Abstract. The paper assessed the issue of gender differences in the perception of individual types of COBRAs (Consumers’ Online Brand Related Activities) and the associated motivations (information, entertainment, social interaction, and remuneration) for these activities on the social network Instagram. The paper analyzed data gathered from questionnaires (a sample of 401 respondents) that had been spread online via computer-assisted web interviewing. Gender differences were analyzed using the Mann-Whitney U test. Seven research hypotheses were formulated concerning the literature review and the current state of research in this area. Based on the results, it could be stated that four of them are statistically significant. Specifically, the study observed gender differences in the perception of three of the four analyzed motivations as latent variables. The study verified gender differences in the perception of the issue in the case of information motives, motives of entertainment, and motives of social interaction. Still, the motive of remuneration did not show sufficient statistical significance. In the case of the three analyzed consumers’ online brand-related activities as latent variables, the authors observed only one case of statistical significance of the gender difference in the case of consumption activity, while neither contributing nor creating as activities showed statistical significance. At the level of manifest variables, the paper observed two cases of statistical significance of the factors related to the contributing activity. However, that was insufficient to confirm this activity’s significance as a latent variable. A significance level of 0.05 was proposed. The findings were presented in the context of existing research with a pointed future direction of the research in this area, which lies mainly in extending the analysis to other social networking platforms, other markets, and a narrower demographic perspective in the sample for a deeper understanding of the phenomena studied.

Keywords: Instagram, consumer, brand-related activities, gender differences, analysis.

Introduction. From a marketing point of view, the social network Instagram is a channel on which open mutual connections are created between the business sector and customers (Instagram users). Many companies use this platform in their marketing mix to expand their customer base and improve their brand experience. This platform is a tool for increasing the number of business transactions or other relevant business KPIs. However, this is possible only if the management of this platform is done right. (Nica et al. 2019).

A properly managed Instagram account could help a brand be more up-to-date and accessible to its customers. The better the brand manages its Instagram account, the higher the level of engagement in the form of the selected type of COBRAs it could expect. These activities are of great importance for the brand operating in the online space. If the brand wants to take full advantage of this, it needs to understand the motives for these activities and how to engage men and women.

Given Instagram's marketing potential and the need to know gender differences to understand motives and COBRAs properly, these requirements were analyzed to identify statistically significant gender differences in the perception of COBRAs and differing motives regarding Instagram.

**Literature Review.** Technology and innovation are needed in every field today. They lead the global society toward its goals (Hudakova et al., 2019; Urbancova et al., 2020; Turisova et al., 2021; Straka et al., 2017; Rajbhandari et al., 2022; Petruf et al., 2015; Ivankova et al., 2021). Instagram is one of the world’s largest and most popular social networks. Thanks to its focus on visual content, it represents an excellent opportunity for the world of marketing. Many enterprises also use such social media platforms for marketing purposes (Civelek et al., 2020; Vasanicova et al., 2021). Therefore, they could be recognized in international markets. This fact also makes them competitive against their rivals and achieve higher export volumes (Civelek and Krajciík, 2022; Ključnikov et al., 2022). These innovative channels do not only develop financial conditions of businesses but also improve local economic conditions (Civelek et al., 2021; Ključnikov, 2020a; Ključnikov, 2020b; Kolová and Ključnikov, 2021; Ključnikov et al., 2021).

