THE IMPACT OF DIGITAL RISKS ON THE USER'S IDENTITY

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Summary
The article examines how the rapid expansion of digital technologies has increased vulnerabilities related to personal identity in online environments. It highlights that as users rely more heavily on digital platforms for communication, commerce, and social interaction, their personal data becomes a valuable target for cybercriminals. Digital risks such as data breaches, identity theft, phishing, and unauthorized surveillance can significantly undermine an individual's sense of security, privacy, and trust in digital systems. The article emphasizes that user identity is no longer limited to basic personal information but includes behavioral data, digital footprints, and online reputations.

When these elements are compromised, users may experience financial loss, reputational damage, psychological stress, and long-term consequences for their digital presence. The article also discusses how inadequate security practices, lack of user awareness, and weak regulatory frameworks exacerbate these risks.

Furthermore, the authors stress the shared responsibility of users, organizations, and governments in mitigating digital risks. Strong authentication methods, data protection policies, cybersecurity education, and ethical technology design are presented as key strategies to protect user identity.

Overall, the article concludes that safeguarding digital identity is essential for maintaining trust in the digital ecosystem and ensuring sustainable technological development in an increasingly interconnected world.

Key words: user identity, cybersecurity, data privacy, identity theft, data breaches, digital footprint, online security, personal data protection, cyber threats.

1. Introduction

The rapid expansion of the digital environment has fundamentally transformed contemporary society, affecting not only social and economic processes but also the psychological well-being and identity of individuals. The growing integration of digital technologies into everyday life has led to the emergence of new digital risks that influence users differently depending on their age, level of digital involvement, and psychological characteristics. This makes the study of digital risks highly relevant, particularly in the context of increasing digitalization, early digital initiation, and the diversification of online practices.

The scientific novelty of this study lies in a comprehensive and stage-based analysis of digital risks that affect users' cognitive, physiological, emotional, communicative, and identity-related characteristics. Unlike many existing studies that focus either on global technological risks or on isolated psychological effects, this research integrates empirical data with a

differentiated model of digital stages, allowing for a more nuanced understanding of how digital risks manifest and evolve.

The aim of the article is to analyze the impact of key digital risks on users at different stages of digital integration and to identify their relationship with psychological characteristics.

The objectives of the study are: to systematize existing approaches to the classification of digital risks; to empirically examine cognitive, physiological, communicative, emotional, and identity-related risks in the digital environment; to identify stage-specific features of users' responses to digital risks; and to substantiate the need for psychological support and risk management strategies for users in the digital environment.

2. Categorization of digital risks

We believe that an analysis of digital risks must begin with their categorization. In the scientific literature, they are presented in two categories: risks affecting global changes in society as a whole and risks affecting individuals based on their characteristics. Some researchers classify global risks as those related to the development of science and technology, the fusion of humans and machines, a global crisis in human biology, the risks of posthuman development, digital «slavery», excessive brain activity in the digital environment, and the difficulties in human-machine interaction *(Zhuk et al., 2014)*. It is worth noting that such conclusions have not been empirically confirmed and, in our opinion, are not amenable to study at this stage. However, it is important to note existing research on the positive impact of digitalization on individuals – the automation of extensive manual labor, the development of new digital systems capable of processing large databases, the development of robotics that contribute to the improvement of mental and psychological well-being, and others *(Gubbi et al., 2013)*.

It is important to note here that we do not insist on solely considering the positive impact of the digital environment on individuals. As noted previously, the digital environment remains ambivalent and influences users based on their psychological characteristics. Therefore, it becomes important to study the impact of digital risks on users of various types and digital stages. We hypothesize that, depending on the severity of certain digital markers, risk perception and responses to them may have different characteristics. To this end, we conducted an additional analysis of the scientific literature on types of digital risks and a clarifying empirical study of the relationship between these risks and the psychological characteristics of digital users.

