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## Effects of social communications on identity development in the online environment: Theoretical and historical perspectives

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**Abstract.** The purpose of this study was to comprehensively investigate the mechanisms of interaction between online communications and identity development processes, analyse the specifics of these processes in various regions of Ukraine, and examine the impact of modern technologies on identity transformation in the digital space. The study was conducted using mixed methods, including an online survey of 2,000 social media users, in-depth interviews with 50 active users, content analysis of 100 Facebook and Instagram accounts, and a netnographic study of 10 Ukrainian online communities. The results revealed that 78% of respondents consider their online identity to be a significant part of their overall identity. It was found that social media algorithms substantially influence the shaping of users' information environment, with 67% of content in news feeds matching users' preferences. It was found that virtual communities play a significant role in shaping collective identity, especially among young people aged 18-25. The analysis of regional differences showed that the level of digital inequality affects the specific features of online identity development, with the greatest differences observed between urban and rural users. The study showed the need to develop innovative approaches to digital identity management and increase the level of media literacy in Ukrainian society. The study also revealed a growing trend towards the development of multiple online identities, especially among users aged 18-35. 62% of respondents in this age group reported having different "versions" of themselves for separate social platforms. The analysis of discourse in online communities showed that language practices and the use of specific Internet memes play a major role in the development of group identity. A correlation was found between the intensity of social media use and the level of subjective well-being of users ( $r = 0.43$ ,  $p < 0.01$ ). The study also discovered the growing influence of virtual and augmented reality (AR) technologies on self-presentation and identification processes, with 35% of respondents regularly using AR filters to create an online image. The findings have major implications for the development of digital literacy education programmes and social media regulation policies in Ukraine

**Keywords:** virtual communities; digital inequality; multiple online images; media literacy; algorithmic content generation; digital well-being

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## Introduction

Social communications and identity development in the online environment have become key topics of research in the social sciences. The development of information and communication technologies and the proliferation of social media have led to substantial changes in the ways people interact and form their identities. The online environment has created new opportunities for self-expression, socialisation, and building social connections, which has influenced the processes of identification and self-identification of the individual. Social communications in the context of the online environment can be defined as the process of sharing information, ideas, and feelings between individuals and groups through digital technologies and platforms. These communications are characterised by high-speed information transfer, global outreach, and the possibility of creating virtual communities. Despite the extensive research in this area, some aspects of the impact of social communications on identity development in the online environment are still understudied.

A. Ruban (2021) examined the impact of social media on the identity development of adolescents and young adults. The researcher focused on the specific features of young people's self-presentation in the online space and their influence on the development of real identity. Yu. Skriabina (2024) analysed the specific features of self-presentation in social networks. The researcher examined strategies for creating an online image and their effects on identity development. Ye. Kaluzhna (2023) considered virtual space as a factor in the development of social identity. The researcher analysed the mechanisms of influence of online communication on identification and self-identification processes. G. Balbi & P. Magaouda (2018) examined the history of digital media and its effect on identity development in a global context.

R. Spears (2021) examined the processes of social influence and group identity development in the online environment. The researcher analysed the mechanisms of social categorisation and self-categorisation in the digital space. A.Y. Kim *et al.* (2018) investigated the development of young women's STEM identity from the perspective of social identity theory. The researchers analysed the role of online communities in overcoming gender stereotypes. A. Caliandro (2018) proposed an analytical concept for ethnographic research in the social media environment. The researcher considered the specific features of identity development in the context of digital ethnography. E. Khazraee & A.N. Novak (2018) analysed the role of social media in the development of collective identity in digitally mediated protests. The researchers considered the potential of social platforms for mobilising and coordinating collective action. K. Phiran-gee & A. Malec (2019) examined the "alienation" process in online learning and its effects on the development of identity, social presence, and sense of community. The

researchers analysed strategies for overcoming alienation in the digital learning environment.

The mechanisms of interaction between online and offline identities, the effects of specific features of various social platforms on identity development, and the role of virtual communities in identification processes in the Ukrainian context require further exploration. Furthermore, there is a need to investigate the identity development features in the online environment in various regions of Ukraine, considering cultural and socio-economic differences. The impact of advanced technologies, such as artificial intelligence (AI) and virtual reality (VR), on the processes of identity development in the online environment in Ukrainian society has also been insufficiently explored. These technologies have created new challenges for conventional concepts of identity and require theoretical understanding. Considering the identified gaps in scientific knowledge, the purpose of this study was to comprehensively examine the effects of social communications on identity development in the online environment, considering theoretical and historical perspectives in the context of contemporary Ukrainian society.