At the end of 2020, Instagram had 1.16 billion active users per month and 500 million active users per day (Kemp 2020; Kalinova and Neubergova 2021). It is estimated that 51% of users are women and 49% are men (Kemp, 2020), and up to 70% of users are under 35 (Kemp, 2020). 39% of brands spend more than 20% of their marketing budget on influencer marketing (Geyser, 2020). Instagram is estimated to have generated $20 billion in advertising revenue in 2019, while Facebook brought $70 billion in total advertising revenue (Bloomberg, 2020). The average time users spend on the platform is 8.48 minutes, and the number of pages visited on the platform is 9.71 (Alexa, 2021b). Approximately 100 million posts are added to the platform every 24 hours (71.9% are photos, 14.2% are videos, and 13.9% are carousels) (SMPerth, 2020). The «like» button is used 4.2 times daily (SMPerth, 2020). For a social network user to interact with the brand, certain activities are needed, which require different levels of user involvement (Gavurova et al., 2020a; Gavurova and Kubak, 2021). In terms of online social media, these are classified under the COBRA concept (Consumers’ Online Brand Related Activities), which has three levels. The first and easiest to achieve is the content consumption activity, followed by the content contributing activity, and, finally, the most valuable content creation activity (Schivinski, 2021). Research on this issue is based on marketing engagement theory and has both an emotional and cognitive dimension (Hollebeek, 2014; Olah et al., 2021). This model combines brand-related customer behavior (Muntinga et al., 2011). It covers both external and internal stakeholders' perceptions of the brand (Grebocz-Krawczyk, 2019; Samoliuk et al., 2022; Shava, 2021), enhancing entrepreneurs to develop their value propositions and find new channels of communication.

Bartos et al. (2021) provided an interesting study. Content consumption is the most passive of all three, and the brand engagement rate is low. The same information was presented by Dias et al. (2020). Content contribution requires a certain degree of user interaction with the brand’s content or other users. Content creation is the most engaging activity which may be further developed into other forms of interaction (Hauz et al., 2014; Schivinski and Dabrowski, 2016; Bruhn et al., 2012; Birknerova et al., 2016).

The motivations encouraging content engagement on social media platforms have been studied under the UGT-based constructs (Uses and Gratification Theory). There are currently four main motivations for working in social media: entertainment (de Vries et al., 2014; Taylor et al., 2011), social interaction (Muntinga et al., 2011; Kucerova and Smolkova, 2022), information (Pletikosa et al., 2013; de Vries et al., 2014) and the desire for remuneration (Lee et al., 2013).
Methodology and research methods. The study examines gender differences in attitudes towards perceptions of motivations (information, entertainment, social interaction, and remuneration) and consumers’ online brand-related activities (COBRAs). Their classification is based on that by Piehler et al. (2019). The research goals are as follows: to identify statistically significant gender differences in the perception of COBRAs and their motivations on the social network Instagram. Given the research goal, the following hypotheses were proposed:

H1: There is a statistically significant difference in genders given their perception of selected factors of the information motive in terms of COBRAs on Instagram.

H2: There is a statistically significant difference in genders given the perception of selected factors of the entertainment motive in terms of COBRAs on Instagram.

H3: There is a statistically significant difference in genders given the perception of selected factors of the social interaction motive in terms of COBRAs on Instagram.

H4: There is a statistically significant difference in genders given the perception of selected factors of the remuneration motive in terms of COBRAs on Instagram.

H5: There is a statistically significant difference in genders given the perception of selected factors of the content consumption in terms of COBRAs on Instagram.

H6: There is a statistically significant difference in genders given the perception of selected factors of the content contribution in terms of COBRAs on Instagram.

H7: There is a statistically significant gender difference in the perception of selected COBRAs factors at the level of content creation in terms of COBRAs on Instagram.

The analysis worked with a sample of 401 respondents, who were asked to fill out a standardized questionnaire (Piehler et al., 2019) addressing their attitudes to the issue. Data were collected during the first six months of 2021 using the CAWI method. The questionnaire was based on a 5-point Likert scale. Factors defining COBRAs were originally formulated in several studies (Muntinga et al., 2011; Men and Tsai, 2013; Azar et al., 2016), much like the factors defining the motives studied (Hennig-Thurau et al., 2004; Taylor et al., 2011; Ko et al., 2005).

To meet the set goal, the gender differences in the perception of the issue were identified based on the analytical data processing using the Mann-Whitney U test. The underlying idea was that the individual variables do not have to correspond to the Gaussian normal distribution at all times and that it is assumed that they are continuous. The significance level was set at 0.05.

