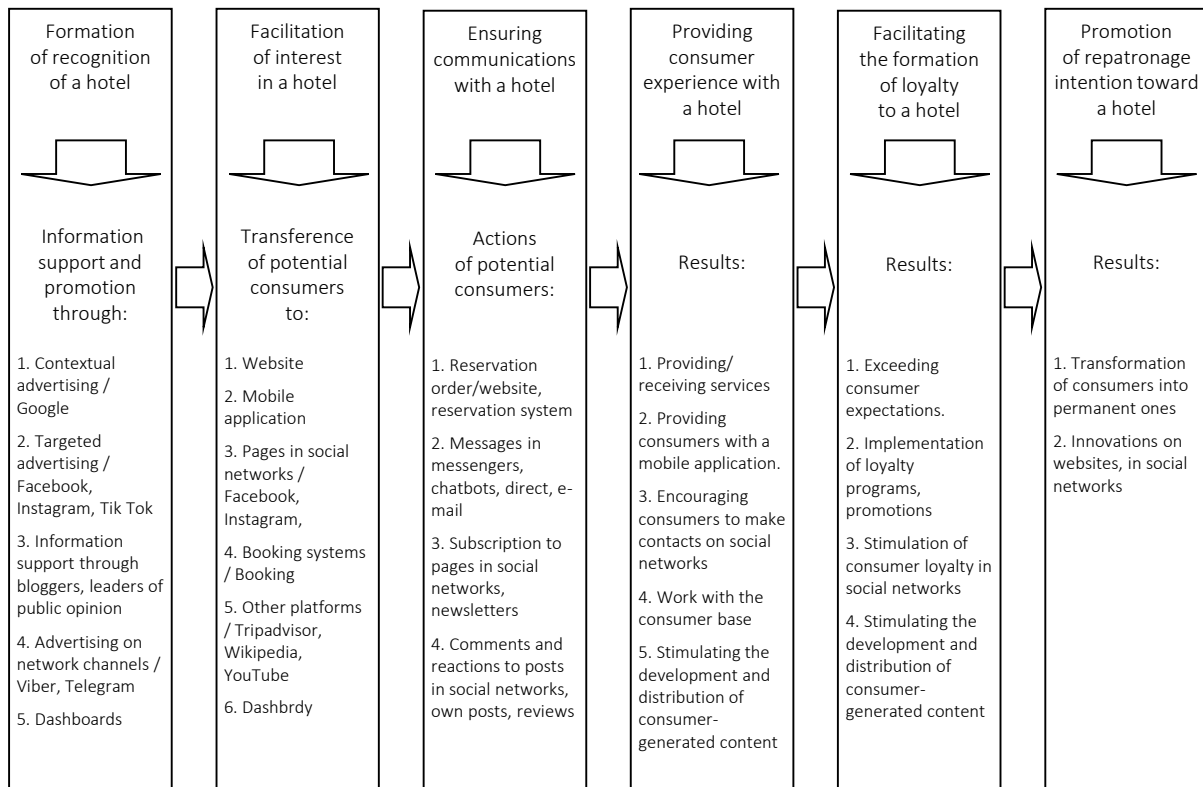
The components of consumers' digital engagement by hotel business entities include marketing measures through digital tools and technologies. Therefore, the main costs of hotels for the digital engagement of consumers relate to sales, wage funds, and digitalization of business processes.

Using the example of 4-star hotels in Kyiv ("Bratislava," "Ukraine," and "Khreshchatyk"), the dependence of net income on the number of expenses for the processes of digital engagement of consumers, in particular for sales, wage funds, and digitalization of business processes, is determined (Table 1).

Based on the analysis of the formed models (Table 2), all selected factors significantly impact hotel income. However, the impact of costs on the digitalization of business processes is especially noteworthy for all hotels considered. Verification of the graph (Table 4) using the dynamics of deviations (Table 3) confirms the adequacy of the specified models.

Verifying the graph (Table 4) using the dynamics of deviations (Table 3) confirms the specified models' adequacy.