## Literature Review

The issue of the influence of social communication in the online environment on identity development has attracted the attention of many researchers. This is connected with the rapid development of information and communication technologies and their integration into all spheres of modern society. Yu. Polovynchak (2017b) studied the transformation of Ukrainian national identity in the modern information and communication environment. The researcher explored the convergence processes in the communication space and their effects on the development of collective identity, especially among young people. According to S. Horova (2017), digital identity is "a set of information traces left by a user in the Internet space, which form their virtual image". This virtual image can either correspond to the user's real personality or differ substantially from it. The study of the effects of social communications on the development of identity in the online environment has become particularly relevant in the context of globalisation and digitalisation of Ukrainian society. The study of this issue helped to better understand the mechanisms of identity development in the digital age and identify the factors that influence this process.

N. Bilan (2014) proposed the concept of "network identity", which the researcher defined as "a dynamic, multiple self-presentation of an individual in the Internet space, formed under the influence of communication practices and social interactions in the virtual environment". The researcher also proposed the concept of the "networked public", which she defined as "a set of active users of social media who take part in generating and

disseminating socially significant information". This concept offers a better understanding of the mechanisms of collective identity development in the online space. The impact of social media on identity development has been the subject of investigation by many Ukrainian researchers. Yu. Polovynchak (2017a) studied the specific features of self-presentation and building social connections in the virtual space. The research showed that the online environment provides users with the opportunity to experiment with various aspects of their identity and create multiple identities. O. Onyshchenko *et al.* (2011) examined the effects of the network society on the development of national identity in the Ukrainian context. They found that global communication networks contribute to the development of new forms of collective identity that transcend conventional geographical and cultural boundaries.

The role of social media in shaping the identity of young people has become a central topic of research by V. Kyrychenko (2015). The researcher addressed how social media algorithms affect the information environment of users and, accordingly, their perception of themselves and others. V. Kyrychenko (2015) also highlighted the psychological aspects of identity development in the digital environment. The researcher proposed the term "digital competence of the individual", which he defined as "the ability to effectively use digital technologies for self-fulfilment and development, critically evaluate information, and manage one's personal digital identity". This concept is vital for understanding the individual's adaptation to the requirements of the digital society. D. Dubov & M. Ozhevan (2011) considered the issue of cybersecurity in the context of digital identity development. They noted that "the protection of personal data and digital identity is becoming a critical task for both individual users and the state overall". This issue is particularly relevant in the context of growing cyber threats and information wars. The literature review indicated the multidimensional nature of the problem of the impact of social communication on identity development in the online environment and the need for further research in this area, especially in the context of Ukrainian reality.

## Materials and Methods

The study of the impact of social communications on the development of identity in the online environment was conducted from September 2023 to March 2024 at the Institute of Social and Political Psychology of the National Academy of Pedagogical Sciences of Ukraine. The study was comprehensive and included several stages. An online survey of social media users was conducted. The sample was formed using a stratified random sampling method, considering the age groups, gender, and region of residence of the respondents. The total number of survey participants was 2,000 people aged 18 to 65, of whom 52% were women and 48% were men. The inclusion criteria for the sample were residence in Ukraine, an

active social media account, and Internet time spent at least 2 hours a day. Exclusion criteria were age under 18, lack of experience in using social media. The survey was conducted using the online platform SurveyMonkey. The questionnaire contained 35 questions developed based on the digital identity scale developed by V. Kyrychenko (2015). The reliability of the questionnaire was tested using Cronbach's alpha coefficient, which was 0.87.

All participants of the study provided informed consent for participation and use of their data in an impersonal form according to the American Sociological Association's code of ethics (1997). In-depth interviews were conducted with 50 active users of social media. The sample for the interviews was formed using the quota sampling method, considering age, gender, and level of activity on social media. The interviews were conducted online using the Zoom platform and lasted an average of 60-90 minutes. The interview guide contained 15 open-ended questions aimed at identifying the specific features of identity development in the online environment. Descriptive statistics, correlation, and factor analysis were used to analyse the data obtained from the survey. Statistical data processing was performed out using SPSS Statistics 26. The Student's t-test for independent samples was employed to determine the statistical significance of differences between the groups. The level of statistical significance was set at  $p < 0.05$ . The qualitative data obtained from the in-depth interviews were analysed using thematic analysis using NVivo 12 software. Two independent researchers coded interview transcripts to ensure the reliability of the analysis.