**Figure 1. Research construct**

Sources: developed by the authors.
Results. Following the analysis of Instagram, several statistically significant differences in the perception of the issue between men and women were observed. In total, there were 25 variables analysed, for which differences were assessed. Table 1 shows the results.

Table 1. Gender differences in the perception of manifest variables

<table>
<thead>
<tr>
<th>Manifest Variables</th>
<th>Mann-Whitney U</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IG_information_1</td>
<td>13048.000</td>
<td>-3.503</td>
<td>0.000</td>
</tr>
<tr>
<td>IG_information_2</td>
<td>13903.000</td>
<td>-2.650</td>
<td>0.008</td>
</tr>
<tr>
<td>IG_information_3</td>
<td>12997.500</td>
<td>-3.570</td>
<td>0.000</td>
</tr>
<tr>
<td>IG_entertainment_1</td>
<td>13702.500</td>
<td>-2.901</td>
<td>0.004</td>
</tr>
<tr>
<td>IG_entertainment_2</td>
<td>13772.500</td>
<td>-2.365</td>
<td>0.018</td>
</tr>
<tr>
<td>IG_entertainment_3</td>
<td>14405.500</td>
<td>-2.278</td>
<td>0.023</td>
</tr>
<tr>
<td>IG_entertainment_4</td>
<td>13453.500</td>
<td>-2.941</td>
<td>0.003</td>
</tr>
<tr>
<td>IG_social_interaction_1</td>
<td>13950.500</td>
<td>-2.305</td>
<td>0.021</td>
</tr>
<tr>
<td>IG_social_interaction_2</td>
<td>14692.000</td>
<td>-1.731</td>
<td>0.083</td>
</tr>
<tr>
<td>IG_social_interaction_3</td>
<td>13477.500</td>
<td>-3.091</td>
<td>0.002</td>
</tr>
<tr>
<td>IG_remuneration_1</td>
<td>14511.500</td>
<td>-1.777</td>
<td>0.075</td>
</tr>
<tr>
<td>IG_remuneration_2</td>
<td>16096.500</td>
<td>-0.141</td>
<td>0.888</td>
</tr>
<tr>
<td>IG_remuneration_3</td>
<td>15959.000</td>
<td>-0.416</td>
<td>0.677</td>
</tr>
<tr>
<td>IG_consuming_1</td>
<td>12963.000</td>
<td>-3.331</td>
<td>0.000</td>
</tr>
<tr>
<td>IG_consuming_2</td>
<td>11842.000</td>
<td>-4.685</td>
<td>0.000</td>
</tr>
<tr>
<td>IG_consuming_3</td>
<td>12697.000</td>
<td>-3.839</td>
<td>0.000</td>
</tr>
<tr>
<td>IG_contributing_1</td>
<td>13075.500</td>
<td>-3.116</td>
<td>0.002</td>
</tr>
<tr>
<td>IG_contributing_2</td>
<td>13543.000</td>
<td>-2.859</td>
<td>0.004</td>
</tr>
<tr>
<td>IG_contributing_3</td>
<td>16544.000</td>
<td>-0.025</td>
<td>0.980</td>
</tr>
<tr>
<td>IG_contributing_4</td>
<td>16495.500</td>
<td>-0.138</td>
<td>0.890</td>
</tr>
<tr>
<td>IG_contributing_5</td>
<td>16152.000</td>
<td>-0.298</td>
<td>0.765</td>
</tr>
<tr>
<td>IG_contributing_6</td>
<td>15702.000</td>
<td>-0.492</td>
<td>0.623</td>
</tr>
<tr>
<td>IG_CREATING_1</td>
<td>16343.000</td>
<td>-0.161</td>
<td>0.872</td>
</tr>
<tr>
<td>IG_CREATING_2</td>
<td>14764.500</td>
<td>-1.558</td>
<td>0.119</td>
</tr>
<tr>
<td>IG_CREATING_3</td>
<td>15409.500</td>
<td>-1.253</td>
<td>0.210</td>
</tr>
</tbody>
</table>

Sources: developed by the authors.