3. Various types of digital risks

The first digital risk is determined by the decreasing age of digital initiation *(Livingstone et al., 2018)*. This refers to the increasing amount of time that modern users, especially children, spend in the digital environment. While we acknowledge the importance of considering this risk, we note several contradictory nuances. Firstly, such interaction with the digital environment is often not fully conscious – the individual lacks their own meaning in the digital environment and does not perceive the digital environment as a living space. Accordingly, the user can abandon their digital activities without much difficulty or switch to other activities. Secondly, the conscious use of digital resources is literally a requirement of modern society – the availability of technology and digital resources can impact not only an individual's productivity but also the specifics of their interactions and communication with society.

The second digital risk is associated with changes in the user's cognitive development. This digital risk typically impacts an individual's social and emotional intelligence and leads to a decline in cognitive processes in general, including speech. It is important to note that the diverse research on the impact of the digital environment on an individual's cognitive development has not yet allowed a unified conclusion about the possible consequences, and at this stage, addressing this issue remains difficult *(Kharchenko, 2025)*. Our study did not reveal a deterioration in cognitive functions in real life with active use of the digital environment.

However, the following features have been clarified: firstly, a deterioration in cognitive activity is possible in the initial stages of digital adoption, with stable indicators in subsequent stages. Secondly, with active and multifaceted use of the digital environment, cognitive neoplasms are possible in the user's psyche, which, in our opinion, does not have a negative impact, but, on the contrary, contributes to the comprehensive development of the individual. At the same time, a deterioration in cognitive activity in the initial stages negatively affects the individual and their dynamics in the digital environment, and therefore, we believe it is necessary to consider cognitive risk in the digital environment within the experimental study.

The third digital risk is related to the physical health of digital users *(Ghadge, 2024)*. Indeed, as the empirical study showed, changes in well-being indicators, neuropsychic tension, and psychophysiological indicators of stress were detected during digital activity among respondents of different ages and digital stages. Most likely, such changes are associated with other digital behavioral markers, as well as with the individual's overall activity. It is important to note that existing studies of physical risks do not take into account a number of features, including the ability of users at different stages to stabilize their condition and the varying severity of these risks. Therefore, we believe it is important to include a physiological risk indicator in the experimental study.

The fourth digital risk is associated with the user's communicative competence *(Narayanan et al., 2016)*. The impact of this risk leads to changes in the individual's relationship with society, as well as changes in socio-cultural practices. However, it is difficult to say unequivocally whether these changes are negative or positive. Accordingly, such conclusions require empirical confirmation. Furthermore, in addition to studying the user's general communicative competencies, it is important to examine their possible constructive and destructive orientation in the digital environment (using digital communication resources as an example). To achieve this goal, respondents were randomly selected from groups of users at different stages, and a battery of diagnostic tools was administered: the author's research questionnaire «Tendency to Cyberbullying» – to study the tendency toward aggression in the digital environment; The author's research questionnaire «Attitudes to Trolling» – to study the tendency toward provocative behavior; a survey to identify destructive forms of communicative behavior, including shoplifting, data leaks, cyberattacks, harassment, extortion, group bullying, and others.

Thus, as the stage of an individual's digital integration changes, so does the severity of destructive forms of communicative behavior in the digital environment. However, it should be noted that this dynamic occurs as a result of an individual's familiarity with digital resources and their perception of the digital environment as a living space. It is also important to note that the severity of destructive forms of behavior remains at a trend level within groups, suggesting the role of users' personal characteristics in the digital environment.

It is important to note that the data obtained should also be considered in a psychological support program and the presence of digital communicative risk should be clarified.

The fifth digital risk is defined as the risk of identity loss *(Zhurba et al., 2022)*. This risk is associated with identity change, the formation of an uncertain identity, including gender

roles, and the threat of losing one's self. While acknowledging the significance of these findings, we note a number of contradictory features. Our study analyzes the relationship between the real and the self-image in the digital environment. While these images are indistinguishable in the initial stages of digital identity, in later stages a new self-image, distinct from the real one, may develop.

It is important to note that such an image is coherent and not «blurred», which refutes the assumption of a loss of self. Furthermore, we note that the influence of the digital environment on the formation of an undefined identity is unproven. Most likely, the «blurring» of identity occurs in the postmodern world as a whole. In some ways, the resources of the digital environment may contribute to its strengthening.