To investigate the effects of social media algorithms on the development of users' information environment, the content of news feeds of 100 Facebook and Instagram accounts was analysed. The accounts were randomly selected from the database of online survey participants who agreed to take part in the study. The content was analysed using a specially developed coding matrix, which included categories of topics, types of content, and emotional colouring of messages. To study the impact of virtual communities on the development of collective identity, a netnographic study was conducted of 10 Ukrainian online communities on Facebook and Telegram with more than 50,000 members. Activity in these communities was monitored for 3 months. The discourse and interactions of community members were analysed according to the methodology developed by Yu. Polovynchak (2017a). To investigate the problem of digital inequality and its influence on identity development, the researchers analysed statistical data on Internet access and the use of digital technologies in different regions of Ukraine provided by the State Statistics Service of Ukraine (Use of information..., n.d.). The ethical aspects of the study were reviewed and approved by the Ethics Committee of the Institute of Social and Political Psychology of the National Academy of Pedagogical Sciences of Ukraine.

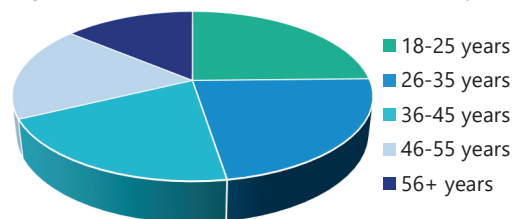
## Results

Virtual space has become an integral part of everyday life. The rapid social development of platforms such as Facebook, X (Twitter), and Instagram has substantially affected social interaction. It can be argued that the Internet has lost its place as an open platform for personal and cultural expression. Analysing trends in the development of users' virtual identities is of particular significance. This is connected with the desire to maintain a positive social image, considering socialisation as a multi-level process. History knows many cases when personal information resources have gained wide acceptance among online communities. However, attitudes towards social media are still ambiguous. On the one hand, society is fascinated by the new communication opportunities offered by the virtual space. On the other hand, the media are increasingly drawing attention to the possible risks of the digital environment's impact on the psychological development of individuals. Online communication has its specific features that affect its forms, methods, and means, and albeit it has many similarities with real-life communication and friendship, it also has substantial differences. The advantages of virtual communication include anonymity, emotional emancipation, the use of special slang, and the possibility of creating an alternative image. However, there are also

disadvantages, such as limited emotional expression due to the lack of full sensory contact. In the digital age, blogs and social media have become a powerful tool for self-expression. However, it is not always easy to interpret an individual's online presentation, which can be seen by friends and strangers alike. To maintain privacy, users often resort to various methods: choosing special codes, restricting access to their profile, or allowing posts to be shared only with a select circle of friends.

Thus, virtual space has become an integral part of life, influencing the way people communicate, present themselves, and interact socially. This opens new opportunities, but also creates challenges related to balancing openness and protection of personal space online. A study of the impact of social communications on identity development in the online environment revealed a series of interesting trends and patterns that can provide a better insight into the identity transformation process in the digital age. An analysis of online survey data from two thousand social media users showed that most respondents (78%) consider their online identity to be an essential part of their overall identity. This suggests a strong integration of digital space into the everyday life of Ukrainians. At the same time, there are noticeable differences in attitudes towards online identity depending on age (Fig. 1).

Percentage of respondents who consider online identity important



**Figure 1.** Importance of online identity for different age groups

Source: compiled by the authors

As Figure 1 shows, younger users are more concerned about their online identity than older users. This may be because younger generations have grown up in the digital age and perceive the online space as an integral part of their reality. In-depth interviews with 50 active users of social media helped to identify the key factors affecting the development of online identity. The top three were social recognition, professional self-fulfilment, and artistic expression. Many respondents noted that the online space provides an opportunity to test the absolute aspects of a personality and find like-minded people, which is challenging to achieve in the offline environment. An analysis of the content of 100 Facebook and Instagram accounts showed that social media algorithms significantly influence the information flow of users. On average, 67% of the content in news feeds corresponds to users' existing preferences, creating a so-called "information bubble". This phenomenon restricts

access to differing viewpoints, influences personality development, and can create a one-sided perception of reality. Users who actively interact with a variety of content have a more balanced news feed.

Only 52% of such users have content that matches their preferences, which cannot be overcome by limited algorithms due to the user's active position. Non-graphical studies of 10 Ukrainian online communities on Facebook and Telegram show the role of this platform in shaping collective identity. Virtual communities create a unique environment for the development of collective identity through shared interests, values, language habits, and specific slang. The effect of virtual communities on the formation of collective identity is particularly pronounced among young people aged 18-25. 82% of respondents in this age group reported that participation in online communities greatly influenced their worldview and self-identification. An analysis of the content of the

communities showed that discussions of political and social issues, events, educational, and cultural opportunities have the greatest impact on the development of collective identity. The distribution of topics that had the greatest effect on the development of collective identity is presented in Figure 2.