Up to 14 significant gender differences were observed. These are all cases of information motivation, namely IG_information_1 the value $x = 3.49$ ($x = 4.00$) was observed in men and $x = 3.93$ ($x = 4.00$) in women, subsequently IG_information_2 reached $x = 3$ in men, 27 ($x = 3.00$) and in women $x = 3.60$ ($x = 4.00$) and the last information variable IG_information_3 reached $x = 3.30$ ($x = 3.00$) in men and $x = 3.70$ in women ($x = 4.00$). The motivation of entertainment reached different significance in all variables. In IG_entertainment_1 the value $x = 3.62$ ($x = 4.00$) was observed in men and $x = 3.98$ ($x = 4.00$) in women, followed by IG_entertainment_2 which reached the value $x = 3.53$ ($x = 4.00$) in men and for women $x = 3.83$ ($x = 4.00$), then IG_entertainment_3 showed the value $x = 3.51$ ($x = 4.00$) in men and $x = 3.79$ ($x = 4.00$) in women and IG_entertainment_4 $x = 3.36$ ($x = 3.00$) in men and $x = 3.72$ ($x = 4.00$) in women. Two significant differences were observed in social interaction, namely in IG_social_interaction_1 with values of $x = 3.25$ ($x = 3.00$) in men and $x = 3.53$ ($x = 4.00$) in women. The second was IG_social_interaction_3 with values $x = 2.94$ ($x = 3.00$) in men and $x = 3.33$ ($x = 3.00$) in women.

With regard to content consumption activity, all variables were significant. In IG_consuming_1, values of $x = 3.16$ ($x = 3.00$) were observed in men and $x = 3.61$ ($x = 4.00$) in women, followed by IG_consuming_2 with values of $x = 3.33$ ($x = 3.00$) in men and $x = 3.93$ ($x = 4.00$) in women and in IG_consuming_3 values $x = 3.22$ ($x = 3.00$) in men and $x = 3.70$ ($x = 4.00$) in women were observed. The last area where significant differences detected were the activities contributing to the brand content. These were IG_contributing_1
with values $\bar{x} = 3.22$ ($\bar{x} = 3.00$) in men and $\bar{x} = 3.67$ ($\bar{x} = 4.00$) in women and IG_contributing_2 with values $\bar{x} = 2.65$ ($\bar{x} = 3.00$) in men and $\bar{x} = 3.11$ ($\bar{x} = 3.00$) in women. In all the observed significant gender differences, the women rated the variables examined with a greater degree of agreement than men. No variable was rated with greater degree of agreement by men. Other differences did not show statistical significance.

Table 2. Gender differences in the perception of latent variables

<table>
<thead>
<tr>
<th>Manifest Variables</th>
<th>Mann-Whitney U</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information motivation</td>
<td>12938.500</td>
<td>-3.631</td>
<td>0.000</td>
</tr>
<tr>
<td>Entertainment motivation</td>
<td>20939.500</td>
<td>-2.997</td>
<td>0.003</td>
</tr>
<tr>
<td>Social interaction motivation</td>
<td>13969.500</td>
<td>-2.627</td>
<td>0.009</td>
</tr>
<tr>
<td>Remuneration motivation</td>
<td>15703.000</td>
<td>-0.956</td>
<td>0.339</td>
</tr>
<tr>
<td>Consuming activity</td>
<td>11662.000</td>
<td>-4.664</td>
<td>0.000</td>
</tr>
<tr>
<td>Contributing activity</td>
<td>15448.000</td>
<td>-1.317</td>
<td>0.188</td>
</tr>
<tr>
<td>Creating activity</td>
<td>16518.500</td>
<td>-0.173</td>
<td>0.863</td>
</tr>
</tbody>
</table>

Sources: developed by the authors.