In the case of the linear model ("Khreshchatyk" hotel), the parameters show how many units the effective feature will change (decrease or increase) when one factor is changed by one unit (provided that other factors do not change). Thus, with a 1% increase in digitization costs, the company's income will increase by 19,784 thousand UAH; with an increase in labor costs by 1 thousand UAH, the amount of income will decrease by 1,51 thousand UAH; with an increase in sales costs by 1 thousand UAH, in-



**Figure 1.** Digital engagement of hotel customers

come will increase by 1,42 thousand UAH. In the case of power-law models (hotels “Bratislava” and “Ukraine”), the parameters are essentially elasticity coefficients that demonstrate the sensitivity of income changes to changes in factor features.

The highlighted factors significantly impact the income of hotels, especially the effectiveness of

sales and digitalization costs. In each formula, the influence of digitalization of business processes, common to the three selected hotels, is traced. Regarding the calculated econometric models, hotels can receive the planned income volumes by varying the volume of factor components and achieve positive dynamics of operational activity indicators.

**Table 1.** Output data for determining the dependence of net income with possible factors in selected hotels, 2016–2020

Indicators	2016	2017	2018	2019	2020
<b>Bratislava</b>					
Net income, thousand UAH	13000	20000	21000	27379	16900
Sales costs, thousand UAH	65	130	130	280	110
Wage fund, thousand UAH	880	1000	1000	610	860
Costs of business processes digitalization, %	0.01	0.1	0.3	0.4	0.2
<b>Ukraine</b>					
Net income, thousand UAH	26168	25209	27500	29765	23456
Sales costs, thousand UAH	211	264	330	567	123
Wage fund, thousand UAH	5678	5789	5876	6123	5076
Costs of business processes digitalization, %	0.0	0.0	0.1	0.1	0.0
<b>Khreshchatyk</b>					
Net income, thousand UAH	29523	40386	55678	59876	30987
Sales costs, thousand UAH	275	11168	15765	16789	567
Wage fund, thousand UAH	9626	11951	13456	14321	12345
Costs of business processes digitalization, %	0.0	0.2	0.5	0.9	0.4

**Table 2.** Econometric models of the dependence of net income with possible factors in selected hotels, 2016–2020

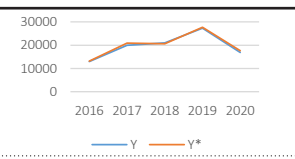
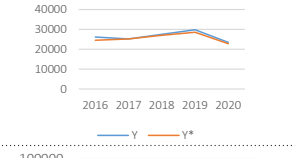
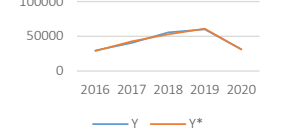
Hotel	Formula of the model	Factor characteristics that have a significant impact
Bratislava	$\hat{Y} = 68.87 X_1^{0.63} X_2^{0.38} X_3^{-0.01}$ Power-law-model	1) costs of business processes digitalization
Ukraine	$\hat{Y} = 133.7 X_1^{0.06} X_2^{0.59} X_3^{0.07}$ Power-law-model	1) sales costs; 2) expenses for business processes digitalization
Khreshchatyk	$\hat{Y} = 41,011 + 1.42X_1 - 1.51X_2 + 19,784.4X_3$ Linear model	1) sales costs; 2) expenses for business processes digitalization

Note:  $Y$  – net income of the hotel,  $X_1$  – sales costs,  $X_2$  – volume of the wage fund,  $X_3$  – costs for digitalization of business processes, %.