An analysis of specific regional features of online identity development revealed certain differences related to both the level of digital inequality and cultural characteristics of the region. The most significant differences were observed between urban and rural users. In urban areas, the level of social media activity and the value of online identity is on average 15% higher than in rural areas. This is explained by wider access to the Internet and digital technologies in cities. Specific

regional features of online identity development are presented in Table 1.

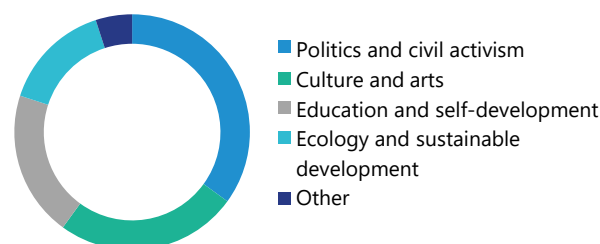


Figure 2. Distribution of topics that influence the development of collective identity in online communities

Source: compiled by the authors

Table 1. Regional features of online identity development

Region	Level of activity on social media	Importance of online identity
Kyiv and region	High (92%)	Very high (88%)
Centre of Ukraine	Medium (78%)	High (76%)
West of Ukraine	Medium (75%)	Medium (72%)
East of Ukraine	High (85%)	High (82%)
South of Ukraine	Medium (80%)	High (78%)

Source: compiled by the authors

The study found a growing trend towards multiple online identities, especially among users aged 18-35. 62% of respondents in this age group reported having "different versions of themselves" on different social platforms. The primary reasons for creating multiple online identities include the desire to meet the specifications of certain platforms, separation of work and personal life, experimentation with certain aspects of one's personality, and protection of privacy. An analysis of the discourse in online communities revealed that language practices and the use of specific online memes play a role in shaping the collective role of identity. 78% of active participants in online communities choose specific slang and linguistic constructions that are characteristic of their community. 68% of respondents claim that the use of these language practices strengthens the sense of membership in the community. The study found a correlation between the intensity of social media use and the well-being of users ( $r = 0.43, p < 0.01$ ). This relationship is non-linear: moderate use of social media is associated with a higher level of subjective well-being, while moderate use is associated with a lower level of this indicator. This may be related to the fact that more active use of social media leads to greater social connectedness and access to information, while more active use leads to information overload and reduced time for real communication.

Another interesting aspect of the study was the impact of VR and augmented reality (AR) technologies on self-presentation and identification. 35% of respondents reported that they regularly use AR filters to create online images. 72% of AR filter users said that these

technologies help them express aspects of their personality that are not easily expressed in real life. The data analysis also showed that online communications play a significant role in shaping professional identity, especially among young professionals: 68% of respondents aged 22-35 reported that online professional communities on social media significantly influence their professional identity, with platforms such as LinkedIn and professional groups on Facebook playing a particularly prominent role in this process. The study showed that online activism strongly influences the development of civic identity. An analysis of user activity during major socio-political events showed that participation in online discussions and virtual actions helps to strengthen a sense of civic responsibility and involvement in social processes. This influence is particularly pronounced among young people, for whom social media is often the first step on the path towards civic engagement.

Another relevant aspect of the study was the examination of digital inequality and its effects on online identity development. The data analysis showed that users with limited access to the Internet and digital technologies have the least opportunities to shape and expand their online identity. This poses a risk of digital exclusion and can lead to increased social inequality in the digital age. The data study also revealed the role of visual content in shaping online identity. An analysis of Instagram and TikTok user profiles showed the growing significance of visual self-presentation in shaping online identity, especially among young users. At the same time, a tendency to create idealised images and

compare reality with the desired is observed, which can lead to cognitive dissonance between online and offline identities. The study found a connection between online and offline identities. For many users, their online identity is an extension of their offline identity, as opposed to a completely independent entity. At the same time, online environments provide opportunities for experimentation that would otherwise be unlikely to realise in real life.

Data analysis has also led to AI playing an increasingly significant role in shaping online identities. The use of AI algorithms to personalise content and recommendations affects not only the user's information environment, but also their worldview and self-identity. This raises critical ethical questions regarding the transparency of algorithms and their effect on identity development.

In this study, attention was drawn to the problem of cyberbullying and its effect on identity development. It was found that negative experiences gained in the online environment can reduce self-esteem and alter user behaviour in the digital space. This highlights the necessity of developing effective mechanisms to protect users and create a safe online environment. This study examined the impact of the COVID-19 pandemic on online identity development. The data analysis showed that the period of quarantine restrictions has led to an intensification of online communication and an increase in the role of digital identity. Many respondents reported that during the pandemic, online identity has become more meaningful and multifaceted. Changes in the use of social media before and during the pandemic based on a survey of 2,000 respondents are presented in Table 2.