The sixth digital risk is associated with the strengthening of psychological defense mechanisms *(Kremen et al., 2022)*. This digital risk is associated with escapism, when an individual prefers the digital environment to real space, leading to isolation and loneliness. It is important to note that the empirical study identified users' meanings associated specifically with digital communication. Furthermore, the cognitive forms of group interaction among users were also studied. The findings refute the assumption that the digital environment influences the development of a desire for isolation and loneliness. At the same time, in order to expand the understanding of the aforementioned variables, an additional study was conducted using the random number method and a battery of diagnostic tools: an adapted version of the methodology for the digital environment by D. Russell, M. Fergusson – to study the experience of subjective loneliness.

4. Study of the impact of digital risks on users

The study results revealed no significant differences in the severity of subjective loneliness across the sample groups. However, a trend toward lower high and moderate levels of loneliness is noteworthy across users at different stages: users in the digital adaptation, hybrid, and digital self-realization stages exhibit lower percentages of these variables. These results are likely related to the specific nature of the digital environment itself: the diversity of communication resources and the overall accessibility of communication allow users not only to find groups with similar interests but also to build deep interpersonal connections.

Furthermore, the overall severity of isolation among users at various stages is low. These results indicate, firstly, a standard distribution curve for the mental defense mechanisms of the respondents' environment, and secondly, the absence of a negative impact of the digital environment on the mental defense mechanisms of users at various digital stages. Certainly, loneliness and isolation are possible in the digital environment. However, the diversity of digital resources and variations of digital activity can compensate for these user characteristics.

The seventh digital risk is associated with destructive emotional patterns of users *(Zhuk et al., 2014)*. In our study, we noted the severity of frustration, aggression, anxiety, and emotional rigidity among users at various stages, which arise when confronted with the characteristics of the digital environment.

At the same time, our previous studies have highlighted the importance of studying the emotional patterns of a user's personality, which will allow us to clarify the characteristics of their emotional state when interacting with digital resources. We emphasize the importance of studying this indicator specifically at the experimental stage, as we consider emotional schemas to be one of the destabilizing manifestations requiring intervention. To study the severity and type of users' emotional schemas, respondents representing various

digital stages were randomly selected, and a questionnaire adapted for the digital environment was implemented.

According to our study, pre-digital users exhibit emotional schemas of duration (Hamp=22, with $\rho \leq 0.05$), low consensus (Hamp=19.500, with $\rho \leq 0.05$), rumination (Hamp=31.401, with $\rho \leq 0.05$), and blame (Hamp=18, with $\rho \leq 0.05$). The emotional schema of duration is a person's belief that the emotions they experience from interacting with the digital environment will be stable over time. Typically, this schema arises in a digital environment when users encounter new digital resources that are difficult to use but necessary. This is associated with a person's low instrumental literacy. The low-consensus emotional schema reflects an individual's feelings about their inability to effectively use the digital environment and, consequently, a perception of themselves as misunderstood and experiencing a unique range of emotions.

The rumination emotional schema is the belief that when interacting with the digital environment, one must dwell on negative emotions and experience them until digital experience expands. The prohibition on positive emotions in this case is associated with the belief that it is impossible to be happy if one fails at something. The blame emotional schema is associated with the search for external culprits for the individual's failure. For example, if such a user fails to interact with a digital resource, the developer of the digital resource, who created a complex algorithm, is to blame. Typically, such users with a high expression of this emotional schema may refuse to interact with the digital resource and feel destabilized for a long time.

Table 1

Emotional schemas of users during the digital immersion stage (first position)

Emotional schemas	Presence of schema in respondents (total – 43 people)
Invalidation	55.81% (24 people)
Loss of control	72.09% (31 people)
Duration	51.16% (22 people)
Rumination	67,44% (29 people)
Blame	58.14% (25 people)