The analysis also focused on motivations and activities at the level of seven latent variables. These are presented in the table above. The research identified four statistically significant variables. These were, however, perceived differently by men and women. Their attitudes were partially presented in the previous section, and on their basis, the study adopted four research hypotheses presented in the previous section.

Thus, there is a considerable degree of difference in attitudes on Instagram. In all cases, without exception, the women were in agreement with the arguments examined much more. The results could be supported by the demographic composition of Instagram users, where women dominate (57%) (Statista, 2021). Karatsoli and Nathanail (2020) also reported the observed differences. They pointed out that visually dominant content (photos and images), the essence of the social network Instagram, is preferred more by women than men. Even in the case of the motivation for carrying out brand-related activities, women gave more positive evaluation. The success of Instagram is largely dependent on the aesthetics and visual appeal of the published content, and this is what attracts women to this network in larger numbers (Brahmadas, 2019). Another parallel could be seen in the fact that women use social networks on a daily basis more frequently than men – Instagram is well-known for its chronological representation of content. Men agreed with the proposed questionnaire item less because they prefer to use desktop devices and laptops to visit social networks (Lounge, 2015). It should be noted, however, that Instagram's graphical interface is primarily optimized for mobile devices and the user experience via other devices is less attractive. The presented results could be applied at the business level to improve the market position of enterprises through the use of modern technologies (Chebli et al., 2021; Hassan and Lee, 2021; Kolvekova et al., 2019; Kullu and Ayyildiz, 2021; Mwatsika, 2021; Pereira-Moliner et al., 2021; Petrakova et al., 2021). Besides, the research framework could be applied in other areas (Gavurova et al., 2020a; Gavurova et al., 2020b; Gavurova et al., 2021).

Conclusions. This paper analysed gender differences in attitudes to selected areas related to the social network Instagram. Seven research hypotheses were established. The hypotheses aimed to identify statistically significant gender differences in the perception of COBRAs and motives on the social network Instagram. These were confirmed in the three cases of motives and one case of COBRA activity. The results were discussed in the context of existing research. Based on this, the set goal is considered achieved. Therefore, it could be stated that marketing strategies (also those carried out on Instagram) should not be neglected. The research could be expanded to include other social networks, where differences in the context of other demographic segmentation could be assessed. The need for such
research is and will be relevant, as Instagram is still one of the largest social networks in the world and is very fast in attracting new users.

**Author Contributions:** conceptualization, L. N. and A. J.; methodology, L. N.; software, R. F.; validation, L. N. and R. F.; formal analysis, A. J.; investigation, L. N.; resources, R. F. and A. J.; data curation, L. N. and R. F.; writing-original draft preparation, L. N. and I. K.; writing-review and editing, R. F.; visualization, L. N.; supervision, A. J.; project administration, L. N.; funding acquisition, R. F.

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Л. Настисин, А. Жура, Р. Федорко, І. Копер. Гендерні відмінності в зрозумілості потреб у споживачах онлайн-інтенсивних діяльностей і їх вплив на лояльність споживачів онлайн-брендів у соціальних мережах Instagram.


Урбанцова, Х., Худакова, М., та Фажікова, А. (2020). Диверсійність визначається як альтернативна стратегія велікого значення. Світ екології, 12(12), 1020. [Google Scholar] [CrossRef]


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Формування лояльності споживачів до онлайн-брендів експериментальним методом в Instagram та вплив гендерних відмінностей на формування лояльності споживачів до онлайн-брендів в Instagram. Основою для подальшого дослідження є аналіз факторів, що впливають на формування лояльності споживачів до онлайн-брендів в Instagram. Використання статистичних методів дозволить отримати цілий ряд висновків, що допоможуть виявити вплив гендерних відмінностей на формування лояльності споживачів до онлайн-брендів в Instagram.