**Table 3.** Calculation of deviations of the effective feature of selected hotels

Years	$Y$ – real indicators	$Y^*$ – predicted indicators	$u=Y-Y^*$
<b>Bratislava</b>			
2016	13000	13154.34	-154.335
2017	20000	20884.03	-884.034
2018	21000	20655.86	344.1447
2019	27379	27678.62	-299.617
2020	16900	17628.14	-728.144
<b>Ukraine</b>			
2016	26168	24520.75056	1647.249
2017	25209	25138.18181	70.81819
2018	27500	26980.04835	519.9517
2019	29765	28556.01026	1208.99
2020	23456	22750.06041	705.9396
<b>Khreshchatyk</b>			
2016	29523	28841.89	681.11
2017	40386	42668.67	-2282.67
2018	55678	52813.09	2864.91
2019	59876	60864.38	-988.38
2020	30987	31083.12	-96.12

**Table 4.** Graphs of real and forecast models for the dependence of the effective feature on factorial features for the selected hotels

Name of the hotel	Dependency visualization	Formula and type of econometric model
Bratislava		$\hat{Y} = 68.87 X_1^{0.63} X_2^{0.38} X_3^{-0.01}$ Power-law-model
Ukraine		$\hat{Y} = 133.7 X_1^{0.06} X_2^{0.59} X_3^{0.07}$ Power-law-model
Khreshchatyk		$\hat{Y} = 41,011 + 1.42X_1 - 1.51X_2 + 19,784.4X_3$ Linear model



## 4. DISCUSSION

This study aimed to determine the components of the digital engagement of hotel services' consumers and to generalize its impact on the performance of several hotels in Kyiv (Ukraine). Within the framework of the selected components of digital engagement of hotel services' consumers, it is determined that they ensure the formation of information and communication space regarding 1) the effectiveness of communications with consumers, 2) acceleration of data processing, management decision-making regarding service improvement, and 3) formation of consumer loyalty and repatronage intention.

The dependence of hotel income on the main influencing factors (the volume of sales costs, wage funds, and digitalization expenses) is determined. In order to obtain more in-depth conclusions about the impact of digital consumer engagement on the performance of hotels, it is necessary to expand the research parameters in the future, in particular, to increase the list of factor indicators. This can be, for example, determining the costs of digital customer engagement for each of the selected components of this process. These results

will enable hotels to activate or, on the contrary, slow down certain aspects of activities aimed at attracting consumers.

In general, the need for further research into the processes of digital engagement of hotel service consumers in Ukraine is explained by the following aspects. According to specialists, experts and scientists in the field of hospitality of Ukraine, for subjects of the hotel business of Ukraine in the conditions of a full-scale war<sup>1</sup>, the implementation of digitalization is a dynamic and prevailing trend, which is manifested in the use of integrated technologies in such areas as distribution systems (which ensure global digital transformation) and intra-organizational business – processes, communications with consumers and stakeholders (Lviv University of Trade and Economics, 2023). On the other hand, taking into account the fact that the tourism and hotel business in the pre-war period<sup>2</sup> influenced the economic growth of Ukraine (Mazaraki et al., 2019), it can be assumed that innovativeness, in particular digitalization, will contribute to the attraction of consumers and, therefore, to the active recovery of Ukraine's economy in the post-war period.

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## CONCLUSION

The study aimed to determine the components of the process of engaging hotel services' consumers in the context of digitalization (digital consumer engagement) and its impact on hotel performance. This helped identify the components that proactively provide potential consumers with primary and reliable information about the characteristics of services and the functional characteristics of the hotel, contributing to the formation, stabilization, and strengthening of relations with consumers. For the development of the hotel services market, the main specific feature of which is a high degree of differentiation of the offer, which is expressed in the need to match the offered hotel services to the needs of each specific consumer, it is digital engagement that will ensure a high level of loyalty of consumers who form the client base.

The presence of such an intangible asset as the hotel's client base leads to an increase in revenues from the provision of services and an increase in the hotel's market share, which allows hotels to resist stagnation and have specific prospects for financial stability in today's challenging economic conditions. Using the example of the selected hotels in Kyiv, it has been proven that customer engagement through digitalization processes positively affects the growth of hotel revenues. By modeling the expenses for these processes, it is possible to achieve the planned income. Therefore, in Ukraine, in conditions of restricted consumer demand, the digitization of relations with consumers will contribute to the increase in the efficiency of business processes and the formation of foundations for the post-war revival of this sphere.

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1 The full-scale military invasion of the Russian Federation against Ukraine started on February 24, 2022.

2 Until February 24, 2022, i.e., until the period of the Russian Federation's full-scale military invasion of Ukraine.

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