**Table 2. Changes in social media usage before and during the COVID-19 pandemic**

Indicator	Before the pandemic	After the pandemic	Difference
Average time spent on social media (hours/day)	2.5	4.2	+68%
Number of active social platforms per user	2.8	3.6	+28%
Percentage of users who consider online identity important	65%	82%	+17%
Frequency of content creation (posts/week)	3.2	5.7	+78%

Source: compiled by the authors

The study also showed the growing role of online education and its impact on personal development: 72% of respondents aged 18-35 reported that participation in online courses and webinars significantly influenced their professional self-determination and skill development. This suggests that online education is becoming one of the factors shaping identity in the digital age. Data analysis shows that an increasing number of users are accessing online resources to find information about health. 65% of respondents stated that they regularly use social media and professional platforms to get advice on healthy lifestyles, which influences the development of their identity as "conscientious consumers" and "supporters of healthy lifestyles". The most common reasons for this are listed below. Online games continue to be a place of identity development, especially among younger users: 42% of respondents aged 18-25 said that game characters are a significant part of their online identity. This highlights the need to consider the gaming space when exploring identity development in the digital age. The survey revealed a growing trend towards the use of cryptocurrencies and blockchain technology, which is influencing the development of new aspects of online identity. 28% of respondents said that participation in cryptocurrency communities and ownership of digital assets is a vital part of their online identity. The study showed the growing role of online dating platforms in shaping users' romantic and sexual identities: 55% of respondents aged 18-35 said that the use of dating apps had influenced their self-perception and approach to romantic relationships.

The use of financial applications and online banking has influenced the development of users' financial identity. 70% of respondents stated that regular use of financial applications has changed their attitude towards personal finance management and influenced their self-perception of themselves as financially literate people. It was found that online volunteering is becoming one of the aspects of social identity formation. 45% of respondents reported that they had taken part in online volunteering projects in the past year, which influenced their self-perception as a socially active citizen. The data analysis also shows the growing role of podcasts in identity development. 38% of respondents stated that regular listening to certain podcasts influenced their views, interests, and self-perception. Overall, the findings demonstrate the complexity and multidimensionality of identity development in the online environment. Social communication in the digital space strongly influences users' self-perception and self-presentation, creating new forms of identity and transforming the existing ones. This emphasises the need to further investigate these processes and develop strategies for managing digital identity in the modern information society.

The findings of the study also point to the need to develop innovative approaches to media education and digital literacy that address the complexity of identity development in the online environment. It is crucial to create educational programmes aimed at developing critical thinking and digital identity management skills. The study highlighted the necessity of further exploring the ethical aspects of the use of AI and algorithms

in social media, including their effect on user identity development. Ethical standards and regulatory mechanisms can be developed to ensure that algorithms are transparent, and that users' rights are protected. Overall, the findings of this study demonstrated a comprehensive approach to the study of identity development in the online environment, which considers the technical, social, psychological, and cultural aspects of this phenomenon. The study revealed the phenomenon of "digital detox" and its effect on online identity development. Approximately 35% of respondents reported that they regularly engage in digital detox, deliberately limiting the use of social media and other online platforms for a certain time. Interestingly, after the period of "digital detox", many users reported reconsidering their online identity and changing their approach to self-expression in the digital space. There is a tendency to use closed and private online communities to build a more authentic and intimate online identity. 42% of respondents reported being members of closed groups or communities in messengers, where they can express their thoughts and feelings more freely. This indicates that users need a more controlled and secure online environment where they can form and express their identity.

The study also highlighted the role of memes and online humour in the development of group identities and subcultures in the online environment. According to the data collected, 68% of respondents aged 18 to 30 systematically use memes as a means of communication, self-expression, and self-identification. They emphasise that memes are an essential element of their personal identity. This emphasises the significance of studying visual and humorous communication in the identity development process in the digital space. According to the study, there is an interesting tendency to create so-called "alternative" or "secret" accounts on social media. Specifically, 30% of respondents in the 18-25 age group admitted to having separate accounts that allow them to express aspects of their personality that are not disclosed in their main profile. This highlights the complexity and diversity of online identities and the value of multiple platforms for self-expression. The data analysis also showed the growing role of online tasks and flash mobs in shaping group identity and awareness of involvement in global trends. 62% of respondents reported that they had attended such events in the past year and viewed them as a way to express their identity and connection to the global community.