According to the results presented in Table 1, users at the digital immersion stage are more likely to exhibit the following emotional schemas: invalidation (Hamp=44, with $\rho \leq 0.05$), loss of control (Hamp=31, with $\rho \leq 0.05$), duration, rumination, and blame. It is worth noting that invalidation as a user's emotional schema represents the individual's belief that other users do not understand the specifics of their emotional state and are unable to provide any help. We hypothesize that the severity of this schema may be related to a lack of familiarity with digital resources where like-minded individuals and people capable of providing assistance and support communicate. In this case, the individual may feel uncomfortable and lonely in the digital environment; however, as their digital immersion stage increases, such experiences may change. Conversely, the emotional schema of loss of control is expressed as a belief in the need to control or suppress emotions. This emotional schema in the digital environment can likely develop as a result of several factors. First, unfamiliarity with digital language and reduced operational skills (e.g., typing speed) can hinder users' emotional responses. Second, individuals initially adopting digital technologies may encounter fraud and provocation in the digital environment, and lack of experience in such situations leads to excessive caution when expressing their feelings. We hypothesize that this emotional schema can be reduced through the implementation of a psychological support system.

Table 2

Emotional schemas of users at the digital architecture stage (first position)

Emotional schemas	Presence of schema among respondents (total – 33 people)
Devaluation	57.58% (19 people)
Duration	66.67% (22 people)
Simplified view	78.79% (26 people)

According to the results presented in Table 2, users at the digital architecture stage exhibit emotional schemas based on the devaluation, duration, and simplified view types (Hamp=16; Hamp=37.500, with $\rho \leq 0.05$). The devaluation emotional schema indicates a rejection of their emotions when interacting with the digital environment. For example, the user does not believe that digital resources or other users can influence them. Therefore, respondents tend to downplay the emotional states they experience in the digital environment. The simplified view emotional schema is characterized by an aversion to mixed feelings or emotional ambivalence in the digital environment. However, digital resources and trends often contain ambivalent messages and emotions, which are more accessible to experienced users. Therefore, users at this stage do not recognize certain digital codes.

The emotion schema of insensitivity is characteristic of respondents who believe they lack strong emotional reactions. These users tend to believe that digital content does not and cannot have a strong influence on them. Furthermore, despite the ability and desire to establish interpersonal connections in the digital environment, they harbor ideas about the possibility of emotionally disengaging from these connections. The emotion schema of excessive rationality indicates a tendency to believe in the predominance of reason over emotion. Such users typically try to perceive information and digital actions logically. Furthermore, they tend to criticize any incoming information and seek evidence for it. Thanks to their developed instrumental skills, respondents are able to use a variety of digital resources to refute or prove certain information.

Thus, analysis of focus group data allowed us to determine the cognitive, physiological, and communicative risks for each user group.

It is worth noting that users in the pre-digital, digital immersion, and architectural stages exhibited cognitive risks, unlike other groups.

It's worth noting that the emotional and behavioral risks of users at various stages were studied. Interestingly, early-stage users tend to experience fear of not being able to cope with digital risks and frustration, which suggests that digital risk management methods are being integrated into psychological support programs for individuals in the digital environment.

5. Conclusions

The conducted study provides a comprehensive analysis of digital risks in the context of users' stage-based digital integration and their psychological characteristics. On the basis of theoretical generalization and empirical evidence, it has been demonstrated that digital risks are multidimensional in nature and manifest differently depending on the level of digital involvement, users' experience, and individual psychological traits.

The findings confirm the ambivalent nature of the digital environment: alongside potential threats, it offers significant resources for the development of cognitive, communicative, and identity-related capacities. Cognitive risks are most pronounced at the early stages of digital integration and tend to decrease as users' digital competence increases, indicating the adaptive potential of the human psyche under conditions of digitalization.

Physiological and psychophysiological risks manifest through increased tension and changes in well-being; however, their intensity is determined not only by the duration of digital activity but also by users' behavioral patterns and their capacity for self-regulation. Communicative risks do not exhibit an unequivocally negative character: destructive forms of digital behavior remain at a trend level and are largely associated with personal characteristics rather than with digital interaction itself.

The assumptions regarding a direct link between digital engagement and increased isolation, loneliness, or identity loss were not empirically confirmed. On the contrary, digital resources may compensate for deficits in social interaction and contribute to the formation of a coherent, albeit distinct, digital self-image. At the same time, the emotional sphere appears to be the most vulnerable domain, particularly at early and transitional stages of digital integration, where elevated levels of frustration, anxiety, rumination, and emotional rigidity are observed.