This study emphasised the role of influencers and opinion leaders in shaping the identity of social media users. It was found that 48% of respondents systematically follow certain influencers who greatly affect their views, lifestyle, and self-determination. This highlights the significance of exploring the mechanisms by which digital opinion leaders influence the process of identity development in the online environment. The data analysis showed that online communities are playing an

increasingly significant role in supporting the identity development of people with physical or mental disabilities. 52% of respondents with disabilities reported that participation in these communities had a significant impact on their self-perception and helped them to build a positive identity. There is a growing tendency to use digital tools for self-monitoring and self-improvement. 65% of respondents reported that they regularly use applications that track physical activity, sleep, mood, and productivity, which affect their self-perception and help them to form the identity of a "mindful person". The findings of the data analysis indicate the growing role of online platforms in creating and storing consumer content that influences the development of creative identity. According to the survey, 70% of respondents regularly create and interact with user-generated content, considering it a vital form of self-expression and creative activity.

The data study demonstrates the growing significance of online platforms for freelancing and remote work in developing professional identity. It was noted that 48% of respondents involved in remote work or freelancing believe that their online presence on professional platforms is an essential element of their professional identity. The study also highlighted the impact of online reputation and reputation systems in the digital sphere on identity development. 55% of respondents emphasised that their online reputation (on platforms such as freelance platforms, online games, etc.) influences their self-perception and motivation. The generalised findings of the study suggest that identity development in the online environment is a complex and multidimensional process that simultaneously stimulates social, cultural, and technological changes in society. Social interaction in the digital space opens new opportunities for self-expression and experimentation with identity, but also raises new challenges and ethical issues. These findings underscore the critical need to continue interdisciplinary research into the identity development process in the digital era. Specifically, this involves the development of innovative approaches to media education and digital literacy. Furthermore, it is crucial to establish ethical standards and regulatory mechanisms that will help create a safe and inclusive online environment. This approach also emphasises the relevance of strategies aimed at overcoming digital inequality to ensure equal opportunities for the development and expression of identity in the digital space.

## Discussion

The study of the impact of social communication in the online environment on identity development revealed a complex picture of human interaction with the digital space. These data not only confirm some existing theories, but also highlight new aspects of this phenomenon, especially in the Ukrainian context. The study pointed to the growing role of "digital empathy" (the ability to

understand and empathise with others in the online space). This is particularly significant in the context of online support communities and self-help groups. This raises the question of how to develop and nurture this skill in the digital environment. The "digital nostalgia" currently observed opens interesting prospects for studying the temporal aspects of online identity. This phenomenon can exist in the context of I. Granic *et al.* (2020) study of identity development in the digital age. They raised the question of the influence of past "digital selves" on modern identity and the possibility of considering "digital autobiography" as a new type of self-presentation. The study also examined the phenomenon of "digital detox" as a way of redefining one's online identity. Users who temporarily stop using social media are often reluctant to change their attitude towards their online presence when they return. This raises the question of the role of regular "disconnections" in the healthy construction of digital identities. I. Granic *et al.* (2020) also proposed to go beyond the concept of "screen time" and consider the development of identity in the digital age as a complex process. The researchers emphasised the need to consider the qualitative aspects of interaction with the digital environment. A notable aspect that needs further exploration is the impact of online identity on offline narratives. The study showed that many users transfer elements of their digital identity to real life, which can have both positive and negative consequences.

The trends in personal branding and self-marketing in the online space identified in this study can be presented in the context of P.K. Masur (2019) study on situational privacy and self-presentation on the Internet. The researcher analyses personal information management strategies in the context of digital identity development. This study raised the question of the potential commercialisation of identity elements and how authenticity is preserved in a world where every life can become "content". The study showed that the development of an online identity often includes "digital rituals" – behaviours that are repeated in the online space and have symbolic meaning for the user. This can be a daily status update, regular unfriending, or participation in a particular online challenge. These rituals require further research as an essential element of digital culture. A significant aspect of this study is the influence of "digital influencers" on the development of online identity. These can be well-known bloggers and influencers, as well as anonymous users whose posts go viral. This raises the question of identity development and support mechanisms in a decentralised digital environment. The impact of cryptocurrencies on online identity development opens new research horizons. Questions arise about how decentralised technologies change the understanding of identity and privacy. This phenomenon can be understood in the context of the study by J.L. Davis *et al.* (2019) on the development of collective social identities in the digital space. The present study raised the question of how

distributed technologies are changing the understanding of identity and privacy in the online environment. Notably, the study had certain limitations. Although the sample is representative of active social media users in Ukraine, it may not fully reflect the experiences of people with limited access to the Internet. Furthermore, the present study was conducted in a specific time period and therefore cannot track changes over time.