Perspectives for further research include the expansion of longitudinal studies to examine the dynamics of digital risks across the life span and to clarify causal relationships between digital engagement and psychological changes. Future research should also focus on cross-cultural comparisons in order to identify sociocultural factors that mediate the perception and manifestation of digital risks. An important direction involves the development and empirical validation of targeted psychological support and digital risk management interventions tailored to specific digital stages. Additionally, further studies may explore the role of individual differences – such as personality traits, coping strategies, and emotional regulation styles – in moderating users' vulnerability or resilience to digital risks. Finally, the rapid evolution of digital technologies necessitates continuous revision of digital risk classifications and the inclusion of emerging phenomena, such as artificial intelligence–mediated communication and immersive virtual environments, into psychological research frameworks.

References

1. Gubbi, J., Buyya, R., Marusic, S., & Palaniswami, M. (2013). Internet rechei (IoT): bachennia, arkhitekturni elementy ta maibutni napriamky [Internet of Things (IoT): A vision, architectural elements, and future directions]. Kompiuterni systemy maibutnoho pokolinnia, 29(7), 1645–1660. [in Ukrainian] https://doi.org/10.1016/j.future.2013.01.010

2. Kharchenko, N. V. (2025). Tsyfrova bezpeka pidlitkiv: otsiniuvannia navychok upravlinnia kontentom, tsyfrovoi identychnosti ta informatsiinoho seredovyshcha [Digital safety of adolescents: Assessment of content management skills, digital identity, and the information environment]. Problemy osvity, 1(102), 576–589. Kyiv: Instytut modernizatsii zmistu osvity. [in Ukrainian] https://doi.org/10.52256/2710-3986.1-102.2025.39

3. Kremen, V. H., Sysoieva, S. O., Bekh, I. D., Voznesenska, O. L., Havrysh, N. V., Honchar, L. V., Zhurba, K. O., Ilin, V. V., Kanishevska, L. V., Kyrychenko, V. I., Komarovska, O. A., Korniienko, A. V., Kunytsia, T. Yu., Kurbatov, S. V., Lytovchenko, O. V., Malynoshevskyi, R. V., Machuskyi, V. V., Naidionova, L. A., Reipolska, O. D., Tolochko, S. V., Fedorchenko, T. Ye., Kharchenko, N. V., Chaplinska, Yu. S., & Shakhrai, V. M. (2022). Kontseptsiia vykhovannia ditei ta molodi v tsyfrovomu prostori [Concept of education of children and youth in the digital space]. Visnyk Natsionalnoi akademii pedahohichnykh nauk Ukrainy, 4(2), 1–30. [in Ukrainian] https://doi.org/10.37472/v.naes.2022.4206

4. Livingstone, S., Mascheroni, G., & Staksrud, E. (2018). Yevropeiske doslidzhennia vykorystannia Internetu ditmy: otsinka mynuloho ta peredbachennia maibutnoho [European research

on children's Internet use: Assessing the past and anticipating the future]. Novi media ta sus-pilstvo, 20(3), 1103–1122. [in Ukrainian]

5. Zhurba, K. O., Kanishevska, L. V., Malynoshevskyi, R. V., Kharchenko, N. V., & Fedorenko, S. V. (2022). Vykhovannia ditei ta molodi u tsyfrovomu prostori [Education of children and youth in the digital space]. Kyiv. [in Ukrainian]

6. Zhuk, Yu. O., Sokoliuk, O. M., Dementievska, N. P., & Sokolova, I. V. (2014). Internet-oriien-tovani pedahohichni tekhnolohii u shkilnomu navchalnomu eksperymenti [Internet-oriented pedagogical technologies in a school educational experiment] (Yu. O. Zhuk, Ed.). Kyiv : Atika. [in Ukrainian]

7. Ghadge, Nikhil. Digital Identity in the Age of Cybersecurity: Challenges and Solutions. London Journal of Research in Computer Science and Technology, 2024, vol. 24, issue 1, compilation 1.0. Available at: https://www.researchgate.net/publication/381852443_Digital_Identity_in_the_Age_of_Cybersecurity_Challenges_and_Solutions

8. Narayanan A., Bonneau J., Felten E., Miller A., Goldfeder S. Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction. Princeton University Press, 2016.