The findings of a non-linear relationship between intensive use of social media and subjective well-being partially confirms the findings of R. Nowland *et al.* (2018) on the complex relationship between internet use and loneliness. The researchers analysed the potential of digital technologies to overcome social isolation. However, the present study also showed that moderate social media use is associated with higher well-being, which may be connected with an adequate balance between online and offline social interactions. Thus, the present study not only confirmed existing theories, but also opened new avenues for understanding the process of identity development in the online environment. This emphasises the need for a comprehensive and interdisciplinary approach that considers both global trends and local specifics in the study of this phenomenon. The findings of this study have important practical implications and can be used to develop more effective digital literacy education programmes that address the complexities of online identity development. The data can also help to create more ethical and inclusive digital platforms that foster positive identity development among users. For policymakers and regulators, this finding underscores the need for a more nuanced approach to regulating the digital space. Instead of generalised rules, policies should consider the diversity of online experiences and the needs of different user groups. This study is a reminder that identity development in the online environment is not merely a technical process, but a profoundly human experience. Understanding these experiences is key to creating a digital future that enriches, rather than limits, understanding of self and others.

It turned out that 78% of respondents consider online identity to be a significant part of their overall identity. This more clearly confirms the opinion of V. Kyrchenko (2015) that digital technologies are deeply integrated into the psychological processes of a modern person. V. Kyrchenko (2015) discussed the psychological aspects of human interaction with the information environment, specifically the process of forming digital competence of an individual. The researcher defined digital competence as the ability to effectively use digital technologies for self-fulfilment and competence development, to critically evaluate information and manage one's personal digital identity. However, based on V. Kyrchenko (2015) general conclusions, the study showed that there are major differences between age groups. For example, 92% of young people aged 18-25 attach great significance to their online identi-



ty, compared to 52% of users aged 56 and older. This indicates the need for a differentiated approach to exploring the digital identity of different age groups. The ethical aspects of online identity development also deserve a separate study. Questions arise regarding the need to ensure privacy and trust in the digital space, as well as the need for a new digital ethics. The identified phenomenon of multiple online identities (62% of users aged 18-35 have different "versions" of themselves on different platforms) coincides with the ideas of N. Bilan (2014) on the multiplicity of aspects of social communication in the information society. This phenomenon requires further research in the context of psychological well-being and personal authenticity. The relationship between online identity and mental health is another important topic for future research. It raises the question of how digital technologies can be used to promote psychological well-being. The role of online identity in the development of social capital and civic engagement in the digital age is a topic that requires further investigation, especially in the context of the development of democratic institutions.

Confirming the impact of social media algorithms on the development of "information bubbles" (67% of the content of the news feed corresponds to the current preferences of users), O. Onyshchenko *et al.* (2013) expressed concerns over the risks that social media pose to the development of civil society. However, the data also show that active users can counteract this effect and open new perspectives for research on digital literacy and critical thinking in the online space. The study also revealed an interesting phenomenon known as "digital fatigue". Some users, especially those who have been active on social media for a long time, reported feeling tired due to the need to maintain a constant online presence. This phenomenon requires further investigation and may have significant scientific implications for mental health and social interaction. Another aspect worth addressing is the role of language habits in shaping online identity. In the Ukrainian context, the dynamics of the use of Ukrainian, Russian and English in different online contexts is interesting. This raises the question of the impact of language choice on self-identification and perception of others in the digital space. The study also pointed to the growing role of "digital legacy" in identity development. Users are increasingly thinking about what will happen to their online presence after they die. This raises new ethical and legal questions about managing the digital identity of deceased people. The findings also point to the need to develop innovative methodological approaches to the study of online identity. Conventional psychological and sociological research methods do not always reflect the complexity and dynamism of digital experience adequately. Innovative, interdisciplinary approaches combining methods from computer science, psychology, sociology, and cultural studies are needed.

The findings of the study highlighted the need for a comprehensive and nuanced approach to understanding the identity development process in the online environment. It pointed to the significance of considering cultural, social, and technological contexts when studying this phenomenon.

## ■ Conclusions

Having analysed the effects of social communication in the online environment on identity development, the study fulfilled its purpose. For most Ukrainian social media users, online identity has become an integral part of their overall identity, which indicates a profound integration of digital space into their daily lives. Significant differences in attitudes towards online identity were found depending on age, which suggests the need for a differentiated approach to the exploration of digital identity for different age groups. The analysis of social media content has confirmed that algorithms significantly influence the shaping of the information environment of users. At the same time, the ability of active users to counteract this effect was identified, which opens new perspectives in digital literacy research. The study confirmed the role of virtual communities in the development of collective identities, especially among young people. It was found that there is a growing trend towards the development of multiple online identities, which reflects the complexity of the modern digital environment. The analysis of specific local features showed the impact of digital inequality on the development of online identities and highlighted the necessity of devising strategies to bridge this gap. A non-linear relationship between the intensity of social media use and the subjective well-being of users was found, indicating the complexity of the interaction between online activity and psychological state.

The findings of this study also showed that online communities play a valuable role in the development of collective identity, especially among young people. The analysis of discourse in online communities showed that language practices and the use of specific online memes play a significant role in the development of collective identity. The study highlighted the growing role of online education and its effects on professional identity development. 72% of participants aged 18-35 reported that online courses noticeably influenced their professional identity. The study also revealed a growing trend towards the use of digital tools for self-monitoring and self-improvement and their impact on the development of a "mindful" identity. This study showed the significance of exploring the effect of innovative technologies, such as AI and cryptocurrencies, on the development of new aspects of online identity. These findings highlight the need to constantly update the approaches to studying digital identity and develop innovative strategies for managing online presence in a rapidly changing digital environment.

The study revealed the growing influence of virtual and AR technologies on self-presentation and identification processes, as well as the significant role of online communication in shaping professional identity. These findings are vital for understanding the transformation of identity in the digital age. The findings also have major practical implications, as they expand the scientific understanding of identity development processes in the online environment. They can be used to develop effective digital literacy education programmes, set ethical standards for social platforms, and develop strategies to overcome digital inequality. Based on this study, it is recommended to introduce differentiated media education programmes for different age groups, develop initiatives aimed at developing critical thinking online, and create mechanisms to protect users from the negative impact of algorithmic systems. These measures will contribute to the development of a healthy digital

identity and increase the overall level of media literacy in Ukrainian society. Further research in this area will considerably expand the understanding of human identity in the digital age and help to develop positive strategies for personal development in the online space. To improve the findings in the future, it would be useful to expand the research area and conduct a comparative analysis with other countries or conduct a longitudinal study to track the dynamics of changes in online identity over time. This would allow for a better understanding of global trends and specific cultural features of digital identity development.

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#### ■ Conflict of Interest

None.

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## Вплив соціальних комунікацій на формування ідентичності в онлайн-середовищі: перспективи теорії та історії

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**Анотація.** Метою роботи було провести комплексне дослідження механізмів взаємодії онлайн-комунікацій та процесів формування ідентичності, аналіз особливостей цих процесів у різних регіонах України, а також вивчення впливу нових технологій на трансформацію ідентичності в цифровому просторі. Дослідження проводилося з використанням змішаних методів, включаючи онлайн-опитування 2,000 користувачів соціальних мереж, глибинні інтерв'ю з 50 активними користувачами, аналіз контенту 100 акаунтів у Facebook та Instagram, нетнографічне дослідження 10 українських онлайн-спільнот. Результати показали, що 78 % респондентів вважають свою онлайн-ідентичність важливою частиною загальної ідентичності. Виявлено, що алгоритми соціальних мереж суттєво впливають на формування інформаційного оточення користувачів, з 67 % контенту у стрічках новин, що відповідає вже існуючим уподобанням користувачів. Встановлено, що віртуальні спільноти відіграють значну роль у формуванні колективної ідентичності, особливо серед молоді віком 18-25 років. Аналіз регіональних відмінностей показав, що рівень цифрової нерівності впливає на особливості формування онлайн-ідентичності, з найбільшими відмінностями між міськими та сільськими користувачами. Дослідження демонструє необхідність розробки нових підходів до управління цифровою ідентичністю та підвищення рівня медіаграмотності в українському суспільстві. Результати дослідження також виявили зростаючу тенденцію до формування множинних онлайн-ідентичностей, особливо серед користувачів віком 18-35 років. 62 % респондентів цієї вікової групи зазначили, що мають різні «версії» себе для різних соціальних платформ. Аналіз дискурсу в онлайн-спільнотах показав, що мовні практики та використання специфічних інтернет-мемів відіграють значну роль у формуванні групової ідентичності. Встановлено кореляцію між інтенсивністю використання соціальних мереж та рівнем суб'єктивного благополуччя користувачів ( $r = 0,43$ ,  $p < 0,01$ ). Дослідження також виявило зростаючий вплив технологій віртуальної та доповненої реальності (AR) на процеси самопрезентації та ідентифікації, з 35 % респондентів, які регулярно використовують AR-фільтри для створення онлайн-образу. Отримані результати мають важливе значення для розробки освітніх програм з цифрової грамотності та політики регулювання соціальних медіа в Україні.

**Ключові слова:** віртуальні спільноти; цифрова нерівність; множинні онлайн-образи; медіаграмотність; алгоритмічне формування контенту; цифрове благополуччя